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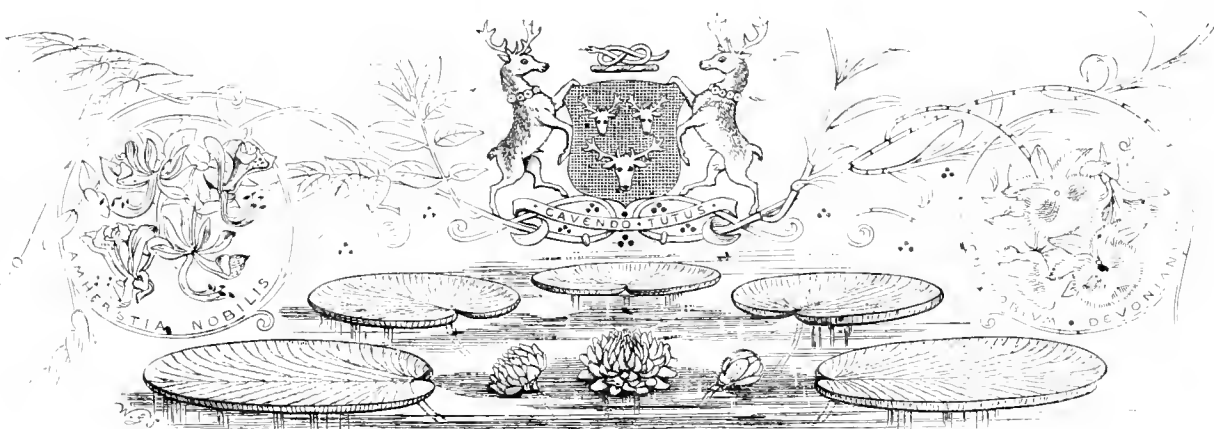
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JULY 4, 1891.

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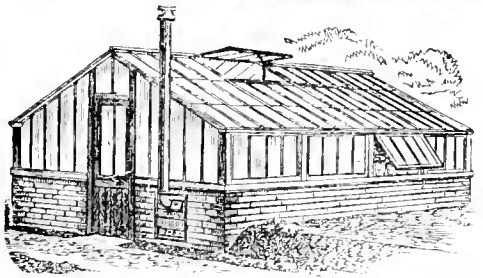
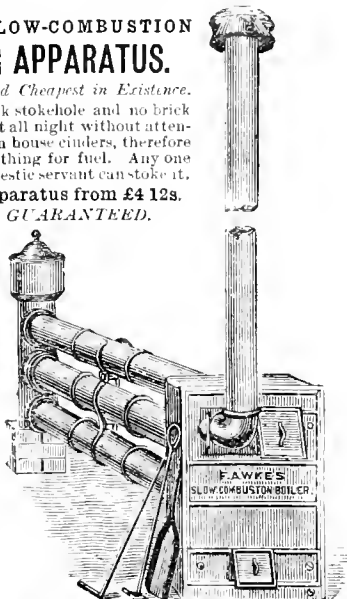
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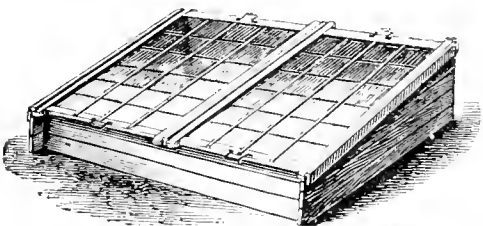
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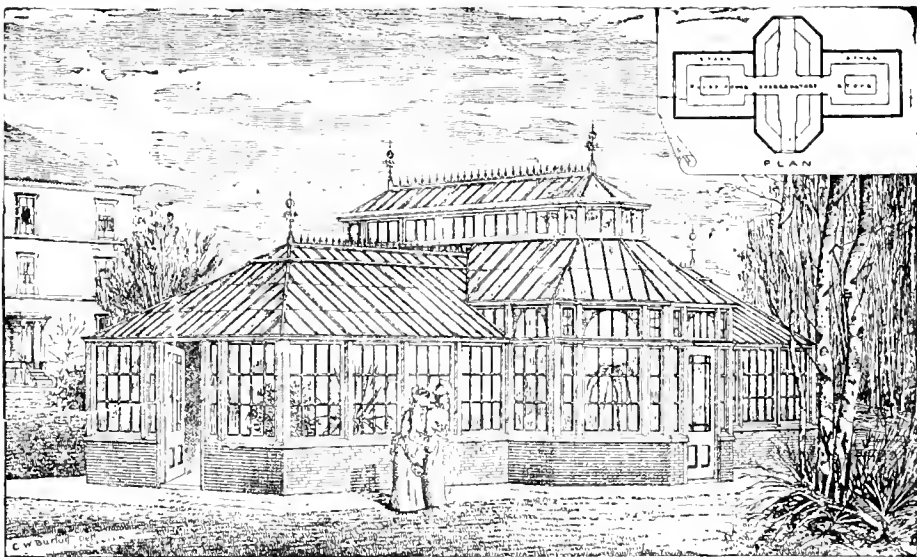
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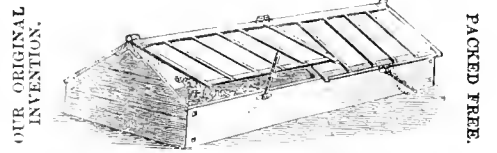
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9 ft. " x 3 ft.	2 15 0	12 ft. " x 5 ft.	4 12 6
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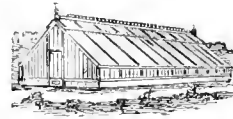
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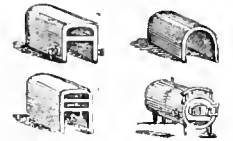
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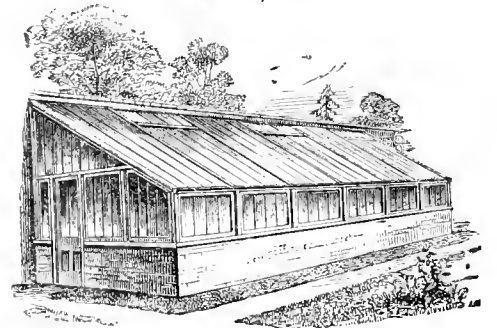
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ORDER OF THE HIGH COURT OF JUSTICE.

The Horticultural and Agricultural Chemical Coy. *VERSUS* The Agri-Horticultural Chemical Coy.,
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PLAINTIFFS. DEFENDANTS

The Court granted an **INJUNCTION RESTRAINING THE DEFENDANT COY.**

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- (2) From infringing the Plaintiff's Letters Patent, dated 11th March, 1886, by making or selling any compounds made according to the specification thereof or being a colourable imitation thereof.
- (3) The Court also ordered the Defendant Coy. to pay to the Plaintiffs £40 towards their costs of this action.

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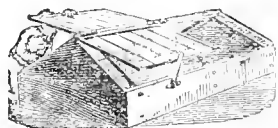
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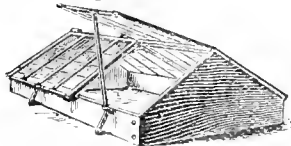
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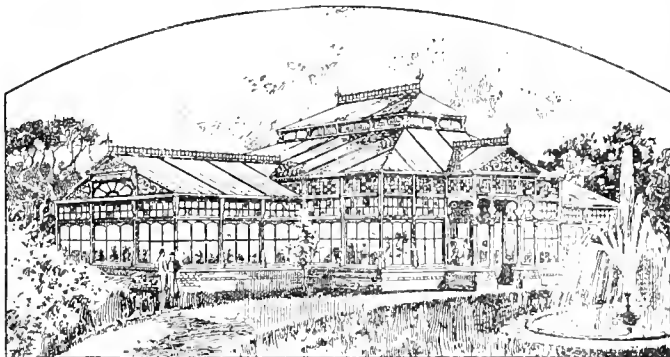


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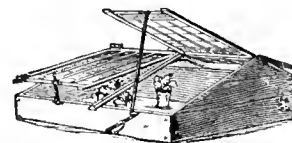
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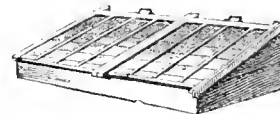
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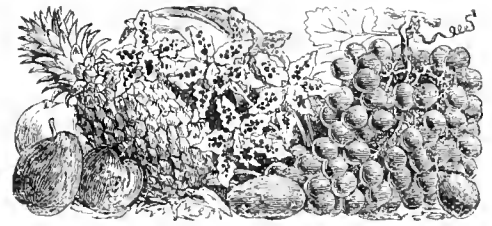
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THE **Gardeners' Chronicle.**

SATURDAY, JULY 4, 1891.

KNEBWORTH HOUSE.

SINCE my description of Knebworth in the *Gardeners' Chronicle* five years ago, the changes and improvements in the property have been very marked. A notable change has been the foreign residence of the owner, the Earl of Lytton, who, for the second time, has left his Hertfordshire home and his country in the service of the Queen. In consequence of his absence, Knebworth has been let to Mr. J. C. Osgood, an American gentleman. Mr. Osgood is fonder of hunting than of gardening, and has filled his enlarged stables—enlarged mainly at his own expense—with about thirty horses, but it must not be imagined that the gardens on that account have fallen into neglect. Mr. Kipling's service as head gardener here is of twenty-five years' date, and commenced under the late Lord Lytton, who then bore the more familiar name of Sir Edward Bulwer Lytton. The novelist and M.P. for Herts, till he became a peer, was one of those ardent persons whose pursuits are passions. He was passionately fond of gardening, and Mr. Kipling conducted the improvement of an old-fashioned garden, then not so extensive as the area covered by the great house, till his mother, Mrs. Bulwer Lytton, constructed one of customary size for a great house. The previous account of Knebworth, just referred to, described the horticultural fairyland which Lord Lytton created, comprising shrubberies and an Italian garden, a series of pleasure gardens, a rosery, a maze, and in the furthest distance a Roman garden of the time of Horace, with a temple of Diana and some appropriate classic busts ranged against a clipped Yew hedge as a background.

All these novelties and changes were carried out with great good taste, spiced sometimes by erratic genius. The last departure from Knebworth came in 1873, when Lord Lytton shook hands with his trusty gardener and bade him "Adieu!" sad word, says Byron, but one "which has been and must be." He departed for Bournemouth, and never returned. Other improvements and additions have been effected by the present Lord Lytton—the first earl, whose largest work, at present, as an innovator, has been the inclosure of 7 acres from the park to form a Wilderness, which is now in its fourth year of development, and which will in time become a very picturesque feature of the grounds. The present owner's taste is for "natural gardening," if the term may pass. We certainly have gardens which are far too formal and too much tricked out—too "dressy," or too artificial in their ornaments; and although Nature is not a gardener, and would make a very poor one, indulging in weeds and intercepting light and

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CHARLES NOBLE
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air with great trees before our very windows, still the term "natural" as opposed to "meretricious," may be allowed to pass. It has taken the form here of a protest against the formal bedding-out system. In 1886, about 6000 bedders were planted out annually in spring; the number has increased to 30,000 plants, but those which are used now are not the tender tribes of former days, such as the Pelargonium, Coleus, Iresine, and Calceolaria, so much as the hardier plants of herbaceous habit.

A fine collection of Hawthorns, another outcome of the owner's special taste, has been formed at Knebworth. There are already twenty-seven varieties, and others will be added, and when I mention that these beautiful blossoming thorns form a leading feature in the Wilderness, it will be evident that such natural productions of a wild garden as the Nettle, Sowthistle, and the Dock, are not allowed to overrun this cultured enclosure. Even the Bramble, with its handsome leaves, is restrained within due limits. The Knebworth Wilderness is, in fact, one which ladies could pass through in their ordinary costume without being stung and torn; and who would care for a garden from which the fair successors of Mother Eve were excluded, through its rude disorder, and the growth of Nature's most unlovely specimens of vegetable life, foul toadstools, slimy fungoids, and deleterious Agarics?

The gardens and pleasure-grounds now extend to twenty-seven acres, which are kept in order by fourteen men. There are three vineries, and another range of houses devoted to fruits and flowers, and a span-roof house has recently been erected, 60 feet long by 18 feet wide, with one division for miscellaneous plants, and another for Orchids. During Lord Lytton's viceroyalty of India, he sent these Orchids home, twelve years ago. Among various species are *Saccolabium*, *Vandas*, *Dendrobium*, and *Aërides*, which connoisseurs have said could hardly be matched. They have all been grown hitherto in the vineries, where they have usually done well; but the winter temperature has proved a little too low for the *Vandas*, and new quarters have therefore been provided. An exception to the above-mentioned experience exists in *Vanda cornuta*, which has always flourished vigorously, and sent out flower-spikes every year, each carrying fifteen or sixteen flowers. There is, at the present time, one plant of *Saccolabium* with three racemes of flowers, each 18 inches in length. A plant of *Aërides* stands 4 feet high, and has several leading breaks and many flower-spikes. Besides these, there are some varieties of *Cœlogyne cristata*, which came from India with the rest, and which Mr. Kipling has had to establish. The best of these is a variety similar to the one known as the Chatsworth form, and the best plants of this are 2 feet across. In their season they bloom very freely. The most remarkable of the *Saccolabium* are *S. guttatum* and *S. g. giganteum*.

Perhaps I may be allowed to repeat what was said of the Knebworth Orchids six years ago, that the Vines are not subordinate to them, but the contrary, since a full crop of Grapes is expected, the first and earliest crop being started in December, while the Muscats and late black sorts ripen in September. Mr. Kipling says that after the Grapes are ripe the Orchids remain in the late vinery, where the regular use of fire-heat is discontinued from the time the crop is ripe. The temperature is never allowed, intentionally, to fall below 50°, though in the morning, after a cold night, it has occasionally reached 45°, a lowering which did not suit the *Saccolabium*,

though, curiously enough, the *Vandas* and *Aërides* did not appear to suffer from it. A temperature of from 50° to 55° is aimed at in the resting months. They stay in the same house till the end of December, when they are moved into the early vinery, where the night temperature is as above-named. As soon as the mid-season vinery affords them the required conditions, they are transferred to it, and afterwards to the Muscat-house, when the Vines are started. Here they are hung up, and their heads as much exposed to the light as the foliage of the Vines will allow; and through the summer the Orchids and the Muscats live by necessity under similar conditions of heat, air, and moisture.

Another improvement, just outside the garden, but not to be ignored from a landscape gardening point of view, has been effected since the opening of the Knebworth Station on the Great Northern Railway, by the building of a pair of entrance lodges, in Queen Anne style, in the village, and the opening of a new carriage-drive through the park to the house. H. E.

KEW NOTES.

THE large Cactus, *Cereus giganteus*, which was imported from Mexico in July last, and planted in the Palm-house, is showing active signs of life. There are several Pear-shaped growths, which will no doubt turn out to be flowers, besides signs of growth at the apex. This must be very gratifying, as it is the largest ever brought into this country, measuring 14 feet in height, with a girth of about 4 feet, and weighing 12 cwt. The wounds on it produced by bruising on its passage from Mexico, are quite healed up, through constant attention in the way of dressings with flowers-of-sulphur and powdered charcoal; so that there is considerable hope that this fine specimen will form one of the many attractions at these gardens for many years to come.

It is rather disheartening, that at the same time as we report the progress of one valuable plant, we have to record the downfall of another, but so it is; for, without a moment's warning, one of the largest Palms, *Latania borbonica*, syn. *Livingstonia chinensis*, in the Palm-house, snapped off about 12 feet from the ground. In its fall it came in contact with the wire supports of *Phoenix sylvestris*, another very large Palm, bringing that down also, and doing considerable damage to the plants around. It is rather remarkable that a plant of such tree-like dimensions should become top-heavy, and break off (which was undoubtedly the cause of it falling) without there being any other obvious cause.

SYRINGA JOSIKÆA, ETC.

Nor long ago an article in *Garden and Forest* discussed the different species of *Syringa* cultivated in gardens, and in this article it was stated that the native country of *Syringa Josikæa*, Jacq., was unknown, and that all the plants in cultivation have been derived from a single specimen found in a garden in Hungary.

The statement is inexact, and the country where this species grows naturally is well known. It was discovered in 1830 by the Baroness Josika (née Craki) in Transylvania, not in a garden, but on the rocky banks of the river Sebes, in Clausenberg, and the younger Jacquin, who named the plant in honour of the discoverer, showed specimens of it at the Congress of Naturalists held that year at Hamburg, inserting the first diagnosis of his species in the account of this meeting published in the *Bot. Zeit.* (1831, p. 67). Reichenbach, in his *Flora Germanica Excursoria*, published in 1830-32, gave characters of *Syringa Josikæa*, with an indication of the region

where it had been found; and the same author, in his admirable *Iconographia of the German Flora*, publishes a figure of it. In more recent years, various Hungarian collectors have found the plant in its native country, and have distributed specimens.

In order to remove any doubts which may still exist upon the occurrence of *Syringa Josikæa* growing spontaneously in north-eastern Hungary, I have written to some of my Hungarian correspondents, Professor Borbás, at Buda Pesth, and others. They give me exact and complete information with regard to the discovery of the plant, and the localities where it grows, which can leave no possible doubt with regard to its spontaneousness in Europe. I am indebted to the kindness of Mr. Carl von Flatt, judge at Elest, near Grosswardein, the country of *Syringa Josikæa*, for a list of the ten localities where it is known to occur, and which extend over the four counties of north-eastern Hungary—namely, Kolos, Bihar, Ung, and Marmaros. It is in the first of these, Kolos, that the plant was discovered on the river Sebes.

S. Josikæa grows everywhere near the water, at an altitude varying from 300 to 400 mètres above the sea, between 46° and 48° of north latitude and between 40° and 42° of east longitude. Mr. Victor Janka describes (*Ostreich, Bot. Zeit.*, 1885, 3, f. f.) the locality in the district of Marmaros, where he first found it, as covered with thickets of Alder, *Rhamnus frangula* and *Salix aurita*.

Mr. Carl von Flatt, to whom I am indebted for the bibliography* of this species, which is joined to this communication, writes:—"The home of the plant growing spontaneously is in the primeval forests of the mountain-chain which separates Hungary from Siebenburgen. For miles and miles of the territory where *S. Josikæa* grows neither a house nor a hut is to be seen. The stations discovered by me are both in the Remetz mountain forests; one, Lunka Kotuni (1885), furnished few specimens, but there are finer ones in Pareu Föeguczat (1886), where there are nearly a thousand plants growing. Probably Kitabel had heard of this plant. In his manuscripts, preserved in the National Museum at

* SYRINGA JOSIKÆA, JACQ. FIL.

- Nemzeti társaludo* (1830), p. 344.—*Erste quelle!* (Eine ungarische Zeitschrift.)
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Decaisne.—"Monographie des Genres Ligustrum et Syringa." In *Nouvelles Archives du Muséum d'Histoire Naturelle*, xii. (1879), pp. 1-45.
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Magyvárad termézetrajza (1890), p. 117. (Ungarisch.)

Buda Pesth, there is a drawing with the following note:—

"*Syringa prunifolia*, Kit. Ita interea pro conservanda memoria nomino que ad viam Munkacsino-Leopolim (Lemberg), ducentem inter Felső-Hrabonicza et Pudpolock in comitatu Beregh crescit, foliisque Pruni distincta, referente Dre Balla."

"Seudel, in his *Nomenclator Botanicus*, gives under

all idea of garden origin. And, you know, Monsieur Franchet has suggested the identity of *S. Josikæa* and *S. Emodi* of the Himalayas (*Observations sur la Syringa du Nord de la Chine*), but certainly no one had ever cultivated the Indian plant in Hungary previous to the year 1830, when *S. Josikæa* was discovered, and even to-day it is very doubtful if a single specimen of *S. Emodi* can be found in all that district.

this country *S. vulgaris* maintains itself easily, and for a long time, wherever it has been planted, and therefore, sometimes appears spontaneous or sub-spontaneous, although it is not indigenous here. This is the case, too, with *Philadelphus coronarius*, which is often found about the ruins of buildings which have been abandoned for more than half a century, furnishing the last trace of ancient gardens. *H. Christ, Bile, Switzerland, in Garden and Forest.*



FIG. 1.—*ACER VOLXEMI*, MAST.: SHOWING LEAF AND RIPE SEED-VESSEL.

S. Josikæa as a synonym, *S. vincetoxifolia*, Baumg. Where he found this I cannot tell, for Baumgarten did not publish such a name."

If *S. Josikæa* is to be considered an escape from cultivation, what known species can it have been derived from? Certainly there does not exist in Europe any species from which it can have been derived, a reason sufficiently important for rejecting

SYRINGA VULGARIS.—Permit me to call attention also to an error with regard to the native country of *S. vulgaris*. That plant does not grow wild in Piedmont, and its most western station is southern Hungary, in the neighbourhood of the Danube. If more western stations are given in some Floras, it is for plants which have escaped from gardens. [See note of M. André in our present issue. *Ed. G. C.*] In

ACER VOLXEMI (figs. 1 and 2).

In our number for January 20, 1877, we published an illustration of this species. It seemed to us at the time, as it has done ever since, to be amply worth a separate name, at least for garden purposes. No more appropriate name could be given to it than that of its discoverer, Mr. Jean van Volxem. He

met with it in the Caucasus, and his trained eye at once recognised its distinctness. From that time to the present we have grown the tree, which is perfectly hardy, and remarkable for its robust and rapid growth, and the silvery-whiteness of the under-surface of its "ample" leaves. On this account we have frequently exhibited branches of it, and urged its cultivation as an avenue tree, or for any purposes where a tree of rapid growth and noble aspect is required.

The materials upon which we relied in describing the species were avowedly inadequate, so that it is no wonder that, in the minds of other botanists not so familiar with the aspect and habit of the tree as ourselves, our tree was considered to be a form of *A. pseudo-platanus*, or of *A. insigne*. We had, however, taken the precaution to compare all the available specimens of these species before committing ourselves, and were favoured with specimens of both from M. Boissier himself. Our tree of *A. Volxemi* grows so rapidly, and the space at our disposal is so circumscribed, that we are perforce obliged to commit the barbarity of lopping the tree every year. In consequence of this, perhaps, no flowers have been produced. From Mr. Van Volxem, however, we have lately received flowering specimens, of which we hasten to give an illustration, and so to complete our original description (see fig. 2).

It will immediately be seen (fig. 2) that its erect corymbose inflorescence and glabrous filaments separate it widely from *A. pseudo-platanus*. Whether it be distinct from *A. insigne* (Boissier, not of Hook. in *Bot. Mag.*), is a question on which we shall have something to say shortly, when we lay before our readers an illustration of that species, which is also growing in our garden, which flowered for the first time two years ago, and is flowering again abundantly this season. *M. T. M.*

ROSES.

THE WINTER OF 1890-91, AND THE ROSES.

(Continued from vol. ix., p. 728.)

THE climatic variations in our small island, occasioned doubtless, to some considerable extent, by its being an island, are somewhat remarkable; and people who speak and write very dogmatically about the hardiness or otherwise of certain things without indicating the spot from whence they hail, are apt to mislead instead of guiding others. Thus the condition of that part of England of which I have hitherto written, the west and southwest, is considerably different from that about which I now write; a line drawn across England from say Hereford, would hit somewhere about Aldborough on the east coast in Suffolk, yet while at the former place the average rainfall is somewhere about 30 inches, at some stations in Suffolk it is not 20 inches, and in many places on the east coast less; the greatest difference occurs, too, in the autumn, which is drier here than in any other part of England. This must tend to the ripening of the wood and consequently to the power of resisting frost, and I feel strongly that if I had to choose a place in which to make a Rose garden, more especially a Tea Rose garden, I should choose East Anglia. True you have to reckon with the east winds, of which you feel the full benefit. We used to say at Deal, it blew to us straight from the North Pole, and there have been frequent jeremiads from one, at any rate, of your correspondents, as to the terrible condition of these regions; but withal we have always, since I can remember aught of Rose showing, had some of our very best flowers from that side of England; forty years ago, Ben Cant amongst nurserymen, and Mr. Hedge, of Eyre Hall, amongst amateurs, long before others thought anything about Teas, used to carry off the spoils of victory and bring reward. There cling to one's memory the blooms of *La Boule d'Or*, *L'Enfant Tisore*, and *Souvenir d'Elise*, which later years have not tended to efface. And now Ben still remains, his nephew has taken a leading place, and the clerical contingent, Messrs. Bernes, Foster Melliar, and Page Roberts have shown us that

East Anglia can hold her own in the fierce contests that are now fought for the Queen of Flowers.

That East Anglia has suffered this year in the severity of the winter there can be little doubt. One fearful howl reaches us from Norfolk sufficient to rouse the dead. "No Roses this year—all our Rose trees dead." My friend is apt to speak and write in hyperboles, and I therefore take this statement with the proverbial grain of salt—but even then it indicates that he has been very "hard hit."

Here is Mr. Ben Cant's statement: "The lowest temperature recorded here was on the night of Jan. 9, 7°, or 25° of frost; and all through the winter the temperature on the ground was from 6° to 8° lower than at 4 feet from the ground, and to this is to be attributed, perhaps, the great injury done to the dwarf Teas. Our soil is very dry loam, but I always grow my Teas in the lightest ground, which stands very high and most exposed. Standard Teas not much injured, excepting *Comtesse de Nadaillac*, *Devoniensis*, *Niphetos*, the *Bride*; many sorts entirely unprotected, such as *Anna Olivier*, *Madame Cusin*, *Madame de Watteville*, and *Maréchal Niel*, are not hurt at all, while the same sorts as dwarfs, although protected, are killed to the ground, and many of them killed outright—in fact, all dwarf Teas and *Noisettes* very much injured. Budded Teas and *Noisettes* of last season's working have not suffered at all, the former had no protection, the latter were covered with Bracken. It has often been said that green unripened wood is sure to be killed, but many of mine have made shoots 12 to 18 inches long, and not one of them was injured. H.P.s did not suffer anything worth mentioning." This is a very remarkable fact, and coming, as it does, from one of our oldest and most successful Rose growers, it deserves careful consideration; but as one swallow does not make a summer, so all this is the exception that proves the rule—the rule being how to grow standards where you can grow dwarfs. I confess it puzzles me, and I think will puzzle wiser heads than mine.

We have few amateurs who know the Rose better, and who are more careful observers of its manners and customs, than the Rev. Foster Melliar, Sproughton Rectory, Ipswich. In his report to me, he says, "Our lowest temperature was 5°, in a sheltered position, on a north wall, 4 feet from the ground. The position of the garden is a very sheltered one, although low, only about 23 feet above sea level. I have not yet examined my Teas (March 18), but have sampled them, and should estimate the loss at less than usual, due, I suspect, to the fact that the minimum temperature was little below the average, and the wood dried and ripened off in the autumn above the average; a few hybrids, such as *Puritan*, cut, but not many. I do not think it would be much loss if *Puritan* was cut out altogether." Yet one other testimony from the eastern counties, that of Mr. Burrell, of Cambridge, who writes: "We have no present bed of Tea Roses, as we had sent all away in November. The most severe frost that we had was about the level of zero, but with six inches of snow; and all together the tops of the Teas are killed and damaged—one was killed outright, except a few old standards. Dwarfs of all kinds have broken strongly from base. The hardier Teas such as *Caroline Kuster*, *Boule d'Or*, *Marie van Houtte*, *Madame Lambert*, *Souvenir d'un Ami*, *Souvenir de Sarah A. Prince*, *Princess of Wales*, *Jean Ducher*, *Francisca Kruger*, the most tender *Niphetos*; *Comtesse de Nadaillac*, *Devoniensis*, and *Innocent Pirola*; no damage was done to the H.P. Soil medium calcareous loam; situation quite open. I fear that the frost on Whit-Sunday and Monday may have done more harm than the winter's frost." I had a very bad account from Yorkshire: "We had about 25° of frost here, with snow hanging on the trees, and it is quite marvellous how well things have stood; none of the growth has been cut back or discoloured, and the shoots have grown a good deal since." I now pass away from the coast to the interior; the accounts vary very much. Mr. E. Mawley, that very close observer of meteorological events, says, "My soil is clay, and flints on

chalk, about 400 feet above sea-level. My plants are very little injured, less so than in much milder winters, although we had 22° of frost." This was written on March 3; but since then he has told me that there was considerably more damage done to his Teas than he had at first supposed.

Mr. E. B. Lindsell writes from Hitchin, "My soil is clayey loam, subsoil boulder clay. Situation open to E. and N.E., 218 feet above sea-level. The lowest temperature recorded during the frost was on December 22 last, when the thermometer fell to 3.4°, giving 28.6° of frost. The dwarf Teas which were earthed-up and protected with Bracken, appeared uninjured below the snow-line, but standards have suffered terribly. I entirely rely on standards to give exhibition blooms of *Comtesse de Nadaillac*, *Niphetos*, *Maréchal Niel*, *Madame Cusin*, *Madame de Watteville*, and *Ethel Brownlow*, and 20 per cent. of my stock have been killed though the heads of the plants were well filled with Bracken. It is somewhat singular that standards of *Niphetos* and *Ma Capucine* in pots, which stood outside all through the frost without protection except from a little Bracken, escaped comparatively uninjured, and have flowered well. All H.P.s, except *La France* and *Lady Mary Fitzwilliam*, are grown here as dwarfs on seedling or cutting Briar, and go through the winter unprotected by us; but in this last terrible winter Nature kindly gave the plants a covering of some 3 inches of snow, which saved us from disaster, as many plants were killed outright down to the snow-line. The sorts that suffered most were the *Baroness* and her two descendants. Her Majesty (certainly a tender Rose), and *Merveille de Lyon*, *Pride of Waltham*, *Lady Sheffield*, and some other of the smooth-wooded varieties of the *Victor Verdier* race. *Lady Mary* has suffered severely as a standard, but I am glad to be able to give a certificate of hardiness to Messrs. Dickson's fine Roses *Earl of Dufferin* and *Lady Helen Stewart*. *Suzanne-Marie Rodocanachi* has also stood the frost well. This beautiful Rose should be catalogued under Mr. Girdlestone's name, he being the *vates sacre* who rescued it from oblivion."

I have a few more notices of the effects of the winter in some of the Home Counties. The friends with whom I have corresponded have, as it will be seen, given much useful intelligence on the special subject for what I asked for information. Each day now brings us nearer the exhibition time, and the trepidations of growers are evidenced by the postponement of shows; but the last weeks have done wonders in bringing on the flowers, and should the fine weather continue, perhaps Roses may not be so far behind as has been supposed. *Wild Rose.*

THE BULB GARDEN.

THE DARWIN TULIPS.

THOSE who doubt the future of the new and entirely distinct race of Tulips which Mr. J. H. Krelage has named after the distinguished English naturalist, would no longer have harboured any scepticism had they visited Haarlem a few weeks ago, when this magnificent strain was in the full flush of its beauty. No words can adequately describe the appearance of batches of the Darwin Tulips in flower with the sun shining directly upon them. To a casual observer, the colours and shadings appear infinite, and, as a matter of fact, I believe there are over 2000 more or less distinct varieties. As they are destined to play an important part in spring gardening in the future, perhaps a few notes on their history will not prove unwelcome. For the main part of the facts, I am indebted to the veteran bulb-grower, Mr. J. H. Krelage, whose courtesy to visitors to Haarlem is well known, and whose extensive library is a bookman's Paradise, where the bibliophile might for years find plenty to interest, to instruct, and to amuse.

The Darwin Tulips are of Flemish origin, and originated from seeds sown between the years 1860 and 1872, from the best breeders and broken (variegated) strains, out of the most famous collections in

French Flanders, which, in their turn, had been undergoing the process of selection in the hands of one family for over a century. This collection would, in all probability, have been lost to horticulture if Mr. Krelage had not purchased it a few years ago, for the owner was almost as much disposed to destroy it as he was to sell it. However, Mr. Krelage secured the entire stock, and for the past few years has been busy in propagating the various sorts. In the course of the forthcoming autumn many thousands of bulbs will be put into commerce, although as yet the prices, if exceedingly moderate, taking all the circumstances into consideration, are somewhat prohibitive, and the strain

created a sensation. The varieties include almost every conceivable colour and shade, from pale porcelain to the darkest violet, from soft rose to the most brilliant red, from light brown to what is believed to be the darkest black in the floral world. These Tulips have very large well-formed flowers, which are placed on tall strong stems often nearly 2 feet in height. The leaves are proportionately large and strong. Indeed, compare a batch of these with one of ordinary Tulips, the contrast is as great as that which exists between a regiment of the Grenadier Guards and the most insignificant of country rifle corps.

As is usually the case, the choicer sorts are the

widely appreciated by horticulturists, not only in England, but throughout the world. In asking permission to use the name, Mr. Krelage received the following note from Professor Francis Darwin:—"If my father had been alive I am sure he would willingly have consented to your proposal, and I think I may safely answer for the other members of the family, who I am sure will feel pleased, as I do, at the spirit and manner in which you propose to name your new strain."

As regards cultivation, Mr. Krelage has no "patent method," as he finds that they do sufficiently well where other Tulips thrive. They certainly luxuriate in the light porous soil of Haarlem and



FIG. 2.—*ACAEA VOLXEMI*, MAST.: LEAF, INFLORESCENCE, AND FLOWERS. A, HERMAPHRODITE FLOWER; B, MALE FLOWER, BOTH MAGN. $\frac{1}{4}$ DIAM. (SEE P. 9.)

will not be extensively grown for bedding or massing purposes. The very cheapest with names, but mixed, are 30s. per hundred; whilst for single bulbs of the superior sorts the sums of from 7s. 6d. to £2, and even more per bulb, will be asked. And from all indications at present the demand will cause a nineteenth century Tulipomania on a small scale.

Darwin Tulips were quite a feature of the Paris Exhibition of the year before last, and were the admiration of all who saw them. The six beds in the lawn surrounding the basin before the Trocadero contained 720 varieties, of each of which there were four bulbs. This exhibit was awarded a Gold Medal, and at several other exhibitions they have

slowest and most difficult to multiply. Perhaps the most welcome, as they are also among the rarest of the new strains, the black and the darkest red shades will be the most generally welcomed by horticulturists. The black variety is simply a magnificent variety, for it is as deep and decided in its colour as anything to be found in the vegetable kingdom, and calls to mind the story of "la Tulipe noire," of Alexander Dumas, who probably never dreamt of the possibilities of horticulture, or that a "black Tulip" would one day be *un fait accompli*.

The dedication of the strain to the memory of the late Charles Darwin is a graceful act, which will be

Overveen. Mr. Krelage tells me that one or two amateurs in this country have not succeeded in growing the Darwin strain to perfection. If they described their methods of culture, it might be easy to suggest another method of procedure. *W. Roberts.*

PRESERVED PLUMS.

THERE stands before me a tin of well-preserved Plums; the weight of fruit and syrup is 2½ lb., and the cost to me is 9d. Possibly in the Stores the tin might be purchased more cheaply; at any rate, here we have delicious sweet cooked Plums, only

just needing thorough examining before eating, for less than 4d. per lb., and that, too, at any time of the year. Were these Plums of home preparation, we might have felt more satisfaction in the contemplation of a most interesting evidence of business enterprise. The label shows, however, that they are of American production, and from Monroe county, New York; they are called Egg Plums, and perhaps may be of a variety so called in America, but really are of about the size of Greengages, of a greenish-yellow colour, and clingstone. The tins are cheaper and contain much more fruit than the bottles, which seem to be of home production, so that we find America competing with our home preservers successfully, and offering to the million delicious fruits for ordinary consumption at moderate prices. We may regard a big Plum crop this season as an almost assured certainty. There is a large set, and only some very unlooked-for disaster can prevent the crop maturing. What are we going to do with it? That is, indeed, the question. We have few more perishable fruits than is the Plum, and a very abundant crop is, with our present restricted means of disposing of it, not always a desideratum. Once gathered, the fruits must be sold at some price quickly, or utterly spoil. We have seen that sort of thing frequently in previous years, when there has been a large Plum production. We shall assuredly see it again this year. Why can we not help to utilise our own great abundance at once for the benefit of growers and the consuming public, by setting up at home canning establishments, for the preservation of all superfluous fruit, rather than allow our fruits to waste, and purchase from America. I am not writing in this strain from a stupid Protectionist point of view. What we want to see is common sense prevailing, and our own growers doing what enterprising growers in America do so successfully. If it pays to can Plums and send them over here, to be retailed for consumption in thousands of British homes, at less than 4d. per lb., it ought to be possible for home-growers, if they had their own canning factories, to place tinned Plums at our disposal even more cheaply.

We have been urged to adopt the drying method of preserving Plums. That would, I doubt not, prove a much costlier and less satisfactory process of utilising Plums than is canning. There have been some foolish prejudices at times created against tin fruits and vegetables; but the alarm has no foundation in fact. Literally millions of imported tins of fruits and vegetables are consumed in this country, which are found to be entirely pure and healthy. The trade is so dependent upon a good reputation, that outsiders seem to put us to shame by the great care they take in the methods of preserving products, whether in cans or otherwise. The same thing prevails in connection with the trade in fresh fruits and vegetables, and until our home growers in the matter of selection and packing take a leaf out of foreign growers' books, they must be content to accept moderate prices. Whether we can compete with the French in the matter of drying Plums is doubtful; we may adopt the same methods, but still lack the climate to mature Plums suitable for drying—all that, however, has to be shown. So far as canning is concerned, it would seem certain that we can do that as well as others; we only want the appliances. We only fail in those industries which we can hardly domesticate, in the same way we can with preserves or jams, or in bottling fruits. In proper factories the work can be so much more efficiently done, that it would be wiser to pay a little more and have the contents of the tins thoroughly preserved. The present season offers a capital opportunity for the beginning of a home-canning trade. It is to be hoped that insular enterprise will not be backward. *A. D.*

ACACIA TREES IN EGYPT.

The Sial trees are so important in Abade life, that they merit a few words. Riding up the valley, all were hacked to pieces; sometimes every hough lay leafless on the ground, and the gnarled trunks

stood naked, bleeding a red gum. Elsewhere stood trees fairly preserved. Everywhere were long white poles with hooked ends, the bark and thorns carefully stripped off. These are the shepherds' hooks, so often seen in Scriptural pictures. . . . They are used for pulling down the branches, and shaking off the small green leaves. A child takes up a crook, and goes to a tree, quickly followed by his half-dozen sheep and goats. For them he shakes the tree, until no more leaves will fall, and the sheep pick them up from between the stones. For camels this is not enough; the boughs must be cut down, that the camels may eat them with that contemplative caution which is a chief characteristic. A traveller halting at sunset is soon up a tree with his axe. The dead boughs later on are burnt for charcoal, and exchanged for Wheat at the rif, a term applied to the river bank, as it is to the north coast of Africa, whence came the first ruffians. There has doubtless been much immigration from the West, and El Gharbawi is not an uncommon cognomen. . . . Further on, a line was drawn across the path, a mere scrape of the hand in the soft sand. This was the boundary between two families, whose farming differed. Secure at the summit of his mountain here lived an old patriarch, who had been blessed with a numerous family. His policy was to let all his trees grow to their fullest size. A white-bearded old man, and very pleasant; but, oh! so tedious in his courtesy. His fine spreading trees were doubly pleasant after the devastation below, where the family had said to themselves, "If the greybeard won't use his own trees, he shall have no temptation to cut ours." *Extract from a Letter of Mr. Floyer, in "Atheneum," June 27, 1891.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

APRICOTS.—The splendid rains have done a great deal of good to all fruit trees, but yet where the soil is light and shallow, and the Apricot trees are bearing heavy crops, artificial waterings at the root will be needed. Before affording water, loosen the soil slightly with a fork, and lay on a mulch of manure. Let the crop of fruit on old trees be rather light than heavy; and lay in plenty of young wood, and, where practicable, the main branches should be covered with young foliage, so as to defend them against strong sunshine. In shortening back shoots to form fruit spurs, leave four or five buds from the base; keep all the leaders of young trees neatly fastened to the walls, and watch for snails, slugs, woodlice, and other creatures which damage the fruits.

PEARS.—Summer pruning should now be proceeded with, taking in hand first those which are making the strongest growth, not divesting the trees entirely of the new growth at once, but going over them twice or even thrice, cutting back the shoots the first time to live buds. Now is a good time to note such trees as stand in need of lifting and root-pruning in the autumn.

CORDONS, PYRAMIDS, AND ESPALIERS should have the leading shoots trained in, but not tightly, or in contact with the training wires, or the nails if on walls. Crops of Pears are heavy this year, and a second thinning of the fruits will be needed; and heavy mulches, especially to Pears on the Quince stock which are surface rooters, and to those which may be making scanty growth—failing a mulch, sprinkle the soil over the roots with Thomson's Vine Manure, Clay's, or good guano.

Cordon Apples planted at the side of walks and other conspicuous places, should consist of large and showy varieties. Do not let them carry very many fruits, or maggoty ones—as soon as observed these last should be removed and burned. Where the "maggot" abounds, hand-pick carefully, this being the surest way of destroying it; mulch and afford the cordons plenty of water in dry weather. Pinch the side shoots once or twice, but not closely, or the lower buds, which should be dormant, will start. [Mr. Rivers, a good cultivator, cuts back the shoots to 6 inches in July, and shortens back still further in winter. Ed.] When the leading shoots of double cordons do not grow evenly, break the strongest

leader half in two and leave the end hanging; this will in a great measure check the flow of sap in that direction, and by only being half broken the back buds are not so liable to burst, while the weak ones will be strengthened. It is a method which may be practised with young espalier and many other trained trees.

PLUMS.—Most of these are cropping heavily, and where practicable the fruit should be reduced in numbers. Large-fruited Plums should certainly be attended to in this respect. Water and mulch as recommended for Pears. The trees against walls of the Greengage, Coe's Golden Drop, Reine Claude de Bavay, Ickworth, Imperatrice, &c., should have plenty of strong shoots laid in, as it is on these when two or three years old that the best and finest fruits come. Have the foliage cleaned before the fruit gets much advanced.

CURRENTS on walls should have a free thinning out of the breast wood, and the shoots required for filling up bare spaces secured, remembering that young wood gives the finest fruit; and if a dressing of manure can be applied it will be of much benefit. Gooseberries on trellises and walls should be similarly attended to. Fruits for bottling and jelly-making may now be gathered. Place litter underneath the bushes so as to keep the berries clean. *H. Markham, Mereworth Castle, Maidstone.*

THE FLOWER GARDEN.

SUMMER BEDDERS.—**CARPET-BEDS.**—The effects of the recent much-needed rains are nowhere more marked than in the growth made by all sorts of bedding plants. So, notwithstanding the backwardness of the season up to a recent date, the beds promise to be as well furnished by the middle or end of the month of July as they have been at that date in previous years. Peg down the growths, and otherwise pinch and train into shape the various carpeting plants. Gather the flowers off Sedums, Echeverias, Saxifrages, Golden Chickweed (*Stellaria graminea aurea*), and plants of similar growth, pressing down the centre of these plants with the fingers, and thus induce them to cover their allotted space quickly. Cut off with the shears any growths that spoil the dividing lines of plants, as well as from the plants which fill out the divisions themselves. *Cerastium arvense*, *Herniaria glabra*, *Stellaria*, and *Antennaria tomentosa* are the plants most quickly trimmed into shape.

Carpet-beds from this date to the middle or end of September should, however, be gone over at least twice in about three weeks, to keep the patterns quite distinct, and the whole in good order. When well-kept—as they should be—these mosaic patterns, formed exclusively of dwarf foliage plants of bright, soft, and pleasing colours, contrast most effectively with the masses of scarlet, pink, white, yellow, blue, &c., surrounding them. Continue to pick off all flowers from *Pelargoniums*, *Calceolarias*, *Begonias*, *Verbenas*, *Petunias*, *Heliotropes*, *Lobelias*, and such-like, until the ground space is pretty well furnished, the object from the beginning being to cover the beds and borders with a mass of foliage and flowers in the shortest space of time. In the absence of rain, water in the afternoon any plants which are not growing quite so fast as could be desired, at least three times a week until the allotted space is covered.

CUTTING GRASS-VERGES AND EDGINGS.—It is necessary to cut the grass-verges alongside walks, as well as next the beds and borders, once a year with the turfing-iron. Where this operation has been deferred till a more convenient time, it should be done forthwith, afterwards cutting the fringe of grass growing over this line once a fortnight, which will be about every other time the verges and lawns are machined. Should there be any Plantains in the lawn, take means to remove them at once, as they are very undesirable objects in what might otherwise be termed a well-kept lawn. The quickest, neatest, and most effective means of ridding a lawn of Plantains and Dandelions that I am acquainted with, is to half-fill a blacking-jar with Smith's "Weed-killer," put the jar in a small shallow box, with a cross-handle for carrying it about, and, armed with an iron skewer about 9 inches long, dip the skewer into the weed-killer, and then pierce the centre of the weed, dipping the skewer into the liquid each time a plant is pierced. The death of the plant is certain. This "weed-killer," being a deadly poison, and sure to kill any grass or plant it comes in contact with, great care is necessary in applying

it either in the manner indicated, or for eradicating weeds on walks; hence the necessity for placing the bottle securely in a box to prevent any mishap occurring. *H. W. Ward, Longford Castle, Salisbury.*

FRUITS UNDER GLASS.

LATE VINES.—The bunches of Grapes on late Vines being now thinned, and those for longer keeping more severely than early winter Grapes, the bunches should be finally looked over, and berries removed where they are at all crowded, so as to allow the air free passage through the bunches. Scalding has, I fear, been troublesome this season, owing to the changeableness of the weather, so that it will be advisable to air vineries freely, and keep a gentle warmth in the hotwater pipes, a small amount of air being afforded at night so as to allow of the escape of moisture, before the sun reaches the house in the morning. A buoyant atmosphere just before the colouring period is a good preventive of scalding in the berries. The outside borders will have had sufficient rain to moisten them thoroughly, but borders which have been a long time made will be better for a good dressing of Thomson's Vine Manure. Inside borders may be afforded the same, *Le Fruitier*, or farmyard liquid. Guano and fish manure answer well enough if applied after the berries are thinned. Syringing overhead must be done carefully, and if the water be impregnated with lime none should be allowed to touch the Grapes. Badly-rooted Vines, or those whose borders have been increased, should be allowed to extend their terminals, and the lateral points should not be cut back so much as is usual; and in the case of thin-skinned varieties which are apt to crack if greater freedom of growth be not allowed, this malady will be in great measure averted, especially if the border is not allowed to get excessively moist. Leaf mildew, sometimes troublesome about this date in houses that are badly ventilated, may be got rid of by sponging the leaves with warm water and flowers-of-sulphur, and maintaining a drier atmosphere, with more ventilation, and by keeping some slight warmth in the heating apparatus. Remember that precaution is better than cure. Red spider gives trouble when atmospheric moisture is reduced in amount, and the best way to get rid of it is by sponging the leaves if fruit is on the Vines, and by a thorough syringing with sulphur and warm water in houses where the fruit is cleared off. Shallow borders containing young Vines must be kept moist, or growth will be checked, and some kind of manure employed until such time as the Vines have made a sturdy growth. Allow them all the sunlight possible, if it be intended to force them early next season. Vines in pots for the same purpose must be liberally treated, all laterals stopped at the first joint, and the points also, when the Vine has reached a height of 6 to 7 feet. Shift young canes struck from eyes this season, and keep them growing with a high temperature in a moist house. Such Vines when well done are capital canes for planting, or for fruiting after being cut back. *G. Wythes, Syon House, Brentford.*

PLANTS UNDER GLASS.

THE STOVE.—Plants of *Clerodendron Balfourianum*, which have gone out of flower, should be pruned in and placed in a genial growing temperature where there is sufficient head-room in the house or pit for the young shoots to run up to full length, without hindrance. When about 2 inches in length of new growth have been made, the plants should be turned out of their pots, and one-half of the old soil be shaken off, any long straggling roots being then cut back somewhat. Re-pot the plants in three-fourths rich fibrous loam, one-fourth of decayed manure, and sand in proportion. The potting should be done moderately firm. Place the plants where the shoots can be trained on pieces of twine 10 to 20 feet long, secured to the roof of the stove. Syringe the plants freely morning and afternoon whilst growth continues. Examples of this species of *Clerodendron*, which may be planted out in beds, and grown as roof or pillar-climbers, should also be cut down to about 10 feet from the base when they have finished flowering, and unless this be done annually, they will become crowded with useless flowerless shoots. Some of the surface-soil should be removed, and replaced with fresh materials, to which a liberal quantity of manure should be added.

POT ROSES.—Tea Roses which have been forced will, owing to the want of room, in many cases, have to stand outside during the summer, and will require to be gradually hardened off, if no harm

is to happen to them. The young leaves are very tender, by reason of the plants having been forced; and these are very sensitive to bright sunshine and drying winds. When placed outside, look over them every few days, and if mildew be noticed, forthwith dust over the affected parts with flowers-of-sulphur, or wash with some mildew antidote. Red-spider or the Rose-aphis should be kept at bay by tobacco-water, and the free use of clear water and the syringe.

The present is a good time to repot Roses which require larger pots or tubs; and, as a rule, the strong-growing sorts, if they are healthy, should have larger pots than weakly ones, but none should be over-potted—rather err on the side of small pots, &c. A strong loam, made rich with about one-fifth of decayed manure, with coarse sharp sand in proportion, makes a suitable compost for pot Roses. Make the drainage good, and put some rough fibry portions of the loam over the crocks, so as to keep out the soil. Pot firmly, using a potting stick. Stand the plants where they will have full sunshine, plunging the pots, if possible, in fine coal-ashes to the rims, which will keep the roots at a more equable temperature. In bright weather these pot Roses will be benefited by frequent overhead syringings with clear water.

ALLAMANDAS.—Large specimen *Allamandas* which were partially shaken out and repotted in fresh soil early in the year, will now require some kind of manurial stimulant, otherwise the bloom will become scanty in quantity, and the individual flowers small. Young stock raised from cuttings in the spring may now be potted into 10-inch pots. With sufficient heat, these plants will continue to bloom till late in the season, and form a succession to the older specimens, which were early started. *R. Milner, Penrice Castle, Swansea.*

THE KITCHEN GARDEN.

MUSHROOM BEDS.—Beds which were spawned four or five weeks ago, should now have the covering of litter carefully removed, and be supplied with water in quantity according to the dryness of the soil. Shake out the litter, and replace it lightly, and, if circumstances suggest it, thinner than before. Collect materials for making out-of-doors succession beds, to come into bearing in September and later. Spread them out in the sun, but cover up from rain. Prepared in this way, the dung is better than when its rankest heat and ammonia are got rid of by fermentation. Then see that the droppings are from corn-fed horses only.

ASPARAGUS.—Cutting should soon cease, and the plants be encouraged to make strong growth. Keep the beds weeded; afford frequently light dressings of agricultural salt when the soil is light; also during dry weather water heavily, occasionally using liquid manure. On heavy soil, salt, or strong manure should not be afforded, but frequent dressings of an artificial manure. Secure the stronger shoots to stakes, to prevent their being broken, and pull up all chance seedling Asparagus which would crowd the beds if they were left. To prevent the soil from cracking, mulch with leaf-mould, or the like. Keep the rows of Asparagus planted in the spring quite clear of weeds, and those which were sown at that season carefully hand-weeded, first thinning them out to 4 or 5 inches apart.

MISCELLANEOUS MEMORANDA.—Clear off any remains of crops, dig and prepare the ground for Turnips, Cabbage, Lettuce, Endive, &c. Brussels Sprouts, Broccoli, Kales, and Savoys may be planted out on land that has been under Peas or Potatoes.

To prolong the bearing of large-podded Peas, and have them of good flavour, closely pick all pods as soon as large enough for use, and water copiously with liquid manure and clear water. To provide for a full supply of large crisp vegetables, plentiful watering and occasionally a good soaking with farmyard or stable drainings will be of great use, the latter being carefully put on the soil between the rows—never letting it come in contact with the leaves. Mulching will be of use on hot shallow soils, employing grass-cuttings if nothing better may be obtained.

Peas and Cauliflowers are the first to suffer from drought, and need therefore early attention. Waterings should be by preference, always done in the evening, even if the men have to be paid overtime for doing it. Let all waterings be thorough, so that the moisture goes lower than the roots, or else they will come to the surface in search of it, and suffer from drought at times. By watering the crops abundantly at one time there is a real saving of labour, as the work need not be repeated

in less time than seven days, even if no rain should fall in the interval. Onions, Saladings, Cauliflowers, Peas, and French Beans are much improved by having the soil kept in a moist state in warm weather. Always afford water before the plants show signs of exhaustion.

If the Onion maggot has become troublesome, make a dressing with 2 lb. of soft-soap dissolved in 100 gallons of water, with $\frac{1}{2}$ bushel of soot tied in a bag and allowed to soak in the same for twelve hours. Apply this to the bed with a rose water-can; it will keep the maggot in check. Mulch the beds, well water them in dry weather, and occasionally dust them over with soot. *C. J. Waite, Glenhurst, Esher.*

THE ORCHID HOUSES.

VANDAS.—The species *V. suavis* and tricolor should now have a shading of thick whitening placed on the glass, which will keep the plants cool also, and temper the strong light, which would soon take the colour out of the foliage, and with the colour the health of the plant also. Plants should be encouraged to start into growth by affording warmth and moisture. *Vanda Amesiana* grows best in a house having a cooler temperature than suits *suavis* or tricolor. The lovely *V. Kimballiana* is greatly benefited by overhead waterings during growth, and it should be stood where the circulation of air is sufficient to dry them up at least once a day, and if they should dry up very quickly, I find that three or four syringings afforded during the day have a good effect on the health of the plant.

CATLEYA HOUSE.—The work in this section will, for the present, be of a general character. A few plants, it is true, consisting principally of *C. gigas* have to be repotted, which is best performed directly the flowers have faded. Late flowering *C. Mendeli* and *C. Mossii* may also be repotted, if requiring it, and as late as the middle of the present month; later than which it is inadvisable to repot large *Cattleyas*. For a number of years I have been in the habit of repotting *Cattleyas* in the summer, the reason for doing which is very simple—in the new compost the young roots freely extend to the sides of the pot, it is then that the new pseudobulbs grow apart. The potting compost may consist of three parts brown fibry peat, one of sphagnum moss, and one of clean crocks, the latter being far to be preferred to charcoal, which, after being covered with the compost for some time, gets sodden, and the roots, although they do at first adhere to it, in a very short time rot away—and this disaster does not occur with crocks. In speaking of this circumstance to some gardening friends, I have had the sweetening properties of charcoal pointed out to me, and I admit that it does this. I have during the last fifteen years had the opportunity of turning out some plants from most of the collections of Orchids that have been sold during that period, and after studying the matter in a practical manner, I am certain that the use of charcoal in Orchid growing is a mistake. Care in the shading of the plants is now very necessary, and it is a matter that should not be lightly passed over.

I have in a previous calendar pointed out that position in a house is a point of much importance, and ought to be studied. *C. Percivaliana* should be stood in a position where it commands full sunshine, and can be syringed overhead at least twice a day. It is a good plan before fully exposing the plants, to place a sheet of tissue-paper over the foliage, and watch during the warmest part of the day, when it will be seen if any bubbles in the glass have escaped notice. By doing this, the burning of the foliage may be averted. *C. lobata*—or, as it is more generally known now, *C. Boothiana*—is another plant which is the better for a certain amount of sunlight whilst growing. It is a plant which should have *C. gigas* treatment to flower it successfully, but it is undoubtedly a little bit more difficult; and no water should be afforded the plants after the young pseudobulb breaks away until it can be seen if a sheath is coming in the young growth or not. As soon as this can be determined, water may be applied in either case, and the plant exposed to full sunshine, overhead syringing being resorted to, to avert the shrivelling of the pseudobulbs owing to the dry state of the potting compost. *C. Gaskelliana* will now be coming into flower, at least the earlier-flowering plants. It is a grand introduction, flowering, as it does, from midsummer to December. *C. Warocqueana* is a fine addition to autumn-flowering *Cattleyas*. The temperatures of all the houses may remain as given in my last calendar. *A. G. Catt, Parkfield, Hallou, Worcester.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

SATURDAY, JULY 11—Royal Botanic Society. General.

SHOWS.

TUESDAY, JULY 7
Royal Horticultural Society's Exhibition and Conference on Hardy Summer Perennials and Small Fruits, Chiswick Gardens (two days).
Gloucester.

WEDNESDAY, JULY 8
Royal Botanic Society's Evening Fête, 8—12 P.M.
Portsmouth (three days).
Ealing.
Sutton.
Parsloey.
Hitchin.
York Ancient Florists.

THURSDAY, JULY 9
Bath.
Chichester.
Woodbridge.

SATURDAY, JULY 11
Galashiels.
New Brighton.

SALES.

TUESDAY, JULY 7
Flowering Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.2.

The Potato Disease.

We are now close upon the time when we may expect a visitation from this pest. Let us hope that the atmospheric conditions may be such that the fungus may develop itself only feebly, and not induce much injury to our crops. We cannot, however, rely on any such immunity, and it therefore behoves us to be ready, not only to act on the first appearance of the disease, but at once to adopt measures of precaution. It must be remembered that there is now no excuse for apathy and quiescence. The nature of the plague is known, if not in all its details, at least to such an extent that we know how to combat it with rational means, and with a large amount of certainty as to the issue. High moulding, as recommended by Mr. JENSEN, is productive of excellent results, and will, as the Chiswick experiments testify, secure a crop even when the haulm is a mass of putrescence. How much larger that crop might be if the moulding were applied earlier, we leave our readers to judge. If farmers and large growers do not think it worth their while to adopt this simple expedient, at least, there can be no question that the small grower and the cottager will find it worth his while to secure a partial crop when otherwise he would have none.

There is another way of looking at the matter. Has anyone the right, now that the means of control are within his power, to fold his hands and allow his neighbour's crops to be ruined

because he is too inert or too sceptical to adopt these means? Still more, has anyone the right to continue to directly propagate the disease by neglect and carelessness, as 'tis still, we are sorry to say, all but universal among growers? Surely the conscience of cultivators should preserve them in the future from what was formerly unavoidable, but which now is, to our thinking, not less than criminal.

Another method of combating the disease, is that by means of salts of copper. We have seen this tried on a small scale with the Tomato fungus; and our colleague, M. PRILLIEUX, a highly competent authority, has tried it on a large scale with the Potatoes in France. The proportions in which it should be used are:—3 lb. of sulphate of copper, 1 lb. of quicklime, 20 gals. of water. Dissolve the sulphate in water in a wooden tub. Slake the lime in another tub, and mix it with the copper solution. Keep the mixture stirred, and apply the whole with a spray pump, such as was figured in our issue, May 30, 1891. On a large scale the proportions to be used are:—Sulphate of copper, 20 lb.; lime, 10 lb.; water, 100 gals. Another receipt which some French experimenters prefer is:—Copper sulphate, 4 lb., dissolved in 3 gals. of water; add 6 lb. of carbonate of soda to the solution, and $\frac{1}{2}$ lb. of treacle. Stir the mixture, allow it to remain for twelve hours, and then dilute with 22 gals. of water.

The effect of the lime in the one case and of the soda in the other, is to form either an oxide or a carbonate of copper, which is deposited by the spray on the foliage, and effects the destruction of the fungus. In an article by Mr. WHITEHEAD in the present number of the *Journal of the Royal Agricultural Society*, we find the copper solution recommended to be employed at the rate of 140 to 150 gallons per acre at the end of June, and again four weeks later. In any case it should be applied immediately a spot of the disease is seen.

The same substances may be employed, with or without an admixture of sulphur, in the form of a dry powder dusted on to the foliage with a distributor, in the same way that sulphur is used for the Oidium of the Vine, and as recommended by Mr. TAIT, of Oporto. We have no experience of the use of the powder on the Potato fungus, but if it be very fine and evenly distributed, there can, we think, be no doubt as to the result. For the Lily-fungus this would be very suitable. Owing to the mode of growth, and the life-habits of the fungus, it must not be supposed that any of these remedies will completely destroy the fungus. All that is claimed is, that it can be so thoroughly kept in check that a satisfactory crop can be secured where otherwise there would be none, or next to none.

It is very difficult to induce people, even in their own interests, to make trial of remedies of this kind. For our own parts, we have continually urged the matter upon our readers for years past, and we rejoice to find the Royal Agricultural Society and the Fruit Growers' Association at last pursuing the same course.

Mr. WHITEHEAD'S article contains within a small compass the results of the experiments of RILEY and others, and should be reprinted and circulated broadcast without a day's delay.

CYPRIPEDIUM ROTHSCHILDANUM.—This is one of the most stately of recently-introduced Cypripediums, and its free habit of growth, and the certainty with which it may be counted on to produce its beautiful flowers, has caused it to steadily increase in favour, as the plants imported by

Messrs. F. SANLER & Co. into this country have increased its strength, and thus revealed the merits of this quaint and original species. In colour it is as quaint and attractive as in shape, the lighter colour being yellowish-white to pale yellow, and the darker chocolate colour tinged in parts with crimson. *C. Rothschildianum* grows very freely in a warm moist house in which the other hot-house species, such as *C. Lowii*, *C. Stoneii*, *C. Sanderianum*, &c., are kept. The specimen illustrated (fig. 3) was exhibited by NORMAN C. COOKSON, Esq., Wylam-on-Tyne, at the Royal Horticultural Society in May last.

LINNEAN SOCIETY.—At the meeting held on June 18, Professor STEWART, President, in the chair, Messrs. HERBERT JONES and JOHN BIDGOOD were admitted Fellows of the Society, and Mr. C. W. SLATER was elected. Mr. W. H. BEEBY exhibited specimens of *Hieracium protractum* and other plants collected in Shetland. Mr. STUART SAMUEL exhibited a dwarf specimen of *Acer palmatum*, and made some remarks on the dwarf trees artificially produced by the Japanese. Mr. R. V. SHERRING showed some cases of dried Bananas, and described a new method of preservation adopted in Jamaica to save waste of small parcels of fruit which would be otherwise unsaleable. Mr. A. W. BENNETT exhibited and made remarks upon a specimen of *Selaginella lepidophylla* which was found to possess remarkable vitality, and upon proper treatment to resume its normal appearance after having been gathered some months. Dr R. A. PNIOR exhibited samples of the spiked Star of Bethlehem, *Ornithogalum pyrenaicum*, and stated that although described in British floras as a rare plant, it is so abundant on the hill pastures around Bath that it is brought to the market there in large quantities under the name of French Asparagus, and sold for a penny a bunch. Mr. R. A. ROLFE showed two hybrid *Odontoglossums* with the parent plants, namely *O. Wilckeanum* (produced from *O. crispum* and *O. luteo-purpureum*), and *O. excellens* (produced from *O. Pescatorei* and *O. triumphans*). These had first appeared as natural hybrids out of imported plants, and the parentage was subsequently ascertained under cultivation. A paper was then read by Mr. SPENCER MOORE on the true nature of Callus, and in continuation of former remarks on the same subject (*Ann. Soc. Journ. Bot.*, vol. xxvii., No. 187, 188). He showed that the outer sieve-plates of the Fig are obliterated by a substance giving all the dye reactions of callus, which does not peptonise, and will not yield proteid reactions. Many of the inner sieve-plates he found to be stopped up with a proteid callus resembling in every way the substance of ballus stoppers, and the proteid callus of the Vegetable Marrow. It appeared that true callus would dissolve in a solution of gum arabic, but whether by agency of a ferment or of an acid, he had not yet determined. A second paper by Mr. SPENCER MOORE dealt with the alleged existence of protein in the walls of vegetable cells, and the microscopical detection of glucosides therein.

THE GARDENERS' ORPHAN FUND.—The monthly meeting of the committee took place at the Hotel Windsor on the 26th ult., WILLIAM MARSHALL, Esq., in the chair. The Hon. Secretary reported that the balance at the bank was £501 16s. 2d.; also that he had received several of the collecting cards sent out for the national collection, and, judging from the average amounts, there was every prospect that the collection would result in a considerable addition to the funds. The usual quarterly allowance to the thirty-nine children at present on the Fund, amounting to £126 15s., was ordered to be paid. The details of the Rose Fair and Floral Fête at the Crystal Palace on July 15 were arranged; many promises of support had been received of Roses and other flowers for sale, and groups of plants to add to the attractions of the fête. The committee are in treaty with the railway companies, and there is every probability the success the committee so much desire will attend their efforts.

THE EYOT AT KEW.—It rests with the public whether one of the most beautiful spots in the whole course of the Thames shall be preserved or not. If it were a case of destruction merely, the loss would not be so serious as it will be under existing circumstances. It is not only the annihilation of the most beautiful scene of its kind near London, but it is the exposure in all its hideous repulsiveness of the river bank at Brentford. We are glad to see our contemporary, the *Richmond Times*, taking the matter up; but this is not a merely local question, it concerns the metropolis at large, and all those who delight in the river and its amenities. We should gladly hear of a vigorous protest on the

extract from the *Richmond and Twickenham Times* shows that the matter is attracting local attention, but, as we have said, the subject is one which affects the whole metropolis, and the visitors to it:—

"House of Commons.
"To King, *Richmond and Twickenham Times*, Richmond.—In reply to my question this afternoon, the Government are perfectly willing to confer with the local authorities with the object of saving trees on Brentford Eyot.
JAMES BIGWOOD."

From a report subsequently received, it appears that Mr. Bigwood asked the First Commissioner of Works whether the Department were now asking for tenders for the purchase of standing timber on

MORREN'S *Correspondance Botanique*, but in a smaller and less expensive form. In the interests of science, botanists of all countries are requested to inform the editor of all changes and corrections. We would suggest to him that he should in future years follow Professor MORREN'S plan of sending the proof-sheets to some competent correspondent in each country for the purpose of revision. Had this been done in the case of Great Britain, many errors would have been avoided, thus:—Mr. DYER'S address is not Kew Garden Road, Mr. HEMSLEY no longer lives at Cambridge Road, Chiswick. The Royal Horticultural Society has no garden at South Kensington. Mr. BOULGER'S address

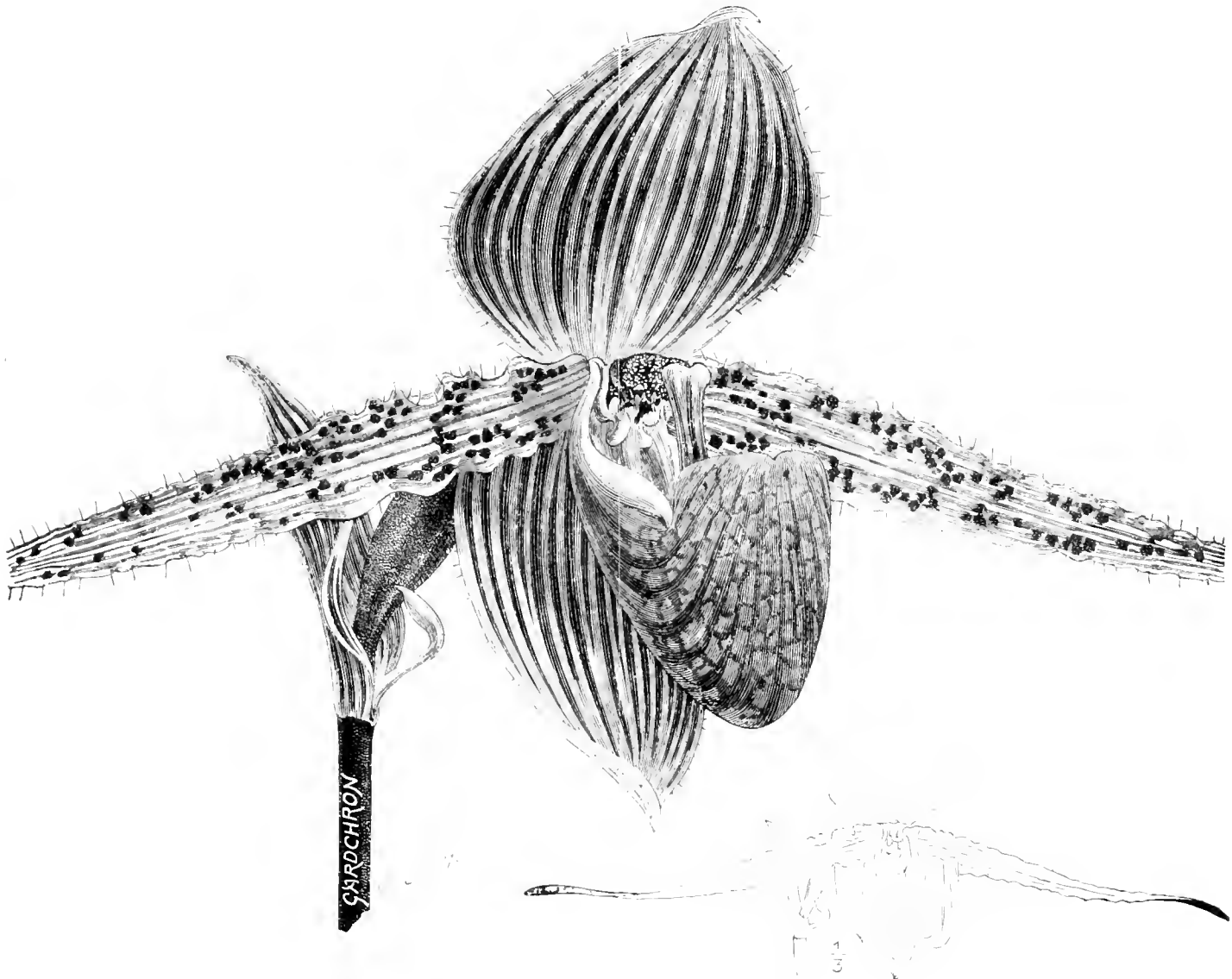


FIG. 3.—CYPRIPEDIUM ROTHSCHILDIANUM. (SEE P. 14.)

part of the press, of a deputation to the Office of Woods and Forests, of "a question in the House," or of any means which may be considered most effectual for the preservation of this little islet. It is, by the way, far more beautiful than that in the lake of Geneva by Chillon, of which BYRON sang. If the sentiment of romance is lacking in the Brentford "Ait," that attaching to its beauty should be strong enough to prevent the threatened destruction. What is wanted is some protection by "camp-shedding" or otherwise, so as to prevent the washing away of the banks by the steam-tugs and launches. Were the "eyot" placed under the direction of the authorities at Kew, it might with advantage be turned to account as a salicetum. The following

Brentford Eyot, and whether he was aware that people in the neighbourhood, who were anxious to preserve these trees upon that island, were willing to pay all expenses towards the safe maintenance of them in their present position. Mr. JACKSON was not aware that tenders were out for the purchase of the timber. The Commissioners of Woods would be glad to hear from the persons referred to in the question, and if they could meet the wishes of the local authorities they would do so.

BOTANISCHES ADRESSBUCH.—Mr. W. ENGELMANN, of Leipzig (Königstrasse, n. 10) has published a list of living botanists, botanic gardens, societies, and journals, on the plan of the late Professor

is not at Landbroke Grove. Mr. JOHN GINSON is not "gardener in the Hyde Park," Mr. "A. MACYNTRE" is not the Superintendent of the Victoria Park, nor Mr. ROGER of that of "Bettersea." Three nursery-men are mentioned—a circumstance which makes us wonder why more were not included. The Royal Microscopical Society is no longer housed in King's College. "Dr. MAXWELL F. MASTERS" is not the Secretary of the Royal Horticultural Society; nor is "Dr. F. MAXWELL MASTERS" the name of the Editor of this journal. The *Annals of Natural History* is not edited by Mr. W. S. DALLAS, and the name of Mr. T. A. BRIGGS should be deleted from the lists of living botanists. The term "florist" is moreover used in this country in a very different sense from that in which

it is employed by Continental botanists. Although we have pointed out these errors, and might have mentioned many others, we by no means do so with any wish to disparage what is really a most useful publication, and one which may be made still more so. Had the editor consulted the *Kew Bulletin*, or the revised list published in our number for January 17, 1891, he might have avoided several of the errors we have noted.

KOLA NUT.—Generally speaking, the virtues attributed to newly-introduced drugs or articles of food require to be as severely discounted as if they were patent medicines. This precaution is hardly needed in the case of the Kola nut, provided the nuts are in a fresh wholesome condition. The power of the nut in enabling the partaker to undergo prolonged fatigue, whether of body or mind, and protracted abstinence from food, is established beyond question. The military authorities in India are likely to adopt it in cases of military expeditions, where food is scarce and difficult of carriage. We allude to the subject on the present occasion in order to suggest that a trial be made of it in the hay-field and among harvesters. In the form of chocolate it is very serviceable, as we can testify in the obviating and lessening the fatigue of prolonged mental exertion; but in the field "Kolatina" mixed with water or milk would, of course, be preferable. Kolatina contains 40 per cent. of Kola. Messrs. THOMAS CHRISTY & Co., of 25, Lime Street, are willing to supply quantities sufficient for experimental purposes, as there is no fear of ill results, but a strong probability of its forming an excellent substitute for beer. We have spoken of Kola as if it were new—this is hardly correct—the tree and its virtues have long been known to botanists, but it takes a long time for the general public to become acquainted with such matters.

GARDENERS' ORPHAN FUND.—We earnestly call the attention of our readers to the Rose Fair and Floral Fête to be held at the Crystal Palace on Wednesday, July 15, for the benefit of the Gardeners' Orphan Fund. The admission to the Palace is one shilling only. Among the items of the programme, in addition to the display and sale of Roses, are:—Cricket match: the Seedsmen v. the Gardeners of England, two organ recitals, two concerts by the renowned Crystal Palace orchestra, promenade music by the Crystal Palace military band, grand fountain display, two performances by the trained wild animals, monster balloon ascent, illuminated garden fête and grand open-air ballet, and other popular attractions all day. Tickets may be had at most of the florists, from the Secretary, Mr. A. F. BARRON, Royal Horticultural Society's Garden, Chiswick; or from the Publisher of this Journal, at this office. Those applying for tickets by letter should take care to pay postage, and to specify by which route they wish to travel. The high-level route is that by the London, Chatham, and Dover lines; the low-level route is that by the Brighton Company's service.

MR. HIBBERD'S LIBRARY.—The sale, by Messrs. SOHBEY, WILKINSON & HODGE, took place on the 29th and 30th ult., of the library of the late Mr. SHERLEY HIBBERD. A large number of Archaeological books, and books of travel, were included among works relating to botany and horticulture. Among the prices obtained for books in the latter category we may note the following:—Sweet's "Cistinea," £1 10s.; Sweet's "Geraniaceae," 5 vols., £2 18s.; Lindley's "Pomologia Britannica," £1 14s.; a copy of the first edition of "In Memoriam," £1 14s.; a complete set of the "Botanical Register," in 34 volumes, fetched £36; Seemann's "Flora Vitiensis," £2 6s.; "The Herefordshire Pomona," £5 7s. 6d.; Elwes' "Monograph of Lilies," £7 10s.; Wallich's "Plantae Asiaticae Rariores," 3 vols., £14; Ravenscroft's "Pinetum Britannicum," 3 vols., £9 10s.; Turner's "Herbal" (1568), £19 10s.; Gerard's "Herbal," £1 12s. (incomplete); Paxton's "Magazine of Botany," 16 vols., £11 10s.; a com-

plete set of the "Botanical Magazine," £99; Masters' "Vegetable Teratology" and two other books, 26s.; Loddiges' "Botanical Cabinet," 20 vols., £7; "Flore des Serres" (Van Houtte), 23 vols., £18 10s.; Parkinson's "Paradisus" (imperfect), £6 12s. 6d.; "Gardeners' Chronicle" (complete to 1889), £15 10s.; "Gardeners' Magazine," 40 vols., £1 7s.; "The Garden" (nearly complete), £3 11s.; "Journal of Horticulture," 50 vols., 16s. The amount realised was, we believe, a little over £800.

M. F. HÉRINCO.—We learn from the *Revue Horticole*, of the death of this gentleman, at the age of seventy-one. M. HÉRINCO was one of the conservators of the botanical collections in the museum at the Jardin des Plantes, at Paris. He was known to horticulturists as the editor of the *Horticulteur Français*, a publication now defunct, but in its time remarkable to us Englishmen, at any rate, for the raciness and vigour of its language. M. HÉRINCO contributed to the *Manuel des Plantes*, a work corresponding to LONDON'S *Encyclopædia of Plants*, and he rendered great assistance in the preparation of the late M. LAVALLÉE'S fine work, entitled, *Arboretum Segrezianum*.

LILACS.—The *Revue Horticole* contains the commencement of a monograph on the species of *Syringa*, from the highly competent pen of M. FRANCHET. With regard to the native country of the common Lilac, which is still a matter of dispute, M. ANDRÉ states that he has lately seen the plant growing wild in abundance on the mountains separating Servia from Bulgaria. The tree was growing in the company of *Staphylea pinnata*, *Coronilla Emerus*, and other spring-flowering shrubs, among which were also mixed the pretty flowers of *Limaria annua* and *Adonis vernalis*.

EALING GARDENERS' ASSOCIATION.—The third annual trip of the members of this body took place on Monday last, June 29; and Dropmore was selected as the place of resort, by the kind permission of Lady LOUISE FONTESCUE. Dropmore is a most enjoyable place, particularly at this season of the year. A very pleasant day was spent, the party much appreciating the courtesy and attention paid to them by the late PHILIP FROST'S successor, Mr. C. HERRIN.

PINKS, ETC.—These flowers make a good show in the Royal Horticultural Society's gardens at Chiswick at the present time. Mrs. SINKINS, white, maintains its character as a good grower; Her Majesty, sent out a year or two ago by HOOPER, is in capital form, and Modesty (TURNER), is a beautiful white blotched with light purple in the centre, very free flowerer. Fuchsia Dunrobin Bedder (MELVILLE), certificated last year, is doing well planted out in a bed or two. It is a free-flowering dwarf form of the old F. Riccartoni.

DEATH FROM DRINKING WEED-KILLER.—Another case of fatal poisoning by a weed-killer occurred at Warnford Park, Hampshire, recently, W. NORRIS, a carpenter employed on the estate, having drunk a quantity of the liquid inadvertently. Too much care cannot be taken with these dangerous compounds; but we fear that until some one is severely punished for neglecting to keep them out of the reach of persons ignorant of their dangerous nature, these "poisonings by misadventure" will be constantly occurring.

FLOWERS IN SEASON.—We have received some magnificent spikes of Delphiniums, Herbaceous Peonies, and Pyrethrums, from those excellent cultivators of hardy perennial flowers, Messrs. KELWAY & SONS, Langport, Somersetshire. Among the first-named is a bright blue-coloured flower—Britannia; a purple and blue—David; a corulean blue—Bester; and one nearly similar in colour, but better, named Ida. A fine double crimson-coloured Peony is seen in Prince George; a bold single-flowered pink variety in Calliphone; and an excellent blush, of full form, in Princess of Wales. Miss Salway is a pure double white. Gaillardias, with fluted and

with plain florets, were gorgeous in orange, yellow, red, and crimson.

THE BULB CROP AT HAARLEM.—We learn from one of our correspondents that the weather here has lately been very sunny and warm, so that the growers are now very busy in harvesting the early Tulips, which are, in spite of the past long severe winter, and of the cold spring, very good, and the flowering qualities being very promising. The Hyacinth fields look better than for the last two years.

FRUIT CULTURE.—The Fruiterers' Company (of which Sir JAMES WHITEHEAD is Master) has obtained from the LORD MAYOR the use of the Egyptian Hall of the Mansion House for the purpose of holding a meeting on July 13, to consider what further steps shall be taken in the promotion of fruit culture in homesteads and cottage gardens. Among those who have already expressed themselves interested in the movement, and have contributed towards the fund for carrying out its objects, are the Corporation of London, the Duke of Westminster, the Duchess of Grafton, the Earl of Dartmouth, Lord Wolverton, Lord Crewe, Lord Savile, Lord Hothfield, the Baroness Burdett-Coutts, Mr. W. H. Smith, M.P.; and the Mercers', Drapers', Clothworkers', and Leathersellers' Companies. The Medals and Certificates awarded at the great exhibition of fruit in the Guildhall last year will be presented on the occasion, and the LORD MAYOR will preside.

GROWING ALPINES IN SPHAGNUM.—We have received various letters on this subject, and another article from M. CORREYON, which we shall publish in our next issue. The matter is one of great importance, as showing that these plants can be grown under conditions not heretofore thought possible.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We may again remind our readers that the Annual Festival is to take place on Wednesday, July 8, at the Hôtel Métropole, Northumberland Avenue, at half-past 6 o'clock. The Right Hon. JOSEPH CHAMBERLAIN, M.P., will take the chair, and he is so good an horticulturist that we trust a large company will be present to meet him, and to increase the labours of the Treasurer and of the new Secretary.

ROSE SHOWS TO COME.—Mr. E. MAWLEY, of Rosebank, Berkhamsted, Herts, wishes us to publish the following list of Rose shows because of changes of date having been made in several shows since his last list was published. July 7 (Tuesday), Diss and Gloucester; 8 (Wednesday), Hitchin; 11 (Saturday), Eltham, New Brighton, and Reigate; 14 (Tuesday), Wolverhampton (a three days' show); 15 (Wednesday), Ealing; 16 (Thursday), Hereford (N.R.S.), Bedford, Helensburgh, and Trentham; 17 (Friday), Ulverstone; 21 (Tuesday), Christleton and Tibshelf; 23 (Thursday), Halifax and Worksop.

FLOWERS IN HYDE PARK.—The hardy Azaleas being over, Rhododendrons form the principal floral display at the present time; the bulk of them have been temporarily planted by Mr. A. Waterer on either side of Rotten Row, forming a very pleasing feature. Although the number of these beautiful shrubs is small, in comparison to what may be found in large gardens in the country, they are made the most of, and every year selected plants are brought. It is a pity that in a place like Hyde Park, where so many thousands of people see them, they are not permanently planted out to a larger extent, as nothing would add more to the beauty of park scenery than Rhododendrons in bloom in large masses. Among the best varieties in bloom was John Waterer, still one of the most showy, having very large trusses of bright scarlet flowers; Michael, with flowers of bright crimson-scarlet; Minnie, white, with chocolate spots; Marchioness of Lansdowne, a very distinct variety of pale rose, heavily spotted with black; Madame Carvalho, white; and Lady Eleanor Cathcart, pale rose, finely spotted; not forgetting the old R. fastuosum, which may not be such a striking variety as some of the others, yet it is about the best for planting around London, as it rarely fails to set a

good crop of flower-buds, even in the most unfavourable localities. The bedding-out is almost finished, much of it being quite established, and gives good promise of a fine display; especially fine are the beds of Roses, which are very thickly covered with buds. The fashions in this department seem to change very slowly even in such a fashionable place as Hyde Park, as the same style and arrangement may be observed that has been in use for a considerable number of years. The mode of plunging specimen plants of Fuchsias, Pelargoniums, Heliotropes, Plumbago capensis, &c., in the turf, is one to be admired, as it shows off the plants to the best advantage. The carpet-bedding has, if anything, a little too much colour in it produced by the red varieties of Alternanthera, but otherwise it is well done. Among the summer bedding the most pleasing effect is produced by planting good-sized plants of ivy-leaved Pelargoniums on a ground-work of blue Violas or other dwarf-growing plants, with the usual harmonious edgings.

BURTON FLOWER SHOW.—The first show of the season in connection with the Burton Horticultural Society took place on Wednesday, June 24, proving a success in every way. Owing to the season, the exhibits of fruit and vegetables were not so good as in former years, but the floral display was unusually good, the competition being very keen. In the open classes there were some very fine specimens sent by Mr. Cypher, Mr. Webb, and other well-known exhibitors. In the amateur classes the competition was also very good, and the exhibits were of good quality that would have been creditable at horticultural shows anywhere.

CYTISUS SCOPARIUS ANDREANUS.—At the Exhibition of the Midland Pansy Society, in Birmingham, Messrs. R. H. VERTEGANS & Co., exhibited several specimens profusely in flower, at 18 inches high, and in 48-pots, of the above plant. These were grafted plants imported from the Continent.

WOODBRIDGE HORTICULTURAL SOCIETY.—The above Society will hold their 40th Annual Show, July 9, at which £150 is offered in Prizes, and also National Rose Society's Medals. Next year a 25-guinea Silver Cup will be offered for Roses.

LORD RANDOLPH CHURCHILL'S BOTANY.—The noble lord, the hon. member for Paddington, is globe-trotting, and is contributing a series of papers on "My Trip to Mashonaland" to the *Daily Graphic*. The letters, if the first may be taken as an example, will prove interesting, but somewhat "shaky" from an horticultural point of view, as the following letter from Mr. W. ROBERTS, of 63, Chancery Lane, to the *Pall Mall Gazette* of a recent date shows:—"Lord RANDOLPH CHURCHILL expresses, in his first letter, from which you quote a paragraph in this evening's issue, that 'horticulturists and botanists may be interested with some of the trees and plants which I will particularise.' They will, but I am afraid that his lordship's information in this respect will not enhance their opinion of him. If he will tell us something which the most juvenile of gardeners' apprentices do not know, perhaps his labours will not be entirely thrown away. Lord RANDOLPH'S nomenclature resembles to a certain extent Mr. WELLES's knowledge of London—it is decidedly peculiar. By 'Combretum (*sic*) coccinium' (*sic*), which is 'novel' to the traveller, is, I suppose, intended *Poirvea coccinea*, a synonym of which is *Combretum coccineum*, a plant which is well known in English gardens, and has been in cultivation here for nearly three-quarters of a century. It has been figured (notably *Botanical Magazine*, tab. 2102) and described many times in the horticultural press. Lord RANDOLPH will be able to obtain plenty of plants in this country. 'Olea fragrans' looks well, but readers of *My Trip to Mashonaland* would understand what was meant much better if the simple name of 'Olive' were given. 'A splendid Schotia' and 'Bougainvillia' (which should be

Bougainvillea) do not convey any very definite idea to the horticulturist, for there are several species of each genus in cultivation. The same may be said of 'Francisia,' which, when spelt correctly, *Franciscea*, is a mere synonym of *Brunfelsia*, and in an intensified degree of *Grevillea* (which Lord RANDOLPH gives as 'Grevillia'), of which there are nearly thirty species to be found in cultivation. The description of *Strelitzia reginae* as 'apparently a sort of Banana' is very rich, but it is also not altogether incorrect. Good also would the information be respecting the perfume given off by Camphor leaves when crushed in the hand—only one would have supposed that the proverbial schoolboy knew of this quality. Clearly Lord RANDOLPH'S trip will be a failure as regards the horticultural part of it if he does not charter at once a professional botanist."

CHRYSANTHEMUMS IN SYDNEY.—A correspondent obliges us with a newspaper-report, two columns long, of a Chrysanthemum show in Sydney, in May. "Judging from the great interest which was taken in the show of last week, there can be no doubt about the popularity of the Chrysanthemum in Sydney and its suburbs. The progress made in the development of the flower has been very great during the last year or two, and no doubt this will continue, especially with regard to the cultivation of Chrysanthemum plants in pots, for one of our gardeners has proved beyond all question, and contrary to the expectations, that specimen plants in flower can be raised here equal to any in the world, and Mr. G. KERSLAKE, gr. to Mr. W. VON DER HEYDE, of Homebush, is to be congratulated on being the raiser of the finest specimens ever seen in this colony, or perhaps in any of the colonies. Next season we may safely expect to see more equally successfully grown plants from other growers, although everyone cannot expect similar results from their first endeavours, for there is a great deal to learn before success can be attained." [It is of little use, we fear, to repeat that our colonial friends would do much better service in developing their own resources than by imitating European fashions. ED.]

THE NATIONAL FLOWER OF THE UNITED STATES.—According to a paragraph circulating in the American newspapers, what that country needs most of all just now is a national flower. There seems to be a wild yearning for the adoption, as distinctively American, of some member of the flower family; but the difference of opinion as to the flower to be selected for that honour is remarkably wide. The following list of blossoms, favoured by different people, shows that anything like unanimity of selection is impossible. The young man looking for a rich wife prefers the Marigold. Bill collectors favour the Forget-me-Not. Temperance people select the Water Lily. The telephone girls think the "Aloe" most appropriate. Informers and spies like the "Peach" blossom. Anglomaniacs think Pennyroyal most suitable. Men who want to emphasise America as the country of railroads wish to adopt the Carnation. Pipe manufacturers are fond of the Tuberosa. Milkmen fancy the Cowslip; pruders, the Primrose. Aged people naturally select the Elder blossom. Sage is preferred by wise men. Golden Rod seems to suit millionaires best. The penman, whose Christian name is John, will vote for the Jonquil. Virginia Creeper is the picanninies' selection. Builders take to the Wallflower. Lovers are understood to prefer Tulips.

POLLARDING THE TULIP TREE.—Sometimes the question of pollarding the Tulip tree will arise; and we read in MÖLLER'S *Deutsche Gärtner Zeitung*, of a correspondent of that journal who made a trial with a stout tree which had lost its crown in a thunderstorm. To form a symmetrical crown, the limbs which remained uninjured were headed back in the following winter. Strong sappy shoots were formed the next season, which were killed for a considerable proportion of their length by the frost the next winter, and this was repeated for several years,

but not so severely. At length the wood having become weaker, ripened thoroughly, and flowers were put forth. From the above, it would appear that the pollarding of *Liriodendron tulipifera* is not advisable, at least in countries having very severe winters.

IRIS ROBINSONIANA.—This Iris, of which we gave a figure recently, is now in bloom in the succulent-house at Kew, and those who wish to see it should not delay their visit. The plant has the habit of the New Zealand Flax, sends aloft a stately panicle of flowers, of which many are in bloom at once. The individual blooms are, for an Iris, of medium size, of the purest snow white (*Cygnus candidior*), with a central blotch of clear gold. The name given by the Australians to this Iris, that of Wedding Flower, is not inappropriate. The plant is a native of Lord Howe's Island, and in habit and general appearance very unlike an Iris. The flowers, however, proclaim its lineage.

FOREIGN CORRESPONDENCE.

DENDROBIUM PHALENOPSIS.

The very large quantity of *Dendrobium Phalaenopsis* just coming into flower at the establishment of Messrs. Linden, Brussels, is certainly noteworthy. There are sufficient in flower to notice a variety of shades of colour, and from the fact that it is a six-weeks' flowering Orchid, like the *Odonoglossum Alexandra*, it must prove a valuable flower at this season of the year especially, and on till the month of October, as the flower-spikes well indicate at present. The varietal name, *Phalaenopsis*, seems well chosen, each individual flower resembling a dark variety of *P. amabilis*. An idea that it will become a favourite, if not a marketable plant, is general with those who have seen it in quantity as here. *H. K., Laeken.*

HOME CORRESPONDENCE.

CREAM-COLOURED BROOM.—I send you here-with some sprays of a very distinct cream-coloured Broom, of which I discovered a solitary bush in this locality, where the common yellow is very plentiful. It is regarded here as altogether a novelty, and as it is new to me, I should be glad of your opinion, so that I may arrange to secure seed if worth while. *Chas. T. Drury, F.L.S., Aberfeldy, N.B.* [Pretty, as a variety, but doubtful if it would come true from seed. ED.]

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—When I read the appeals made for assistance by this noble institution for assisting aged and necessitous gardeners and their widows, the idea has often struck me that in the season of flower shows someone should take up the subject of having a stall at every show for the sale of button-holes, and bouquets at cheap prices, say a penny, two-pence, or even threepence each, the proceeds of such sales to be added to the funds of the institution. If ladies and gentlemen who have gardens would make small gifts of flowers, and allow their gardeners to make up nice little sprays, for ladies' wear, for sale, and send them to the secretary on the show day, it might also help to realise a sufficient sum to place some deserving person on its funds. Secondly, if collecting boxes were put in conspicuous places at the shows, for contributions to the Gardeners' Benevolent Institution Fund, with an inscription, in large letters, showing the object of the stall and boxes, visitors who may not have known of the existence of the institution would willingly, in many cases, contribute. I know from experience, when going round with a collecting card last year, in places where people never trouble to read books or buy garden papers, they have no knowledge of the wants of this or other institutions. Gardeners with a family have little to spare out of their wages after paying to their sick and benefit clubs, and keeping themselves respectable, and cannot give the help they would like to their brother-craftsmen in distress. And, lastly, I hope all those whose sole object in showing is prize-money, will not forget to give their mite to the Gardeners' Royal Benevolent Institution. *J. W.*

HARDINESS OF ALOYSIA CITRIODORA.—We have had many of the so-called hardy trees and shrubs killed during the past winter, but the above plant, better known as the Lemon-scented Verbena, has withstood the winter's cold, unprotected in any way, and is now growing away as if nothing had happened. *J. Maers, Chymoroad, Marazion, Cornwall.*

BOLTING OF CABBAGES.—In your issue of the 13th ult., a correspondent gives an account of the state of the spring Cabbage crop in Scotland and in the north of Ireland, from which it would appear that this crop will prove a loss to many growers owing to the plants "bolting." Your correspondent ascribes this to three causes, viz., "the selection of unsuitable varieties; sowing too early; and the effect of the severe winter upon the vitality of the plants." Referring to the varieties, Etampes is mentioned as being "too tender to endure even mild winters in Scotland." Now, although residing considerably further north than the Lothians, and having grown that variety year after year since it was first sent out, I must say that it is considered here one of the hardiest of the early sorts, and the one that is least liable to "bolt." This was our opinion from the first season, but since then the seed has been saved at home, having made a start with one good head out of a thousand. This year out of ten thousand plants twenty have not "bolted," although exposed to biting east winds and a long continuance of frost without a pinch of snow to cover their nakedness; indeed, between vermin and weather there was scarcely anything left when April came in but the stems and mid-ribs—but in spite of all hardships they are now doing splendidly. The seed is sown, if possible, on July 11. In spring, a top-dressing of soot is given, but no artificial manure is used, as, although forcing for one year might not cause early flowering, it might have that effect on plants grown from seed of a strain which had been forced for a number of years. Like the McEwan's variety, which your correspondent mentions, a few of the Etampes will hold on, even the second year. Last season, a two-year-old stock produced the largest head I ever saw in early Cabbages. On going through the plots to-day, I find that a number of those sown in July, 1889, are heading beautifully, without any appearance of breaking out into bloom; and one or two throw out an arm of bloom on one side, and a good head of Cabbage on the other. I have sent per parcel post a head from those sown in July last, which, if grown in shelter and under garden cultivation, would be very large just now. *W. G. H.*

—It is, indeed, difficult to understand two things relating to Cabbages in Scotland, written of by "W. S." First, in relation to the bolting off to flower of the plants generally; and second, as to the greater hardiness of Scotch stocks over those of the south. "W. S." attributes the general bolting off to bloom of the Scotch Cabbages to the severity of the winter. Here, in Middlesex, the winter was intensely severe also, added to which we had to endure for many days the horrors of metropolitan fogs. The weather killed almost everything of the Brassica tribe except the autumn-planted Cabbages. They stood so well that few were killed, and none have bolted off to flower. It is obvious that the hard weather here had nothing to do with the Cabbages, because they have not appreciably suffered. The chief fault found with them now is that they are so robust they do not early heart in. That is, however, the fault of the strains or stocks grown, and may be remedied another year if growers will but sow the proper varieties. But when "W. S." claims for the Scotch stocks that they are harder than are those of southern growth, he should have either shown that the breadths which have thus unduly bolted in the north were of southern stocks, and not of northern stocks, or else that our southern Cabbages had succumbed to the severe winter weather. It may be that the northern stocks were sown too early last year. Some people are in such a hurry to beat their neighbours, that they do but over-reach themselves, and it would seem as if the canny Scot, who, by sowing ten or fourteen days earlier, hoped to excel his neighbour in the market, had for once been bitten, and found failure where he looked for gain. Now, here in Middlesex, when we see a Cabbage breadth unduly bolting off to flower, becoming, in fact, a biennial when the plants should be triennial, we usually hold that the stock is in fault, and that the seed was saved under similar growth. It would be almost a crime to save and sell seed so produced, as it is morally certain the defect of character thus formed will be perpetuated. Ordina-

arily, good stocks never bolt, even let the weather be ever so hard, and if ever hard weather might have been held as an excuse for undue blooming, it certainly was the weather of last winter. I could wish that our metropolitan Cabbage growers would grow fewer of the old large-leaved stocks, and more of the smaller-leaved earlier-heading varieties. These market growers are very chary of taking up new or less known sorts, because they grow large breadths, and the risk is great. In that respect they are behind private gardeners, who, in their small way, usually try all new varieties, and thus get to understand what merits each one possess. If, instead of sending into market in enormous quantities the large-leaved, late-heading varieties, growers had breadths of Ellam's Early, Heartwell, Etampes, or similar varieties, they would be great gainers, and so would the public. In spite of the fact that Cabbages have been plentiful, we have found really early small, solid-hearted ones, rare. As a rule, on the hard and none too deeply-worked ground of the market fields, Cabbages would turn in earlier than in deeply-trenched soil, and be harder. That they are not so early is chiefly owing to bad sorts. It does seem an absurdity that large numbers of women should be employed in the fields tying Cabbages, just as though they were Lettuces, and not to induce them to heart, because they will heart in none the sooner for the tying, but to mislead purchasers into the belief that the heads are really solid and well blanched. Had the growers really firm-heading, precocious sorts, that kind of deception need not be practised. *A. D.*

EARLY PEAS.—These have been very much damaged, as your correspondent, "R. D.," points out at p. 758, vol. ix., of the *Gardeners' Chronicle*. We commenced to gather Peas from plants which began to flower at the end of the month of April, but which were much retarded by the frosts. These were raised in a cold house, and then planted out on a warm border; had sticks put to them, and were protected with small branches of Spruce Fir; but, in spite of all these precautions, Chelsea Gem Pea, sown outside in the first week in February, was ready at the same time; and it is at least a week before any other variety that I grow. American Wonder, Veitch's Selected, William 1st, were sown at the same time. Chelsea Gem is harder than other early Peas, and the pods are large and filled with well-flavoured seeds. Another season I shall trust to this variety entirely for early work. The kitchen-garden foreman says that it is the best early Pea he has seen for filling the basket. Another good variety is Cannell's "English Wonder," a Pea sent to me for trial, which is a very strong grower, very dwarf and prolific; in fact, I think it would be nearly as early as Chelsea Gem if it were sown at the same date. It is a plant that forces well, as was apparent in a small batch in pots, which was grown side by side with Chelsea Gem. American Wonder was more cut by frost this season than any other Pea that I grow, so it would seem to be a somewhat tender plant. Neither Chelsea Gem, American Wonder, or English Wonder requires any support, all of them growing from 15 to 18 inches in height. *W. A. Cook, Compton Bassett.*

DORONICUMS ON THE GRASS.—After growing the *Doronicum* in different soils and situations, the best position is, I find, in a damp situation on turf. In such a situation we have a large clump at the present time which is a mass of flower. On taking charge of these gardens two years ago, I found a strong clump of this species of *Doronicum* growing on a dry situation, and I resolved to divide it, and plant it as an experiment on the lawn. The plants were taken up in February of last year, divided and planted 1 foot apart, first making a station for them by removing the clayey soil and replacing it with ordinary garden soil. That year they grew so well that twelve months from the planting, each alternate plant could be removed with advantage to those which were left, and these were used to double the size of the clump, and at the present time the plants touch each other. The position being on sloping ground and backed with clumps of *Rhododendrons*, the group when seen from a short distance has a beautiful effect. The *Doronicums*, beside their value as hardy plants for massing and for borders, are useful for cutting, they being furnished with long flower-stems, and keeping a long time fresh in water. There are in these gardens large masses of other plants, viz., *Funkias*, *Trollius europaeus*, *Polygonums*, *Herbaceous Peonies*, large masses of *Saxifraga granulata flore-pleno*; one of these under a Lime tree is many yards across, and in its season it is one sheet

of white flowers. Coloured *Primroses* also make a grand feature on the turf, and are placed in separate colours of such strains as Dean's and Waterer's. *Pro, Forde Abbey.*

LILIUM LONGIFLORUM VAR. HARRISI, AND GREENFLY.—Mr. Pearson well deserves the thanks of amateurs and gardeners for letting them know of so quick and effectual a remedy as that he mentions for greenfly on *Lilium Harrisii* and other plants, as it is not only cheap and simple but easy of application; and, if no injury results, what a boon it will be. In a general way, I fight rather shy of insecticides, as assistants are not half particular enough in weighing or measuring quantities, and putting the right proportions, and the haphazard system is responsible for much mischief being done among plants. If tobacco juice could only be had at a cheap or reasonable rate, or the weed the same, for horticultural use, then aphid would not be such a terror or plague to gardeners, as they would be able to despatch them instanter with safety! Perhaps some day we may have McDougall's sheets at half the price at which they are sold now, or some other preparation as good. *J. Sheppard.*

LEONTOPIDIUM ALPINUM: "LION'S FOOT," OR "EDELWEISS."—This plant is now opening its pale yellow flowers, of which there are many in a head, surrounded by a star-like whorl of woolly oblong leaves; by some thought to be more curious than beautiful. Its native place is on the high mountain pastures of Switzerland, &c. It should be planted in an exposed place in the rockery, in moist porous soil, as it likes moisture, but not an excess of it. It can be multiplied by careful division. Some people find great difficulty in growing this little alpine successfully, but I do not know why, unless it be for want of water during very dry weather. *H. Grillage.*

SALVIA HIAS.—The stiff and cold soil of the garden at Edge is unfavourable for most *Salvias*, but *Salvia hias* is a notable exception, and I can recommend it as a very hardy and very ornamental plant, having in addition the merit of being contented, for at least ten years, with the spot in which it is planted, and flowering more strongly every year. The flower-stalks are about 2 feet high, producing many whorls of large purple flowers with a white mark inside. The growth is compact, and several stalks are produced from a small base; seed is ripened annually in small quantity, and the seedlings begin to flower when two years old. The habit is strictly herbaceous. *C. Wolley Dod, Edge Hall, Malpas.*

THE SEED TRADE.

SOWING PEAS.—The old practice of sowing Peas in the open during the month of November, at one time carried out in many gardens, and especially in those of the Southern Counties, in the belief that a considerable gain in earliness of crop resulted in spring, is one now largely abandoned. It is found that a great amount of labour is entailed, with considerable risks of losing the crop, and that the difference in gathering was very slight. Then the introduction of such dwarf varieties as Little Gem, American Wonder, William Hurst, and Chelsea Gem, has placed gardeners in possession of varieties they can grow in pots, or which they can sow in boxes early in the year under glass, and transfer to the open ground in early spring when the weather is favourable. The hardier types of early Peas, represented by the blue and white round varieties, may be sown as early as possible in March, and it will be found they will come in almost or quite as early as those sown in the open in November, and which had to be very carefully attended to during the winter. For this purpose Sutton's Ringleader, their Early Blue, which seems to be identical with Harrison's Eclipse; and Improved William the First—as representing the hardier types of early round Peas, are decidedly the best for early sowings in the open. But with these it is a question of stock. I have seen Ringleader, dwarf, compact, vigorous, and bearing freely good pods. I have seen it tall, loose in growth, lanky in appearance, late, and producing quite small and unprofitable pods. So much can be done in the way of selecting good stocks of Peas; and he who enters upon this work and achieves success is as great a

benefactor to the gardening community as he who raises an acceptable new variety.

Some interesting particulars are constantly being revealed to those who have to do largely with the sowing and testing the qualities of Peas. I saw at the end of May, in Essex, a large trial of Peas of many sorts sown very carefully in rows to test their quality; and while the round varieties, whether early or main crop, had germinated well, and with average regularity, the early wrinkled varieties had done badly. And yet it was not for lack of adequate germinating power; for samples of the same, the growth of which had been tested in heat, and again by a later sowing in April, had germinated freely. The condition of the soil in early spring does not appear to be so favourable to the quick growth of wrinkled as of round Peas. Then 1890 was unfavourable to the proper harvesting of many Peas, and especially to the wrinkled varieties, which always suffer most in a wet season. The conclusion came to was, that on the whole it is well not to sow wrinkled Peas so early in the season as the round ones.

A wholesale seed house in a large way of business receives every year a good number of stocks of the same variety of Pea grown in various parts. It is the custom to take a half pint sample from each delivery, carefully marking upon it the name of the variety and grower, and the quantity delivered, and then sow in March, keeping about one-third of the seed. The early sowing is in order to test both quality and growth. A second sowing is made early in May, simply as a further test of growth, and a third sowing is sometimes made at the end of May, the seeds being then taken from the bulk. All this work entails considerable labour; but it is very necessary in working a large business.

As showing the lateness of the season, Early Peas which, when sown in the middle of March, generally bloom about May 24, showed no sign of flower at the end of May; indeed it could hardly be said the flower-buds were there, and the irregularities of germination in such a season were remarkable. For instance, seed of William Hurst Pea, growing against sticks in their trial grounds at Chelmsford, the sample good, grew very sparingly, though more than usual care had been taken in saving it; but seed of the same variety, saved in Kent, Sussex, and Lincolnshire, grew well. A sample of the same, sown at the beginning of May, had germinated well, so it would appear obvious that conditions of soil must have affected the growth of the seed. And yet it was naturally thought that if the growth of my sample would be satisfactory, it would be that saved under such favourable conditions. A very large quantity of samples are sown—sometimes as many as fifteen to twenty of one sort. All have sticks placed against them for their support, and they are carefully examined and their peculiarities noted. The produce of any particularly fine and true sample is carefully saved, and grown another season for stock seeds.

It is noticed that, as a rule, small, indented, and wrinkled seed grow thickly; but in the case of large seeds, they germinate less satisfactorily. Indeed, it appears to hold good generally, that the larger the Peas the greater is the number of failures. *Pisum*.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM LEROYANUM ×.

A HYBRID raised at Armainvillers between *O. crispum* and *O. luteo-purpureum*. *O. Wilckeanum* is supposed to be a natural hybrid between the same parents, but whether or no, the present plant figured in the April number of the *Orchidophile* is distinct from *Wilckeanum*. The flowers are stellate, with oblong lanceolate undulate white segments, barred with chocolate spots, and with the callus of the lip yellow and fringed, as in triumphans.

ORCHIDS AT BURFORD LODGE.

In the famous collection of Sir Trevor Lawrence, Bart., M.P., there is an unusually large display of all the showy genera—*Odontoglossum*, *Cattleya*, *Lælia*, *Dendrobium*, &c.—of which an excellent idea was afforded by the large group of rare species shown by him at the last Temple Show. All the plants shown there are now out of bloom, but the number of good things in flower is even greater than at that time.

In one of those compact, warm houses, in which most things thrive well, were numbers of fine *Vandateres* in bloom, not a single growth having missed flowering; also a specimen of *V. t. alba*, a delicately-tinted form, but not entirely white, as the name might lead one to suppose. Here, too, in a shady corner, was a fine stock of the beautiful vermilion terrestrial Orchid, *Habenaria militaris*, all the plants being stout, and with fine, perfect, and beautifully marbled stout foliage. Few growers of this plant succeed with it, and if we note that it is grown beside vigorous and flourishing plants of *Miltonia Ræzii*, it may give the unsuccessful a clue to the proper method of culture. In the same house were plants of *Epidendrum radicans*, with fine heads of dark scarlet flowers; some also of *Phaius Humboldtii*, and a very beautiful hybrid *Cypripedium* × (*Lowii* × *superbiens*).

THE DENDROBES.

We noted amongst these the singular *D. stratiotes*, with its long erect twisted petals, the curious and allied *D. strebloceros* and its white variety *D. S. Rossianum*. Other *Dendrobes* in bloom were *D. suavisimum*, *D. Phalenopsis*, *D. triadenum*, *D. aduncum*, &c. The bank consisting of *Cypripediums*, which always look so fresh and healthy, and which are never without some one or other in flower, have *C. bellatulum*, *C. niveum*, *C. Godefroyæ*, and *C. concolor*, all well furnished with bloom, as well as fine specimens of the favourite *C. Lawrenceanum*, *C. superbiens*, *C. Curtisii*, *C. superciliare* ×, *C. Sedeni candidulum* ×, *C. orphanum* ×, *C. Ashburtoniæ expansum* ×, and others; and in the same house *Catasetum Bunge-rothii*, *Phalenopsis Sanderiana*, and *P. sumatrana*. Suspended in this house, too, was a very rare and curious collection of *Cirrhopetalum* and *Bulbophyllum*, whose quaint flowers always attract so much attention whenever they are exhibited in public.

In the *Acrides*-house a beautiful specimen of *Acrides nobile* had seven spikes; and *A. crassifolium*, *A. falcatum*, *A. multiflorum*, and *A. odoratum* are in bloom; and in the adjoining house were some noble specimens of *Sobralia macrantha*, a plant of the white *S. virginialis*, and various pretty and interesting *Epidendrums*.

The *Cattleya* and *Lælia*-houses have their occupants, like all the others in the Burford collection, in fine health; in bloom being some good examples of *Cattleya Warszewiczii* (gigas), *C. Mendeli*, *C. Mossiæ*, &c. Here the forms of *Lælia elegans* are grown to great perfection. In these houses were some grand specimens beside the *Cattleyas*, notably a great mass of *Celogyne Lowii*, with seventeen leading growths, and the good and healthy collection of *Vandas*, and fine pans of the various species of *Pleione*.

In an adjoining stove, among well-flowered specimens of *Begonias*, *Tydas*, &c., including the curious chocolate-coloured *Tinnea æthiopica*, which has a delightful odour of Violets, are two huge specimens, one perhaps the largest known of *Grammatophyllum speciosum*; and the *Renanthera coccinea*, which has been in the Burford collection for many years, and whose history can be traced back to a very early date in the history of Orchid cultivation in this country, and which goes far to prove that many species of Orchids do neither degenerate or die, if they are carefully tended.

The Cool-houses afforded a rare show of bloom—those devoted to the *Odontoglossums* having a fine display of *O. crispum*, of which the most striking are the *O. c. Burford* variety, with finely-formed and heavily-spotted flowers; and *O. c. Purple Emperor*, a charming variety with rosy-purple flowers, on

which are a few brownish spots. There were also some curious hybrid *Odontoglossums* in bloom, and some fine forms of *O. luteo-purpureum*, the pretty white and purple *O. Lucienianum*, and a good batch of *Epidendrum vitellinum*.

In the *Masdevallia*-house in which the forms of *O. crispum*, *O. Forbesii*, *O. curtum*, &c., thrive well, was a brilliant display of the showier *Masdevallias*, whose countless flowers of dazzling brilliance mingle effectively their shades of scarlet, orange, mauve, and purple, and with the more stately varieties of *M. Harryana*, *M. Veitchiana*, *M. ignea*, &c., the dwarfier *M. rosea* and other species are very attractive. Two very fine hybrid *Masdevallias* were in bloom, viz., the very rich orange *M. Mundynna* ×, and the pretty *M. Geleniana* ×; and among the miniature species, *M. tridactylites*, *M. Wageneri*, *M. swertiaefolia*, and the pretty *M. irrorata*,

CURIOUS AND RARE ORCHIDS

are noted in the Burford collection, and, as Mr. W. White, the Orchid grower says, the smallest-flowered species, which some Orchid growers pretend to despise, always command a great amount of attention from visitors when they are flowered well. Among this class of plants now in bloom were noted the beautiful *Masdevallia picturata*, with its yellowish flowers, spotted with chocolate-crimson, and which we believe was flowering for the first time in cultivation. *Pleurothallis macroblepharis*, too, with its slender sprays of midge-like flowers, and the singular and beautiful *P. ornata*, with its velvety-black flowers fringed with silver, should be noted; also *Luisia volucris*, with its dark purple labellum, dorsal sepal, and horny-like petals, each over an inch in length, and the red and white *Oncidium triquetrum*. *Sarcopodium psittacoglossum*, too, is a very singular and pretty species, and *Bulbophyllum elegans*, a quaint flower. Of a showier class we mention the noble specimen of the Swan-Orchid (*Cycnoches chlorochilon*), with two fine spikes of six flowers each—probably the greatest number a plant has even borne under cultivation. Of *Disa racemosa* there are good specimens, well-furnished with light rosy-crimson flowers; the old but rare *Warrea cyanea*, too, had a fine spike of flowers, with their attractive dark blue labellums; *Hexisia bidentata* was profusely furnished with scarlet blooms; the rare *Celogyne Dayana*, of the original importation, was in flower, and in the various houses were found many other pretty and rare species which are seldom observed in other collections. The gardens around the Orchid houses are filled with *Roses*, herbaceous perennials and annuals, very bright and attractive, and far more satisfactory than would be the case if planted with what are commonly called bedding plants.

A FINE PHALANOPSIS GRANDIFLORA.

In the gardens of F. Wigan, Esq., at Clare Lawn, East Sheen, is a very fine specimen of *Phalenopsis grandiflora*, the largest of the seven leaves has being 14 inches long and 3 inches wide. During the winter the plant made three leaves, and finished up by producing a flower-spike from the apex of the plant instead of from the base of a leaf. Its flowers were unusually large, as the following figures will indicate: diameter, $4\frac{1}{2}$ inches; width of petal, $2\frac{1}{2}$ inches; width of top sepal $1\frac{1}{2}$ inch; length of flower-spike (which has a branch), 2 feet 6 inches. The main spike has twelve flowers, and the lateral six flowers.

FLORISTS' FLOWERS.

CARNATIONS.

UNFORTUNATELY, growers of collections are still finding their plants die, and to their sorrow, after they have set forth upon a period of promising growth. Those who examined the plants found dead or dying in the spring, after they had endured the perils of the winter, discovered that the point where decay set in was just at the surface of the soil; the stem was found to have decayed through—rotten, it might be termed, though with a dry rather than

with a wet rot. I have seen collections in which plants are dying from the same cause—happily not many, but some—and an examination seems to show that decay set in upon the outer bark, and worked its way through to the centre of the stem. It is not an insect like the wire-worm at work, but it seems to partake more of the character of a decay wrought by some cause, probably the action of frost and wet combined. Possibly the fact that layers were somewhat succulent when the November frost of last year overtook them, operated to render them more liable to attack. So far, plants in pots have been free from insect pests, but with the advent of hot sunny weather, they are putting in appearance. Aphis can be kept under by brushing them into space by means of a camel's-hair brush; if through oversight they have become numerous, an insecticide should be employed.

Calling upon Mr. Joseph Lakin, of Temple Cowley, a few days ago, I found him very busy going through his Carnations, cleansing them of all dead foliage, stirring the soil, and topdressing with a compost made up of yellow loam, cow manure, and a little lime; tying up the main shoots, and then laying oyster shells upon the surface to prevent evaporation. It takes some time to go through several hundreds of pots, but it is a process decidedly advantageous to the plants. Mr. Lakin blooms his plants in smaller pots than is usual, a pair of plants, generally, occupying one pot; but they are healthy, and full of promise, though late. But much will depend upon the weather during the next month.

In the open ground, Mr. Lakin has beds of his new white Self Carnations, Annie Lakin and Emma Lakin, the plants having been put out in October last. The constitutional vigour of both of these varieties is seen in the way in which they came through the winter; there is scarcely a blank in the lines of vigorous plants, and in a month or so they will present to view sheets of bloom. The new white Pink, Mrs. Lakin, distributed this season, is also a vigorous grower, and remarkably free of bloom. Apart from the high quality and purity of its blossoms, it has the desirable characteristic of not splitting its calyx. *R. D.*

THE AURICULA.

Growers are always busy amongst their plants, and where the collection is of moderate size, something will require to be done every day beyond watering the plants and removing the lights. Seedlings must be grown on freely if they are to flower next year, repotting them until they reach the size in which they will flower—60's, or a size larger. I know the advantage of planting out seedlings in the open; it saves labour, and the plants grow rapidly to a flowering size. It is, of course, necessary to lift them in their flowering-pots, at the latest before the third week in September. Seedling alpine Auriculas, which do so well out-of-doors in our climate, must not be much shaded, as they do not need shade to the same extent as the Auricula proper. In hot weather, the common green aphis, as well as the Auricula aphis, multiply exceedingly, and a continual warfare must be waged against them by dusting with tobacco-powder, or fumigating with tobacco, which are the two most effectual means of destroying them. The repotting of Auriculas should be finished quickly, in order that the plants may be established before the cold weather. Do not let the plants suffer for want of water, but also do not afford them too much.

THE CARNATION AND PICOTEE.

The weather was so cold to nearly the middle of June, that it seemed as if it must be a very late season, but the month was really warm in its latter half, and the progress of the flower-buds has been very rapid. A rather remarkable phenomenon occurs annually with my plants in pots; before the petals have grown enough to open the calyx, many of the flowers are found quite disfigured by thrips. How these insects get into the buds before they open is a mystery to me, especially as there are scores of plants in the open ground quite close to them, and none of these are attacked by thrips. It

has been found advisable to get the plants under glass as soon as we can, and fumigate them with tobacco. The seedling plants which are to flower out-of-doors have made unusually good growth, and are crowded with flower-buds. I did not at one time expect that they would be in flower before August, but the hot weather is speedily bringing them forward. The flower supports are being now put to the plants, and when this is done, the ground will be prepared, and the seedlings raised from seeds sown in April last will be planted out. These last are very strong—just such plants as are sure to have plenty of blooms next year. We plant them 12 or 15 inches apart, and as the soil is deep and well manured, they speedily touch each other.

PINKS.

All classes of these are flowering well this year but for beautiful useful border flowers, the pure white varieties with fringed petals are preferable to any others. No one can deny the exceeding beauty of the laced Pinks; the sparkling white ground, enriched with a line of scarlet or reddish-purple round each petal, and a narrow white margin; but they are still not so effective as the best selfs for bouquets and the other purposes for which Pinks are used. Now is the right time to put in pipings; these should consist of the growths found at the base of the plants, be cut clean through just below a joint, and planted under hand-lights or *cloches*, which should be kept close until roots form; when rooted, the pipings should be aired for a few days, and then planted out 3 or 4 inches apart in beds of light soil, to gain strength, and finally planted about 10 inches asunder where they are to flower, before the end of the month of September. I like to get mine established early, late-planted Pinks suffering more from frost. All those plants intended to be forced in pots should be planted out in rich porous soil, at 12 inches from plant to plant, lifting in September, and potting them in 48's or 32's.

PANSIES.

have made a grand show this year generally, where the planting was done in deep rich ground. We have a bed of them, 5 feet in width and 90 feet in length, in which the plants as they grew were pegged down, and the earth is completely hidden. It is yet too soon to take cuttings, the end of July being soon enough for the first lot, and a month later for the second. Sometimes those taken early do the better, and sometimes the later ones. This depends a good deal upon the weather; for if it be hot after the cuttings are put in, an aphis of a reddish colour cripples them. There is no need to put in these cuttings, or rather slips, under glass; they do better in an open border, where the sun will not shine upon them from 10 A.M. till 4 P.M. The Pansy even more than the Pink or the Carnation, delights in an open rich soil. *J. Douglas.*

COLONIAL NOTES.

CANADA.

ROYAL SOCIETY OF CANADA.—The annual meeting of the Royal Society of Canada was held this year in the city of Montreal (by invitation of the citizens) during the last week of May. In Section IV., a paper was read by Professor Penhallow on the "Pleistocene Plants of Canada, with two new species from the United States. Sir William Dawson and Professor Penhallow read a paper on "Parksa decipiens," a fossil found in the shady Lower Devonian rocks of Perthshire and Forfarshire, and which was likened by the late Professor Fleming, of Edinburgh, to a Sparganium, while others regarded it as molluscan spawn. The microscopical characters seem to show it to be a Rhizocarp allied to Pilularia. An unmistakable drawing of a Prothallus was shown.

Professor Lawson read a paper "On the Present State of Botany in the Dominion of Canada, with Suggestions as to promising lines of investigation, and a Proposal for united Effort in Systematic

Observation throughout the several Provinces and Territories." This paper was fully discussed by Professor Penhallow, Professor Saunders, Professor Macoun, Sir William Dawson, Mr. Matthews, Mr. Hay, and others, and, in accordance with its leading suggestion, the Botanical Members of the Section resolved to form an organization for the systematic exploration of the several Provinces and Territories of the Dominion, such organization to be known as the Botanical Club of Canada.

The Club is formed altogether distinct from the Royal Society of Canada, but affiliated with it in the same manner as the other scientific and literary societies of the Dominion. The club is started without any restraining constitution or bye-laws, but with a corps of officers which can be increased by appointment, and who are at liberty to advance the work in whatever fashion each may find most effective. The general organization for this year is as follows:—President: Professor Lawson, Halifax, Nova Scotia. Secretary - Treasurer: Principal MacKay, Halifax.

Secretaries for provinces:—Ontario—Professor John Macoun, Botanist of the Geological Survey of Canada, Ottawa. Quebec—Professor D. P. Penhallow, Montreal. New Brunswick—G. U. Hay, St. John. Nova Scotia—E. J. Lay, Esq., Amherst. P. E. I.—F. Bain, Esq., Charlottetown. Newfoundland—Rev. A. C. Waghorne, St. Johns. Manitoba—Mr. Burman, Winnipeg. Alberta—W. H. Galbraith, Lethbridge. British Columbia—Dr. Newcombe, Victoria. The list of provincial and local secretaries is being largely extended.

The secretaries for the provinces are expected to stimulate in any manner they may devise, the botanical exploration of every section of their territory, by stirring up local botanists; by setting collectors at work in every possible locality, and thus develop new botanists; by having published in the local papers the lists of all plants in each section of the country as the work of exploration goes on; by collecting and critically examining and correcting such lists; by forming field clubs; and by transmitting suggestions and a summary of the work done in the provinces to the central officers before the end of 1891.

The work of the Club will be reported annually to the Royal Society of Canada; and papers prepared by its members, of a sufficiently complete character for permanent record, will be submitted for publication in the Society's *Transactions*.

SOCIETIES.

MIDLAND COUNTIES PANSY.

The first exhibition of this Society took place in Birmingham on Wednesday, June 24. The leading prize-winners in the "open to all" classes were Mr. John Smellie, Bushy, Glasgow; Mr. A. Bailey, jun., Sunderland; Mr. Campbell, Blantyre; Mr. A. Irvine, Tigh-na-bruaich, near Rothesay; and Mr. A. Lister, Rothesay. Some very fine blooms were exhibited by them, and Mr. Irvine had, amongst new ones, fine blooms of John Morris, John Cook, Mrs. A. Irvine, Nellie Cooke, Minnie Tate, Lizzie Irvine, W. H. Gabb, and Lizzie Forest, not yet sent out.

In the class for local growers, Messrs. Pope & Sons, King's Norton Nurseries, were 1st respectively for twenty-four Fancies and twelve new Fancies, and the other classes were well filled.

Messrs. Dobbie & Co., florists, Rothesay, sent a large collection of Violas, which included the leading varieties, and two new ones—Lass o' Gowrie and Annie King, which received certificates. In this collection, some of the most striking were Duchess of Fife, Countess of Elgin, Lucy Ashton, Mrs. Bellamy, Bullion, Evelyn, Gipsy Queen, Mrs. Grant, Ada Adair, The Mearns, Minnie Baxter, and Goldfinch. The same firm also contributed a very large display of fancy Pansies.

Some of the finest of the more recently-introduced fancy Pansies exhibited were—Miss Duncan, very fine generally; George Anderson, grand everywhere; Lord Hamilton, Donald Morrison, Tom Travis, a

superb variety; Teenie Mitchell, Helen Christie, Maggie A. Scott, Mrs. Hugh Weir, William Caldwell, William Ross, F. R. McDonald, Mrs. J. McConnell, James Simkins, John Taylor, Agnes Mabel, Mrs. Freeland, David Rennie, and Mrs. M. T. Atkinson.

Mr. James Simkins, King's Norton, won the *Gardeners' Magazine* Silver Medal and a Certificate for fancy Pansy Baccarat, in the amateur's class; and Messrs. Hewitt & Co., Solihull, obtained a Certificate for a beautiful coloured bedding fancy Viola, named Peacock.

RICHMOND HORTICULTURAL.

BEYOND a passing thunderstorm, there was little in the weather to interfere with this popular Society's exhibition, held as usual in that fine expanse, the Old Deer Park. Had some of the enterprising show managers from the North or West, charge of the Richmond show, they would make the gathering into a brilliant horticultural gala, and bring together tens of thousands of people. At present the gathering is a show with very good instrumental music, and does not attract one-tithe of the people who might be looked for to attend. On the recent occasion, the attendance of the Duke and Duchess of Teck, with the Princess Victoria, materially helped to draw, as perhaps also did the fine band of the Grenadier Guards, and the huge band of 120 instrumentalists from the Military School of Music, Kenella Hall, Twickenham. Still the gate-money was not at all excessive. The plants were chiefly found in a large tent, which it needs very many and fine collections to effectively fill. Palms and Ferns were too apparent, forming a miniature forest of greenery, almost unrelieved by colour, the flowering plants being staged at one end, and the foliage plants at the other, a most unfortunate arrangement.

Messrs. J. Laing & Sons, Forest Hill, had one side a capital group of foliage and flowering plants, including numerous good Begonias. Messrs. W. Cutbush & Sons, Highgate, had a pretty group of Heaths, Statice, Spiræas, and several of the bottle-brush plant, *Metrosideros floribunda*. Mr. Icton, of Putney, had a fine group of Palms, interspersed with variegated Euryas, Acers, Dracenas, &c. Mr. Mould, Pewsey, a good group of semi-specimen Heaths, the best of which were *Erica Cavendishii*, *ventricosa rosea*, and *exquisita*, with other plants. Mr. J. Chambers had a collection of his snowflake *Viola*, *Phlox uniflora*, white, with red eye, various wreaths, crosses, bouquets, &c. Several groups formerly so attractive were this year conspicuously absent.

Decorative Groups.—The best of these in the larger class was arranged by Mr. W. Brown, of Richmond, whose style is so well known and rarely excelled. Mr. Fordham, of Twickenham, and Mr. W. James, Lower Norwood, came 2nd and 3rd. Some smaller groups came from local gardeners, and were of the customary pattern of which visitors are beginning to tire. The chief stove and greenhouse plants in flower came from Wiltshire. Mr. Mould having the best in three good *Ericas*, *Cavendishiana*, *ventricosa*, *Bothwelliana*, and *Aristella*; a huge and finely flowered *Dracophyllum gracile*, *Statice floribunda*, and *Bougainvillea glabra*, the latter two rather weak. Mr. Currey, gr. to Colonel Pepper, Salisbury, was 2nd, having some fair *Ericas*, &c.

Foliage plants, though so numerous, call for no special comment, as they attract little attention.

Orchids were, in the competitive class, more numerous than usual. The best six came from Mr. Young, gr. to F. Wigan, Esq., Sheen. The fine white *Phalenopsis grandiflora* was exceptionally striking; *Cattleya Mendeli* and *Miltonia vexillaria* were excellent. Mr. Ryder, gr. to C. Young, Esq., Richmond, was 2nd, having some good *Cattleyas Mendeli* and *Mossiae*. In other collections, *Epidendrum vitellinum majus*, *Oncidium macranthum*, and *Odontoglossum Alexandrae*, were also excellent.

Begonias.—Mr. H. Little, Twickenham, had the best twelve, very showy, well-bloomed plants; most of the others were too small-flowered, and drooping, thus failing to give any good effect.

Gloxinias formed a telling feature. The finest nine, in one class, some really splendid plants, were from Mr. T. B. Hilditch, Richmond; and in another class, the best were from Mr. P. Hanken, Sheen. Owing to the omission of the names of the gardeners from the cards, we are unable to furnish them. Gardeners should see to that at any future show.

Pelargoniums, both show and fancy, from Mr. C. Turner, of Slough, were as usual good, the best of the former were Goldmine, Sister of Mercy, Statesman,

and Duke of Norfolk; and of the latter the Shah, Fanny Gair, Princess Teck, and Ambassadors. Mr. Baldwin, of Hillingdon, had some very good plants also. Mr. Turner, Mr. Baldwin, and Mr. Clay, of Kingston, had fine groups of the above varieties in great profusion. Mr. H. Little had some splendidly-flowered zonal *Pelargoniums*—J. Veitch, Mrs. Johnson, Mrs. Gordon, Italica, and Pearson's Pink, were wonderfully fine. He also had the best six ivy-leaved plants, all good doubles.

Fuchsias were moderate in quality, a long way below the earlier Richmond form. Some prettily dressed baskets of plants came from Mr. Little and Mr. Furse, Teddington; and Mr. Cookey, of Kingston, had a pretty basket of *Odontoglossum Alexandrae*.

Cut Flowers.—Roses usually form a strong feature, but this year all the well-known trade exhibitors of former years and their flowers were conspicuously absent. The best thirty-six trebles came, curiously enough, from Yorkshire, Mr. May, of Bedale, being placed 1st, with what was presumably a meritorious lot of flowers for the season. Messrs. Prior & Sons, Colchester, were 1st, with twenty-four trebles. The former exhibitor had the best twelve Teas, and the latter the best twelve yellows in good *Maréchal Niel*. In the amateur's class, an invincible local grower, Mr. Warwick, gr. to J. T. Kitchen, Esq., Hampton, was 1st, with twenty-four capital blooms; and in a second class, Mr. H. E. West, Reigate, was 1st. Messrs. Jackman & Sons, Woking, showed several boxes of fairly good flowers.

Baskets and bouquets of Roses were fresh and pleasing early in the day, but later drooped materially. Miss Clarke, Whitton, and Miss Heston, the Orphanage, Twickenham, had the best baskets. Bouquets were of a somewhat lumpy order. Very admirable ordinary bouquets came from Mr. Perkins, Coventry, and Mr. Butcher, Clapham, and were largely composed of Orchids.

Table-stands always form a very attractive feature here, and some of the styles of setting up are quaint and not always pleasing; as a rule, the ladies who do these things overload their arrangements. In the class for three stands, Mr. Butcher who was 1st, departed from the stereotyped glass-stand, and built up three small mounds of moss on trays, one round, two about 16 inches long; these mounds were dressed with tiny Palms, *Caladiums*, Ferns, &c., and a few fitting flowers, and were very pretty, they had the merit of presenting no obstruction to sight and conversation across the table. Miss Cole, of Feltham, was 2nd, with rather low stands, dressed chiefly with pink and white Carnations. In the class for two stands, Miss Mould, of Richmond, was 1st, being dressed with Iceland Poppies, whilst Miss Wigan had her stand filled with blue and white Irises.

Fruit was moderately good. Mr. C. J. Waite, Glenhurst, Esher, was 1st, with six dishes; Mr. Osman, Ottershaw, being 2nd. The latter had the best three bunches of Black Hamburg Grapes; and Mr. Ford, gr. to W. H. Ellis, Esq., Hounslow, the best white, in good Foster's Seedling. Alexander and Dymond Peaches were very fine, and Lord Napier Nectarines wonderfully good. Noble was the chief Strawberry, Mr. Waite having the best.

Vegetables.—As usual, Mr. Waite was an easy 1st in several classes, taking the premier awards in one class for twelve, another for nine, and a third for six dishes, in all twenty-seven dishes, all first-rate. For the season his Early Forcing Cauliflowers, Perfection Tomatoes, Duke of Albany and Duchess of Albany Peas, International Potatoes, Giant White Lettuces, Asparagus, &c. were of the highest merit. Mr. Waite also had the best dish of Tomatoes in the class—a very fine sample. Mr. E. H. Page, Ham House Gardens, Petersham, was 1st in a second class for twelve vegetables, a very good lot indeed. Generally all other vegetables were much behind the usual Richmond standard, the show being rather too early, and the season much too late. Cucumbers were of the old style, rather too large and irregular.

TORQUAY ROSE SHOW.

THE Annual Rose Show was held as usual at the Down Nursery, on June 24 and 25, the flowers being tabled in a show-house 150×25 feet. Valuable prizes were offered both by the Torquay Horticultural Society and by Messrs. Curtis, Sandford & Co. The competition, it was obvious, becomes greater each year. Owing to rain falling heavily the whole of the previous day, the Rose-blooms, especially hybrid perpetuals, were much damaged. Still some

very creditable stands were staged. Visitors were admitted without payment, but they were requested to give something on behalf of the local Gardeners' Relief Fund. About £56 was collected in this way during the two days of the exhibition. A large number of the gardeners of the neighbourhood form the committee, which is presided over by Dr. Ramsey, with Captain W. Fane Tucker as Hon. Treasurer; and Mr. A. Chandler (of the firm of Curtis, Sandford & Co.), as Hon. Secretary. This committee meet monthly, and relieve any cases of distress amongst gardeners or the widows of gardeners, provide immediate relief, which in many cases is most welcome. The Society does much real good in this way, and the names of many eminent horticulturists in the neighbourhood and in the county, who belong to it, form a sufficient guarantee that it is a *bona fide* institution, whose endeavours to relieve deserving cases are appreciated generally, as was shown by the contents of the collection boxes there.

Messrs. Curtis, Sandford & Co. exhibited a large collection of cut Roses, Pæonies, &c. of great excellence. Messrs. Veitch & Son, of Exeter, had a very attractive stand of herbaceous Pæonies, Irises, single and double Pyrethrum, Delphinium, Pansies, Orchids, &c. Mr. Coombes, fruiterer, staged a large variety of fruits of Cherries, Grapes, black and white; Lemons, Strawberries, Melons, Pine-apples, Tasmanian Apples, Tomatos, Oranges, &c.

Division A, in which prizes are offered by the horticultural societies of Torquay.

Thirty-six Roses, distinct, one truss of each.—1st, Mr. J. French, gr. to Moreton Sparks, Esq., Rooklands, Torquay; 2nd, Mr. J. Sloman, gr. to Captain W. Fane Tucker, Braddon Tor, Torquay.

Twelve distinct, three trusses of each.—2nd, Mr. J. French; 3rd, Mr. J. Sloman.

Twenty-four distinct, one truss of each.—1st, Mr. Hasler, gr. to Mrs. Keade, Brailsford, Torquay; 2nd, Mr. H. Dammerell, gr. to Lady Macgregor.

Twelve distinct, one truss of each.—1st, Mr. H. Dammerell; 2nd, Mr. F. Hodges, gr. to C. Salmonson, Esq.

Six distinct varieties, three trusses of each.—1st, Mr. Dammerell.

Twelve single trusses of any pink Rose.—1st, Mr. J. Sloman, with Madame G. Luizet; 2nd, Mr. J. French, with Jules Margottin.

Twelve single trusses, any dark Rose.—1st, Mr. S. Hunt, with Eugène Appert.

Twelve single trusses, any yellow or white Rose.—1st, Mr. J. French, with Devonensis; 2nd, Mr. S. Abbott.

Twelve Teas and Noisettes, single truss, distinct.—1st, Mr. Narroway, Oxford; 2nd, Mr. J. French.

Best hybrid perpetual in the exhibition.—Mr. Board, with La France. Best Tea Rose, Mr. Baylis, Chelston, Souvenir d'Elise.

Division B.—In this division, Messrs. Curtis, Sandford & Co. were the prize-givers. Six Tea, Roses, six H.P.'s single blooms.—1st, a Silver Cup, Mr. J. French; 2nd, Mr. Board.

Six distinct vars., one truss of each.—1st, Mr. H. Dammerell; 2nd, Mr. A. Warren.

Six blooms, one variety.—1st, Mr. Dammerell, with *Maréchal Niel*—very good; 2nd, Mr. S. Abbott, with *Devonensis*.

Plants and Cut Flowers, Prizes offered by the Torquay Horticultural Society:—

Group of plants arranged for effect on staging 12 feet by 3 feet, Orchids excluded.—1st, Mr. F. Ferris, gr. to J. W. Kimber, Esq.; 2nd, Mr. H. Dammerell.

Groups in which Orchids were included.—1st, Mr. G. Medland; 2nd, Mr. J. Sloman.

Twelve bunches stove and greenhouse cut flowers.—1st, Mr. G. Medland; 2nd, Mr. J. Sloman.

Six tuberous-rooted Begonias.—1st, Mr. F. Ferris; 2nd, Mr. S. Abbott.

CROYDON HORTICULTURAL.

JULY 1.—The twenty-fourth summer show of Roses, plants, fruits, and vegetables of the above Society was held in the grounds of Brickwood House, kindly lent for the occasion by J. W. Prince, Esq. The morning was rather unfavourable, heavy rain preventing many gardeners from bringing their exhibits; however, about midday the rain ceased, and the afternoon was unexpectedly fine. The arrangements for the exhibition were well carried out, three large tents being provided. The classes were numerous, amounting to over a hundred, special prizes being presented by nurserymen to the

extent of £10. On the whole, the show was a surprise to most people, as it far exceeded expectations; but there seemed to be fewer large specimens, and quality seemed to be the object aimed at, which was excellent. Several nurserymen had arranged groups not for competition, which helped considerably to improve the display, notably Messrs. J. Peed & Sons, John Box, J. Laing & Son, and J. Cheal & Sons.

Cut Flowers.—This division occupied nearly the whole of a large tent, the Roses being one of the chief features of the show, which, thanks to the comparatively cool moist weather of the last few days, were of splendid quality.

In the Nurserymen's classes, open, Messrs. W. Paul & Son, Cheshunt, Herts, were 1st, for forty-eight distinct varieties, and took the National Rose Society's Gold Medal; Mr. B. Cant, Colchester, was 2nd; and Messrs. D. Prior & Son, Myland Nurseries, Colchester, 3rd. The first two won in the order of their names, with twenty-four distinct, three blooms of each. Mr. G. W. Piper, Uckfield, Sussex, came 3rd. For twenty-four distinct, Messrs. Cheal & Sons, Crawley, were 1st; and Mr. Butcher, George Street, Croydon, 2nd. For eighteen Tea or Noisette, distinct, Mr. G. W. Piper, Uckfield, was the only exhibitor. For twelve Roses, one variety, 1st, Mr. B. Cant, with fine blooms of *Mdlle. Gabrielle Luizet*; and Messrs. D. Prior & Son, 2nd, with *Fisher Holmes*. For twelve Tea or Noisette, one variety, Mr. G. W. Piper, was again the only exhibitor.

In the Amateurs' and Gardeners' classes, open, a Challenge Cup was offered, in addition to the prizes for the best thirty-six Roses, distinct, which was won by Mr. Bradbury, gr. to Dr. S. P. Budd, Larkhall, Bath; Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Reigate, coming 2nd. For twenty-four Roses, distinct, E. M. Bethune, Esq., Denne Park, Horsham, was 1st, and R. E. West, Esq., Reigate, the 2nd. For six distinct, three of each, Mr. J. Bradbury was 1st, and A. H. Gray, Esq., 2nd, equal with Mr. J. Brown, Waterlow, Reigate. For twelve distinct, 1st, Mr. J. Bradbury; and 2nd, E. Wilkins, Esq., Lyndhurst, Sutton. For twelve Roses, one variety, 1st, Mr. J. Bradbury, with a fine box of *Marie Baumann*; 2nd, A. H. Gray, Beaulieu, Bath, with *Edith Gifford*. For eighteen Tea or Noisette, E. N. Bethune, Esq., was the only exhibitor. For six Tea or Noisette of one variety, A. H. Gray, Esq., was 1st, also winning the large Silver Flora Medal offered by the Royal Horticultural Society for the best Tea or Noisette in the Amateurs' and Gardeners' classes. For twelve Tea or Noisette, distinct, Mr. J. Bradbury came 1st, and Mr. J. Brown 2nd.

The National Rose Society's Silver Medal for the best Rose bloom in the Amateurs' and Gardeners' classes was won by Mr. J. Bradbury, with a fine bloom of *Horace Vernet*.

The competition in the local Rose classes was rather poor, but still some very good blooms were staged. C. J. Grahame, Esq., Coomb Lane, Croydon, showed the best six distinct blooms, and won the Challenge Cup for the year, and the National Rose Society's Silver Medal; Councillor Dart, Melrose Villa, Heathfields, came 2nd. For twelve distinct, C. J. Grahame was 1st; and the Rev. W. Wilks, Shirley Vicarage, was 2nd. For six Roses, one variety, Councillor Dart was 1st; and for six Tea or Noisette, C. J. Grahame came 1st, and J. De la Mare, Esq., 2nd. Mr. Grahame also winning the Royal Horticultural Society's Silver Flora Medal for the best Tea or Noisette in the local classes.

The twelve most graceful plants for table decoration were shown by Mr. Simmonds, gr. to C. H. Mayhew, Esq., Norwood Hill; included among them were *Pandanus Veitchii*, *Aralia Veitchii*, *Cocos Weddelliana*, *Dracena superba*, *Croton angustifolius*, C. Weismanni, &c. Mr. Lane, gr. to E. H. Coles, Esq., Burntwood, Upper Caterham, was 2nd.

Fruit.—With the exception of Grapes, there was very little fruit shown. In the open classes, some very fine Grapes were staged. Mr. G. Clinging, gr. to W. Greenwell, Esq., Marden Park, was 1st, for three bunches of black Grapes, followed by Mr. C. Blurton, gr. to H. Cosmo Bonser, Esq., M.P., Epsom, both showing Black Hamburgh. For three bunches of white, Mr. Playford, gr. to J. W. Prince, Esq., Brickwood House, with Buckland Sweetwater, was 1st, and Mr. Clinging 2nd. Mr. Clinging also came 1st for six dishes of fruit. Mr. A. G. Dangerfield, gr. to A. Steer, Esq., showed the best two bunches of Grapes in the class for single-handed gardeners.

Plants.—These were arranged in a large marquee that might have been much better filled, but good

quality reigned here as in every other part of the show. The quality was really exceptional in the plants for which Mr. King, gr. to P. Crowley, Esq., Waddon, received the *Gardeners' Magazine* Silver Medal for cultural skill (gardeners and amateurs only), in addition to the 1st prize offered for the nine best ornamental foliage, stove and greenhouse plants; among them were splendid plants of *Anthurium crystallinum* and *A. Warocqueanum*. Mr. H. Hazell, gr. to R. W. Mitchell, Esq., Fairfield, Bickley Park, came 2nd. Mr. W. King also showed the best nine stove and greenhouse plants in flower, including a fine plant of *Cymbidium Lowianum* with over forty blooms, and a well-flowered specimen of *Dipladenia boliviensis*. For a group of plants staged for effect, Mr. King was again 1st, followed by Mr. Scott, gr. to J. Aste, Esq., Ross Road, South Norwood.

The six best stove and greenhouse plants in flower were shown by Mr. H. Elsley, gr. to Capt. Wright, St. Peter's Road; and the six best ornamental foliage plants by Mr. Simmonds.

For six exotic Ferns, distinct, Mr. King was 1st with fine plants of *Davallia fijiensis*, *D. divaricata*, *D. Mooreana*, *Adiantum gracillimum*, *A. fragrantissimum*, &c.; also for six *Selaginellas*.

The tent set apart for the cottagers' exhibits, owing to the backwardness of the season, coupled with the wet morning, was rather poorly filled, but "very good" was the verdict given by all who saw them.

Obituary.

SIR GEORGE MACLEAY, K.C.M.G.—We regret to announce the death of this gentleman on the 24th ult. Sir George, who passed much of his time on the continent, had completed his eighty-first year, and died at the *Chalet de Rosiers*, at Mentone. He obtained government recognition for his services to the colony of New South Wales, and to Australia generally. Sir George came of a stock, various members of which were devoted to natural history, and of whom one was secretary to the Linnean Society many years since. The deceased gentleman was also an enlightened cultivator of art and science, and as an horticulturist was well known for the rarity and interest of the specimens exhibited from his rich collections at *Pendell Court*, near *Bletchingley*. Sir George was one of the early contributors to this Journal, and numerous plants from his garden have been published in our columns at various times.

MARKETS.

COVENT GARDEN, July 2.

Good business doing. Supply equal to demand. Outdoor Strawberries in good supply. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, each ...	0 4-0 6	Lettuces, per dozen ...	2 0-...
Beans, French, lb. ...	1 6-2 0	Mushrooms, punnet 2 0-...	...
Beet, red, per dozen ...	2 0-3 0	Mustard and Cress, punnet ...	0 4-...
Carrots, per bunch ...	0 6-...	Parsley, per bunch ...	0 4-...
Cauliflowers, each ...	0 6-...	Seakale, per basket ...	0 9-1 0
Celery, per bundle ...	2 6-3 6	Sballots, per lb. ...	0 6-...
Cucumbers, each ...	0 6-1 0	Spinach, per bushel ...	3 6-...
Endive, per dozen ...	3 0-4 0	Tomatos, per lb. ...	1 0-1 6
Herbs, per bunch ...	0 4-...	Turnips, per bun. new 0 9-...	...

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Aralia Sieboldi, doz. 6 0-18 0	Aspidistra, doz. ... 18 0-42 0	Foliage plants, various, each ...	2 0-10 0
— specimen plants, each ...	7 6-10 6	Fuchsia, per doz. ...	4 0-9 0
Bedding plants, variety, per doz. ...	1 0-2 0	Heliotrope, per doz. 4 0-8 0	Hydrangea, per doz. 9 0-18 0
Bouvardia, p. doz. ...	9 0-18 0	— paniculata, per plant ...	2 0-3 0
Cactus, per doz. ...	10 0-18 0	Ivy Pelargoniums, per dozen ...	4 0-6 0
Caladiums, per doz. 18 0-30 0	Calceolaria, p. doz. ...	Liliums, various, per dozen ...	18 0-30 0
Cineraria, per dozen 4 0-8 0	Cyperus, per dozen 4 0-12 0	Lobelia, per dozen ...	4 0-6 0
Dracena terminalis, per dozen ...	30 0-60 0	Marguerites, doz. ...	6 0-12 0
— viridis, per doz. 12 0-24 0	Eunymus, in var., per dozen ...	Mignonette, per doz. 4 0-9 0	Mask, per doz. ...
Ericas, various, per dozen ...	8 0-24 0	Myrtle, per dozen pots ...	6 0-12 0
Evergreens, in var., per dozen ...	6 0-24 0	Palms in variety, each ...	2 6-2 0
Ferns, in variety, per dozen ...	4 0-18 0	Pelargoniums, doz. 9 0-15 0	— scarlet p. doz. 4 0-9 0
Ficus elastica, each 1 6-7 0		Roots for bedding, in boxes, each, from 1 0-2 0	Spiraea, per dozen ...

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Apples, $\frac{1}{2}$ sieve ...	3 6-6 0	Lemons, per case ...	15 0-25 0
— Nova Scotia, brl. 15 0-25 0	— Tasmanian, case 12 0-14 0	Melons ...	1 6-3 0
Cobs, Kent, 100 lb. ...	35 0-40 0	Peaches, per dozen ...	3 0-12 0
Gooseberries, $\frac{1}{2}$ sieve 3 0-4 0	Grapes ...	Pine-apples, St. Michael, each ...	2 0 8 0
	1 6-3 0	Strawberries, per lb. 0 3-1 0	

NOTE.—Bananas, Cherries, and Apricots, being at present foreign importations, differ in price so greatly, according to quality and quantity on sale, that no trustworthy quotations can be afforded. Peas also vary in price every hour.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Athurium, 12 blms. 3 0-6 0	Arum Lilies, 12 blms. 2 0-4 0	Bouvardia, per bun. 0 6-1 0	Carnations, 12 bun. 4 0-6 0
Cloves, p. doz. blooms 0 6-1 0	Cornflower, 12 hoo. 2 0-3 0	Delphiniums, 12 blms. 3 0-6 0	Eucharis, per dozen 3 0-6 0
Gaillardias, 12 bun. ...	Gardenia, per doz. ...	Gladiolus, p. 12 bun. 4 0-12 0	Heliotropes, 12 spr. 0 6-1 0
Iris (various), 12 bun. 4 0-12 0	Lilac, best, p. bunch 4 0-6 0	Lilium Harrisii, doz. 3 0-4 0	Liliums, various, doz. 1 0-3 0
Maiden Hair Fern, 12 bunches ...	Marguerites, 12 bun. 3 0-6 0	Mignonette, p. bunch 0 4-0 6	Myosotis, 12 bun. ...
Orchids:— Cattleya, 12 blms. 6 0-18 0	Odontoglossum crispum, p. 12 blms. 3 0-9 0	Pansies, 12 bunches 0 6-1 0	Peonies, per dozen bunches ...
		Pelargoniums, scarlet, per 12 bun. 3 0-6 0	.. 12 sprays ...
		Pinks (various), per doz. bunches ...	Poppies, various, per doz. bunches ...
		Primulas, double, 12 sprays ...	Pyrethrum, 12 bun. 2 0-3 0
		Ranunculus 12 bun. 1 0-2 0	Roses, Tea, per doz. 1 0-3 0
		— coloured, dozen 2 0-4 0	— yellow (Marechal), per doz. ...
		— red, per dozen ...	Spiraea, per bunch ...
		Stocks, p. doz. bun. 3 0-6 0	Sweet Peas, 12 bun. 3 0-6 0
		Sweet Sultan, 12 bun. 3 0-4 0	Tuberose, per dozen blooms ...

ORCHID-BLOOM in variety.

NEW POTATOS.—Market very firm for all kinds. Jerseys, 10s. to 11s.; Cornish, 10s.; French, 9s. to 10s. Few small parcels of home-grown Kent, 10s.

OLD POTATOS.—£5 to £8 10s. J. B. Thomas.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.— Above (+) or below (—) the Mean for the week ending June 27.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Day-deg.	Day-deg.	ACCUMULATED.		10ths Inch.	Ins.	No. of Rainy Days since Jan. 1, 1891.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1891.
			Above 42° for the Week.	Below 42° for the Week.						
1	6 +	129	0	+ 92	+ 79	1 —	165	20.1	47	32
2	2 +	108	0	— 65	+ 101	2 —	69	8.6	42	32
3	1 +	109	0	— 94	+ 95	4 —	75	7.7	33	30
4	3 +	137	0	— 68	+ 128	2 +	81	8.5	38	32
5	3 +	135	0	— 39	+ 116	3 +	76	10.3	27	31
6	2 +	139	0	— 66	+ 149	5 +	72	10.3	38	36
7	7 +	149	0	+ 70	+ 46	aver	78	13.6	50	34
8	5 +	141	0	+ 14	+ 37	6 +	70	9.9	38	31
9	3 +	139	0	— 24	+ 118	2 +	73	12.8	40	38
10	6 +	146	0	+ 10	+ 28	1 —	89	10.5	50	33
11	5 +	142	0	+ 29	+ 31	3 +	81	12.5	48	36
12	2 +	139	0	— 13	+ 40	3 —	79	11.5	48	47

The districts indicated by number in the first column are the following:—
Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending June 27, is furnished from the Meteorological Office:—
"The weather remained fine and dry over the northern and north-western parts of the Kingdom until nearly the end of the week, but in all other localities the conditions became changeable and unsettled soon after the period commenced. Thunderstorms were experienced from time to time in the more southern districts, and on the 26th and 27th in Scotland,

"The temperature has continued above the mean, the excess having varied between 1° and 3° in most parts of the country; in 'England, N.W.' and 'Ireland, S.,' however, it has been 5°; in 'Scotland, N.,' and 'Ireland, N.,' 6°; and in 'Scotland, W.,' as much as 7°. The highest of the maxima, which were recorded on rather irregular dates, ranged from 83° in 'Ireland, N.,' and 80° or 81° in Scotland and over central and eastern England, to 73° in the 'Channel Islands.' The lowest of the minima were generally registered either on the 21st or 22nd, and varied from 41° in the 'Midland Counties' and 'England, N.W.,' to 49° in 'England, E.,' and 53° in the 'Channel Islands.'

"The rainfall has been less than the mean in the east of England, the north and east of Scotland, in 'Ireland, N.,' and the 'Channel Islands,' and has equalled the normal in 'Scotland, W.;' in all other districts a rather decided excess is shown. The rainfall during the 25th was extremely heavy in some parts of central England.

"Bright sunshine has exceeded the mean in Ireland and Scotland, but has not materially differed from it over England. The percentage of the possible duration has ranged from 50 in 'Ireland, N.,' and 'Scotland, W.,' and 48 in 'Ireland, S.,' and the 'Channel Islands,' to 33 in 'England, N.E.,' and 27 in the 'Midland Counties.'"

NOTICES TO CORRESPONDENTS.

ALICANTE GRAPES: J. W. C.—If the Grape-room in which the bunches were placed was cool, dry, and dark, with a very equable temperature, Grapes with thick skins would keep in a fairly good condition for five or six months; but under the most favourable conditions they would have lost in flavour, colour, and weight. But you must show the bunches cut in January at the forthcoming Chiswick Conference, on July 8, as they will doubtless create much interest amongst gardeners and others.

BOOKS: FRUIT GROWING IN AUSTRALIA: H. W. For the more temperate parts of the country, where Apples, Pears, Plums, Cherries, Quinces, Peaches, Apricots, and the Vine will succeed under orchard culture, any good gardening book. Thompson's *Gardener's Assistant*, Mackintosh's *Book of the Garden*, and Dr. Hogg's *Fruit Manual* would answer every purpose. In Queensland, many fruits tropical and semi-tropical will grow, and a useful manual to get would be, *Cultural Industries of Queensland*, by Lewis A. Berdays (Jas. C. Bell, Government printer, Brisbane); *The Reports of the Acclimatisation Society of Queensland*, and *The Proceedings of the same.*—R. S. *The Tomato; its Culture and Uses*, by W. Iggulden (171, Fleet Street, London, *Journal of Horticulture* office).

BROCCOLI: J. M. The white flowers observed were as usual not properly formed, whilst the yellow ones were fully developed.

CLEMATIS: W. H. R. Petals are but leaves arrested in their development, and proportionately modified in structure. Sometimes the course of events does not run smoothly, and then we get such intermediate forms as you are good enough to send.

CUCUMBERS DYING: E. A. H. The loss of the fruits when 2 inches long may be due to want of warmth at the root, or too much ventilation, or to eel-worms being present at the root. We cannot say which, in the absence of any samples of root or foliage, or particulars of treatment.

CUTTING A PORTION OF THE SHOOT WITH THE BUNCH OF GRAPES: H. B. P. To do this always improves the look of the bunch when this is placed whole on the dessert dish. Of course, if your housekeeper, in the fulness of her knowledge, chooses to cut up the bunch into little bits, the morsel of wood from the Vine becomes a minus quantity. When a bunch has to be kept for a time, it is always best to take a piece of the shoot—say 3 inches long—with it. Doing this rather benefits the future fruit-buds at its base, by lessening by one or two buds with each bunch the calls on the resources of the Vine. Many good gardeners shorten back all the laterals which have borne bunches, to a point 6 inches from the stem on Vines managed on the short spur method, and shorten back somewhat the lengthy shoots of Vines grown on the opposite system.

FUNGUS ON MUSHROOM BED: A. M. This fungus was named by us in the *Gardeners' Chronicle*, May 30, p. 685, under the initials "T. N. R.," *Sclerotium of Xylaria vaporaria*.

GRAPES: H. R. H. The berries are shanking in a wholesale manner. A state of things arising from defective root-action, which itself may be due to the soil having got into a bad state. Over-cropping will sometimes cause it, as also large denudation of leaves.

LETUCES FOR CUTTING IN THE WINTER: *Old Subscriber*. The best for lifting and planting in frames, when about half-grown, are All-the-Year-Round and Hammersmith Hardy Green Cabbage varieties, and Brown Bath, Hicks' Hardy White, and Paris Green Cos varieties. The idea is to plant compact-growing Lettuces, which may stand pretty close together, and which do not possess much superfluous leafage. Almost any kind of Lettuce may be sown thinly in winter in a hot-water-pit, on loamy soil, overlying a bed of tree leaves and manure, made up but a few inches below the pit-lights, and will afford a large quantity of tender leaves, which may be eaten as salad without being blanched.

NAMES OF PLANTS: R. C. B. *Lonicera Ledebourii*.—W. U. 1, *Barbarea vulgaris* fl.-pl.; 2, *Magnolia acuminata*; 3, *Heuchera*, send in flower; 4, *Euphorbia cyparissias*; 5, *Saxifraga longifolia*.—G. W. *Veronica Teucrium* var. *latifolium*.—H. Corder. *Gloire Lyonnaise*.—A. P. C. *Acrides virens*; *Dendrobium secundum*.—Weir. 4, *Ligustrum japonicum*. We cannot undertake to name Privets unless flowers and strong pieces are sent. E. W. G. *Geranium pratense*; *Spiraea japonica*; *Pyrethrum rosenum* var.—*Bellis*. 1, *Juniperus Sabina*; 2, *Allium Moly*; 3, *Dactylis glomerata* var.; 4, *Alchemilla alpina*; 5, *Salvia pratensis*; 6, *Lonicera caprifolium*.—G. B., *Helechrop*. 1, *Euphorbia Lathyris*, *Caper-spurge*; 2, *Cephalotaxus pedunculata* var. *fastigiata*, alias *Podocarpus Koraianus*; 3, *Lycasteria formosa*; 4, *Rhinanthus Crista-galli*; 5, *Pavia flava*; 6, *Cephalotaxus drupacea*.—H. W. 1, *Kalmia angustifolia*; 2, *Rhododendron ferrugineum*; 3, *Kalmia latifolia*.—J. W. 1, *Olearia Gunniana*; 2, next week; 3, *Symphytum caucasicum*.—*Old Subscriber*. 1 to 4, garden Pinks; 2, which we cannot name; 5, *Muscari comosum*; 6, *Zephyranthes rosea*.—Gordon. White flower, *Ornithogalum arabicum*; leaf, *Cyrtodeira chontalense*.—J. F. *Lycasteria formosa*.—P. A. Probably *Crataegus tanacetifolia*; send when in fruit.—*Iles*. 1, *Brassia verrucosa*; 2, *Anthericum lineare variegata*; 3, *Gymnogramma ochracea*; 4, *Lygodium japonicum*; 5, *Trachelospermum jasmiuoides*.—J. C. H. 1, *Veronica pinquifolia*; 2, *Sedum hispanicum* alias *glaucom*; 3, *Dianthus superbus*; 4, *Saxifraga cuneifolia*; 5, *Potentilla*; 6, *Myosotis azorica*.

RED ANTS AMONGST THE ROOTS OF CATTILEYAS AND CYPRIPEDIUMS: *Young Gardener*. Can you not drive the creatures out by soaking the plants in a cistern of water, leaving them therein for 30 minutes; or try *Pyrethrum* powder.

SPRUCE GALL: F. W. B. The work of *Chermes abietis*, frequently figured in our columns. The fullest account is in the *Gardeners' Chronicle*, 1874, p. 635; see also 1879, p. 248.

TOADS IN THE FORCING-HOUSE: A. B. They are greedy devourers of many kinds of insects injurious to plants, and should be made more use of. They are especially useful in Mushroom-houses and other places much infested by woodlice.

TOMATOS IMPORTED INTO GREAT BRITAIN: R. S. There is no official record of the quantity.

VINES: *Interested*. Kindly send specimens of leaves, shoots, and fruits, both healthy and unhealthy.

DIED.—We regret to announce the death, on the 21st ult., of Mr. CHARLES PENNELL, nurseryman, of Lincoln. Mr. Pennell, who had, during his management of the business, greatly extended it, and added new nurseries to those already existing, retired some time ago in favour of his sons.

COMMUNICATIONS RECEIVED.—F. W. B.—E. M.—R. Gisson.—G. W. Cosens.—H. G.—T. Mawson.—H. Wheatley.—W. Crump, too late.—H. F. G.—Ransomes, Sims & Jefferies.—J. Carter & Co.—Sutton & Sons.—W. G.—J. A.—W. R.—W. A. C.—E. Webb & Sons.—Wild Rose.—C. V. R. (Report of the *Entomologist* for 1890).—22nd Annual Report of the Fruit Growers' Association of Ontario.—H. C. Geneva.—E. Benary, Erfurt.—A. B. MD.—W. R.—E. C.—G. H.—F. V. D.—A. D. W.—Capt. Oliver.—J. B.—J. L.—W. A. C.—Adolescenex.—R. A. R.—W. G.—G. W. C.—J. J. W.

The People's Fireside Journal this week contains articles on Deafness and Noises in the Head—Baldness—How to Bring Gray Hair to its Original Colour—Writers wanted at their Homes, evenings—Serial Story—List of Fortunes in Chancery—Electro-Medication, being a new system of curing all diseases at the Patient's Home—Splendid Illustrations—A Happy Home—How to get a Wife or Husband with a Fortune—An Exchange Column Free. All Newsagents and Smith's Stalls, 1d. Post Free, 2d., from 59, Newman Street, London, W.—ADVT.

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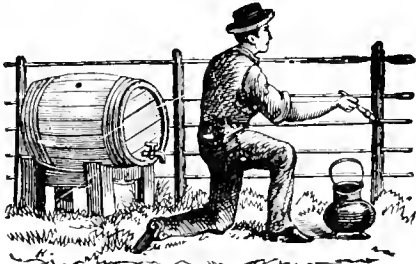
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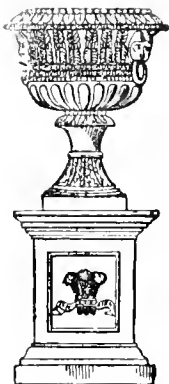
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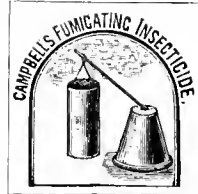
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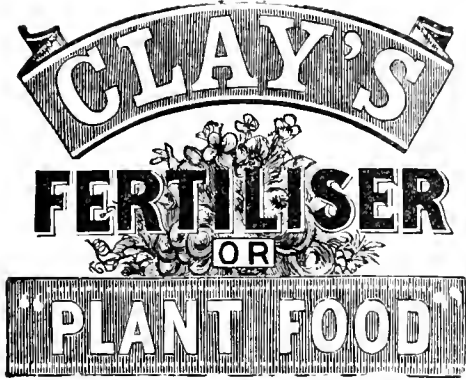
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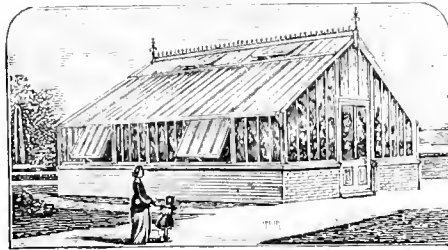
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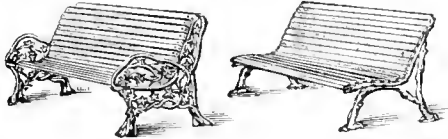
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CASTLE HILL WORKS, NEWCASTLE, STAFFORDSHIRE,
Original Makers of

STEVENS' TRENTHAM RIVETED BOILERS

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SILVESTER'S TRENTHAM and other Boilers,
HEATING APPARATUS ERECTED COMPLETE.
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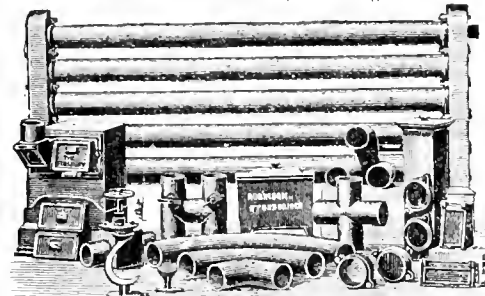
21-oz. and 15-oz. Foreign, of above sizes, in boxes of 100 feet and 200 feet super.

English Glass, cut to buyers' sizes, at lowest prices, delivered free and sound in the country, in quantity.

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LEAD, GLASS, OIL, and COLOUR MERCHANTS,
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Stock Lists and Prices on application. Please quote Chronicle.

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EXPANSION JOINT HOT-WATER PIPES,
SOCKET HOT-WATER PIPES.
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CHEAPEST W. PEN DENNIS & CO. BEST
GARDENERS' POTTERIES, RUABON.

100 000 yards to select from.
EXTRA STOUT strong-tanned NET, 2 yards wide, 1 1/2 yard; 4 yards wide, 3d. yard; or 2 yards wide, 10s. per 100; 4 yards wide, 20s. per 100 yards. **NEW TWINE NETTING**, 1 yard wide, 2d. yard; 2 yards wide, 4d. yard; 4 yards wide, 8d. yard; 12 yards wide, 2s. yard. **COTTON NET**, nine meshes to square inch, 1 1/2 yards wide, 7d. yard run.
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THE BEST SILVER SAND and PEAT in England for Sale, in truck-loads, and less lots, loose or in bags.—W. SHORT, Horticultural Co., Midhurst, Sussex.

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS.—The Registered Address for Foreign and Inland Telegrams is “Gardchron, London.”

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Scale of Charges for Advertising.
Head Line charged as two.

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GARDENERS AND OTHERS WANTING SITUATIONS. 26 words, including name and address, 1s. 6d., and 6d. for every additional line (about nine words) or part of a line. These Advertisements must be prepaid. This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale. Births, Deaths, and Marriages, 5s. each insertion.

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POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to A. G. MARTIN, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by **POST-OFFICE MONEY ORDER.**

Advertisements for the current week MUST reach the Office not later than Thursday noon. All Advertisements should be addressed to the PUBLISHER. Publishing Office and Office for Advertisements, 41, WELLINGTON ST., STRAND, W.C.

SUBSCRIPTIONS.

All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d.; 3 months, 3s. 6d. Foreign (excepting India and China), including Postage, 17s. 6d. for 12 months; India and China, 19s. 6d. Post-office Orders to be made payable at the Post-Office, 42, Drury Lane, W.C., to A. G. MARTIN.

Subscribers who experience any difficulty in obtaining their Copies regularly, are particularly requested to communicate with the Publisher (in cases of delay in the delivery by post, the cover should be forwarded with complaint).

Cheaper Edition now ready.

A BOOK ABOUT ROSES. By the Very
Rev. S. REYNOLDS HOLE, Dean of Rochester.
Eleventh Edition. Cloth, 2s. 6d.
London: EDWARD ARNOLD, 37, Bedford St., Strand, W.C.

FARMS, ESTATES, RESIDENCES.

Any one desirous of
Renting a Farm or Residence, or Purchasing an
Estate, can have copies of the

MIDLAND COUNTIES HERALD

SUPPLIED FREE FOR SIX WEEKS,

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required, forwarding Name and Address, and six
halfpenny stamps for postage, addressed, "*Mid-
land Counties Herald* Office, Birmingham." The
Midland Counties Herald always contains large
numbers of advertisements relating to Farms,
Estates, and Residences for Sale and to be Let.

THE SYDNEY MAIL, AND NEW SOUTH WALES ADVERTISER.

CONTENTS:—

INTERCOLONIAL and GENERAL NEWS.
SPORTING and the FIELD, in which is incorporated BELL'S
LIFE IN SYDNEY.
RECORD of RACES, and NOTES on the TURF.
CRICKET and AQUATICS.
THE FLORA of AUSTRALIA. (Drawn and engraved especi-
ally for this Journal.)
NATURAL HISTORY. (Original Articles.)
AGRICULTURE, PASTORAL, HORTICULTURE.
GOLD FIELDS and MINING generally.
STOCK and SHARE REPORTS.
ORIGINAL and SCIENTIFIC ARTICLES.
TALES by POPULAR ENGLISH and AUSTRALIAN
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Single Copies, *id.*; Stamped, *7d.*

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The undermentioned Newspaper and Advertising Agents are
authorised to receive ADVERTISEMENTS for the
SYDNEY MORNING HERALD and SYDNEY MAIL:—

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BRISTOL James and Henry Grace, Royal Insurance
Buildings.
MANCHESTER..... James and Henry Grace, 73, Market Street.
EDINBURGH ... Robertson & Scott, 13, Hanover Street.
GLASGOW W. Porteous & Co., 15, Royal Exchange
Place.

Copies of each Journal are filed at the
above Offices for the use of Advertisers.

GARDENING APPOINTMENTS.

MR. WILLIAM HUGH, for the last four years
Foreman of the Orchid Department, Woolton
Wood, near Liverpool, succeeds the late Mr. G.
Beddoes, as Gardener to E. G. WINDLEY, Esq.,
Howick House, Preston.

MR. JOSEPH LEE, late Foreman at Highbury,
Birmingham, as Head Gardener to Earl Howe,
Gopsal Hall, near Leicester.

MR. G. CYRIL, until recently Gardener to
Mrs. Studd, Bath, as Gardener to Sir J.
Dorington, Bart., M.P., Lypiatt Park, Stroud.

MR. W. SEABROOK, as Gardener to Lord DE
RAMSEY, Ramsey Abbey, Hunts. He was pre-
viously Foreman for several years in the garden
of CYRIL FLOWER, Esq., M.P., Aston Clinton.

MR. H. DOWDING, formerly Gardener at Little
Gaddesden House, Berkhamstead, as Gardener
to the Bishop of WINCHESTER, Farnham Castle,
Surrey.

BOILING WATER OR MILK.

E P P S'S
GRATEFUL-COMFORTING.
C O C O A
BREAKFAST OR SUPPER.

WANTED, a WORKING MANAGER, for
a large Market Nursery.—Must be well up in Soft-
wooded Plants, Cut Bloom, and Fruit. Must have the highest
references; not under 20.—Address, MARGUERITE, *Gardeners'
Chronicle* Office, 41, Wellington Street, Strand, W.C.

**WANTED, a good HEAD WORKING GAR-
DENER.**—Can any Lady or Gentleman recommend a
good man as above. Must thoroughly understand Kitchen and
Flower Gardens, and be practical in all branches. Three
houses; one Under Gardener. Wages £1 per week, with
cottage, vegetables, and milk.—Address, Mrs. MANGLES,
Valewood, Haslemere, Surrey.

WANTED, a WORKING GARDENER.
One who has had experience of the Cultivation of
Flowering Plants for Market, and of Vegetables. State age,
salary expected, &c., to GEORGE COOPER, Seedsman,
Bedford.

WANTED, a SECOND GARDENER, who
understands Inside and Outside Work. Age 24.
Wages, £1 1s. per week.—W. ELLIS, The Gardens, Netterby,
Weybridge.

REQUIRED, as UNDER GARDENER, a
strong, active, young Man; one who is accustomed to
and thoroughly understands the management of Cows pre-
ferred.—Apply, stating age, experience, and wages asked, to
R. HUNTER, Meadfield, Haslemere.

Foreman in Market Garden.
**WANTED AT ONCE, a WORKING
FOREMAN,** to Manage Houses and Superintend
Garden.—Must understand growing Fruit, Flowers, and
Vegetables for Market.—Write, stating age, wages, &c., to
HEWLETT, Heathfield, Sussex.

**WANTED, a FOREMAN for Florist's Busi-
ness,** in N.W. district of London. Must be well up in
the value of all kinds of Plants and Nursery stuff. Will be
required to act as Buyer and General Superintendent of the
business in all its branches. First-class references for com-
petency and other requirements indispensable.—Address, by
letter only, to C. M., 61, Pall Mall, S.W.

**WANTED, a young MAN as CARNATION
GROWER.** Good character indispensable.—L. U.,
Gardeners' Chronicle Office, 41, Wellington St., Strand, W.C.

**WANTED, a PROPAGATOR, for Outside
Stuff, medium-sized Nursery.** A good all-round man,
with varied experience. Married.—Apply by letter, in con-
fidence, to A. N. E., 41, Wellington Street, Strand, W.C.

**WANTED, in a Market Nursery, a young
MAN (single), accustomed to Growing Soft-wooded
Stuff, Tomatoes, and Melons.** Thoroughly good references
required. State age, and wages asked.—MARSHALL BROS.
AND CO., Barnham Nursery, Bognor.

**WANTED, a strong active YOUTH, having
some experience of Gardening.** Must be well recom-
mended. Wages, 12s. per week, bothy, milk, and vegetables.
Premium required.—A. BARKER, Adaire Manor, Limerick.

**WANTED AT ONCE, a strong active young
MAN, of good experience, as Flower Garden Foreman.**
Also TWO young MEN as assistants in Flower Garden.—Apply
by letter, stating age and experience, to JAMES VEITCH AND
SONS, Royal Exotic Nursery, Chelsea, S.W.

**WANTED, an energetic young MAN, to look
after the Flower Garden and Pleasure Grounds.** Bothy,
light, and firing provided.—State wages, &c., to E. WHEELER,
The Gardens, Moray Lodge, Campden Hill, Kensington, W.

**WANTED, TWO or THREE good HANDS
at Layering Carnations.**—E. GIFFORD, Montague
Nursery, White Hart Lane, Tottenham, N.

**WANTED, IMMEDIATELY, young MAN
for Soft-wood Department, as Propagator and Grower,**
a good Salesman, and an efficient hand at Wreaths, Ronquets,
&c. Wages and particulars to W. B. ROWE & CO. (Limited),
Barbours Nursery, Worcester.

**WANTED, IMMEDIATELY, TWO or
THREE young MEN, used to growing Cucumbers;**
wages, 18s. per week; send references.—35, Queen St., Cardiff.

**WANTED, young MAN, used to Indoor
and Outdoor; quick at Potting, and good Spade-man;**
age, about 18.—State wages, &c., to COLLINS AND GABRIEL,
Waterloo Nurseries, Hampton-on-Thames.

**WANTED, young MAN for Houses, under
the Foreman.** One who has had some experience.
Terms, 12s. per week and bothy.—G. W. EDEN, Henham
Gardens, Wargford.

**WANTED, AT ONCE, a young MAN, age
about 18, for the Kitchen Garden and Fruit Trees.**
To live in bothy.—Apply, stating references and wages re-
quired, to G. C. MAYNARD, Cole Orton Gardens,
Ashby-de-la-Zouch.

WANTED, a young MAN, in the Houses,
used to Loodon Market.—Apply, stating age and
experience, to G. LANGE, Chambery, Hampton, Middlesex.

**WANTED, a young MAN, used to handling
and propagating large quantities of soft-wooded
Plants; must be very quick, willing, and obliging.**—Apply,
stating wages, to JOHN GREEN, Norfolk Nurseries, Dereham.

**WANTED, a GARDEN LABOURER, one
used to a mowing machine.**—H. K. SEAMONS,
Oxley Manor Gardens, Wolverhampton.

WANTED, a good GARDEN LABOURER;
middle-aged; wife to manage Dairy and Poultry.
House in Garden; Children objected to.—Address Mr.
QUINTER READE, Whitton Lodge, Rugby.

**WANTED, a strong YOUTH, with some
knowledge of Potting and Waterlog Plants, chiefly
for the Houses.**—H. HUNT, Florist, Sutton-on-Trent, Newark,
Notts.

**WANTED, a good ESTATE CARPENTER,
age from 30 to 40, who has been accustomed to Re-
pairing Horticultural Buildings, and all kinds of Work on a
Gentleman's Estate, both Inside and Out.** Wages, 25s. per
week, with good House and Garden.—J. MARTIN, Barcote,
Faringdon, Berks.

**WANTED IMMEDIATELY, a trustworthy,
capable MAN, with good references as to character
and ability, middle-aged preferred, as Invoice Clerk and to
take charge of Seed Shop (small retail trade), executing
wholesale orders for choice Seeds, &c., and superintending clean-
ing of same (with youth and boy under him). Must write
well, and understand names of plants and seeds. Hours 6 to
6 in summer, 7 to 7 in winter. First-class Nursery Seed
Establishment in West of England. A good opening for a
trustworthy obliging man requiring a permanency. State
wages required and all particulars in first letter, to STERLING,
Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

**WANTED, a NURSERY CLERK; a good
Correspondent and accurate in figures; a good Sales-
man; able to take charge during the absence of Nursery
Manager.**—Applicants will kindly state age, salary expected
with references as to ability and character.—WM. FELL AND
CO., The Royal Seed Nursery Establishment, Hexham,
Northumberland.

WANTED, a JUNIOR CLERK.—Apply,
stating wages required and full particulars, to
B. L. COLEMAN, Seed Merchant, Sandwich, Kent.

WANT PLACES.

Advertisers are cautioned against having letters
addressed to initials at Post-offices, as all
letters so addressed are opened by the
authorities and returned to the sender.

**THE LIVERPOOL HORTICULTURAL
CO. (JOHN COWAN), Limited, The Vineyard and Nur-
series, Garston, Liverpool, are in a position to recommend a
first-rate man as HEAD GARDENER, or GARDENER and
BAILIFF; also a thoroughly competent man as HEAD GAR-
DENER, who has a good knowledge of Orchids; unexceptional
references in each case.**

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**DICKSONS, Royal Nurseries, Chester
(Limited), are always in a position to RECOMMEND
MEN of the highest respectability, and thoroughly practical
at their business. All particulars on application.
Telegraphic and Postal Address—"DICKSONS, CHESTER."**

**RICHARD SMITH AND CO.
beg to announce that they are constantly receiving
applications from Gardeners seeking situations, and that
they will be able to supply any Lady or Gentleman with
particulars, &c.—St. John's Nurseries, Worcester.**

**THOMAS BUTCHER can recommend several
HEAD and UNDER GARDENERS of first-rate character
and proved ability. Gentlemen seeking such may have par-
ticulars free.—Apply to THOMAS BUTCHER, Seed Merchant
and Nurseryman, Croydon.**

**SANDERS, St. Albans, can thoroughly
RECOMMEND several first-class HEAD GARDENERS.**

**B. S. WILLIAMS and SON beg to intimate
that they have at present in their Nursery and upon
their Register some excellent Men, competent either to fill
the situation of HEAD GARDENER, BAILIFF, FOREMAN,
or JOURNEYMAN. Ladies and gentlemen requiring any of
the above will please send full particulars, when the best
selections for the different capacities will be made.—Victoria
and Paradise Nurseries, Upper Holloway, N.**

**SCOTCH GARDENERS.—I have at present
several very superior MEN on my Register, whose char-
acter and ability will bear the strictest investigation.—
JOHN DOWNE, Seedsman, 141, Princes Street, Edinburgh.**

**GARDENER (HEAD), or GARDENER and
BAILIFF.**—Twenty years' reference; thoroughly under-
stands Gardening in all its branches; married, no children;
Scotch.—W. GRAY, 35, Richmond Place, Broughton, Chester.

**GARDENER (HEAD).—J. W. SILVER, can
with the utmost confidence recommend an exceptionally
high-class man, as above; of long experience in Fruit and
Plant growing, and the general management of a large
establishment. The highest references as to both character
and ability.—Streatham and Norbury Nurseries, London, S.W.**

GARDENER (HEAD).—Age 41; thoroughly experienced in all branches, including early and late Forcing and the management of a good establishment. Fifteen years recommendation from present employer. — E. SANDFORD, Dale Park, Arundel.

GARDENER (HEAD). where three or four are kept.—Age 28, married when suited.—Mr. A. G. CATT, Hallow, Worcester, can with confidence recommend a man as above. Good Orchid Grower and general Gardener. Address as above.

GARDENER (HEAD WORKING). — Age 28, has had thorough experience in all departments, and can be highly recommended by present and previous employers.—J. CHEAL AND SONS, The Nurseries, Crawley.

GARDENER (HEAD WORKING), where two or more are kept.—Age 30, married when suited; fifteen years' experience in all branches of the profession, Good references.—ASHWELL, Woodford House Gardens, Thrapston, Northants.

GARDENER (HEAD WORKING).—Age 36; married. Thoroughly practical in all branches. Seven years' character from present employer, and seven previous at Arundel Castle Gardens. Catholic.—W. B., The Den, Pognor, Sussex.

GARDENER (HEAD WORKING).—Age 32, married, one child.—Colonel POWELL wishes to recommend his late Gardener to any Lady or Gentleman requiring a thorough practical man in all branches. Left at own request.—MINTON, 32, Elgin Terrace, Maida Vale, London, W.

GARDENER (HEAD WORKING), or thorough good SINGLE-HANDED.—Age 27, married.—First class character for Grapes, Peaches, &c., Stove and Greenhouse Plants, Flower and Kitchen Gardens.—H., Mrs. Rowman, Garrat Lane, Tooting, S.W.

GARDENER (HEAD WORKING), where one or two are kept.—Age 24, married when suited; engagement required by the beginning of September; thorough knowledge of Early and Late Forcing; also Fruit, Flower, and Vegetable Garden. Successful Prizetaker. Life experience. Five years' first class character and excellent references.—Letter direct to J. J. A., 22, Percy Circus, King's Cross, W.C.

GARDENER (HEAD WORKING), where one other is kept.—Age 30, single; thoroughly practical and reliable with Glass, Flower and Kitchen Gardens. Four years' references.—F. WALKER, Rose Cottage, Stonegrove, Edgware.

GARDENER (HEAD WORKING).—Age 42, married; for the last nine years Head at Burnt Wood Hall, Barstey; is at liberty to treat with any Nobleman, Lady, or Gentleman as above.—SLEIGHTHOLM, Prospect Nurseries, Milford, Yorks.

GARDENER (HEAD WORKING); age 31, married, no family.—A GENTLEMAN can highly recommend the above. Five and a half years' character.—T. W., 20, David's Road, Forest Hill, S.E.

GARDENER (HEAD WORKING), or **GARDENER AND BAILIFF.**—Age 49; married, one girl, age 13. Thoroughly competent in all branches. Thirteen years' excellent character from last employer. Total abstainer. T. H. HILL, 42, Colegrave Road, Stratford New Town, Essex.

GARDENER (HEAD WORKING).—Age 40; married, no family. Thoroughly experienced in all branches. Wife can undertake Laundry if required. Good references.—J. SEAGER, Hare Street, Romford.

GARDENER (HEAD WORKING); married, no family.—Advertiser will be pleased to treat with any Lady or Gentleman requiring the services of a good practical all round man. Six years' excellent character, with references.—G. EUNTON, 1, Eva Cottage, Camp Road, St. Albans.

GARDENER (HEAD WORKING); Age 40.—F. PAY, late Head Gardener to Lord Tennyson, seeks a situation as above. Thoroughly experienced in all branches. Married, no family. Wife thorough laundress, if required.—Efford House, Lymington, Hants.

GARDENER (HEAD WORKING, or SINGLE-HANDED).—Age 31; married, no family; experienced in all branches.—J. DIGBY, Dudbrook, Brentwood, Essex.

GARDENER (HEAD, or SINGLE-HANDED).—Age 30, married; six years in Duke of Bedford's gardens, three in present situation. Good characters from both.—W. H. KEEN, 33, Howard Street, Bedford.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 36; married, no family. Understands the general routine of Gardening. Seven years' good character.—E. CROCKFORD, Conaway's, Ewell, Surrey.

GARDENER (SINGLE-HANDED).—Age 28, married; Abstainer. Twelve years' experience. No objection to Pony and Trap.—GARDENER, 23, Balcombe Street, South Hackney, N.E.

GARDENER (SINGLE-HANDED).—Age 25, married when suited; experienced in Vines, Melons, Cucumbers, Tomatoes, Kitchen Garden, and Pleasure Grounds.—W., 193, Livingstone Road, Thornton Heath, Surrey.

GARDENER (SINGLE-HANDED), or otherwise.—Age 29; thirteen years' experience. Good references. G. L., The Hope, Merton Road, Merton.

GARDENER (SINGLE-HANDED, or where help is given).—Age 25, single. Six years' good character.—A. M., 7, Waverley Terrace, Harrow Road, Paddington, W.

GARDENER (SINGLE-HANDED), or where two or more are employed; age 31, married.—A GENTLEMAN wishes to recommend a young Man who has worked for him in Flower and Kitchen garden and Greenhouse about seven years, as above.—Apply to J. JEFFERIES, Esq., 49, Park Hill Road, Croydon.

GARDENER (SINGLE-HANDED, or SECOND); Inside and Out preferred.—Age 25; strictly temperate; two-and-a-half years in last situation; good characters.—J. B., The Poplars, Brookfield Lane, Cheshunt.

GARDENER (SECOND, or SINGLE-HANDED). Age 25; understands Vines, Peaches, Melons, Stove and Greenhouse Plants, and Kitchen Garden; three years' good character from present place.—S. LEPPARD, Sanderstead, near Croydon, Surrey.

GARDENER (SECOND), in small Establishment, or SINGLE-HANDED.—Age 25, single; one year and ten months' good character. Total abstainer.—H. WAYLING, 6, Oliver Cottages, Brook Lane, Cheshunt, Herts.

GARDENER (SECOND), or otherwise.—Age 24, single.—Inside and Out preferred. Good character.—T. MILLS, C. Collins, Buscombe, near Godalming, Surrey.

GARDENER (SECOND, or SINGLE-HANDED). Age 25; experienced in Kitchen Garden, Greenhouses, and Pleasure-grounds, Good hand with Scythe. Good references.—J., 193, Livingstone Road, Thornton Heath, Surrey.

GARDENER (SECOND).—Age 26; twelve years' experience Inside and Out.—W. O., Gardener, Cottage, Five Fields, Dulwich, S.E.

GARDENER (SECOND, or SINGLE-HANDED).—Age 25; nine years' experience. Inside and Out. Good characters from previous places.—J. TERRY, 32, Waddon Old Road, West Croydon.

GARDENER, FOREMAN, or SECOND in a good establishment.—Age 25, single; twelve years' experience Inside and Out. Well up in Vines, Melons, Cucumbers, Stove and Greenhouse Plants, also Chrysanthemums. Good reference from present employer.—H. MASON, The Gardens, Hampton, near Tonbridge, Kent.

GARDENER.—Age 29; well up in Vines, Melons, Cucumbers, Tomatoes, and Flower and Kitchen Gardens; five years' good reference; left through employer giving up.—C. MASON, 67, Milton Street, Southend, Essex.

GARDENER (THIRD, or UNDER).—Age 20; four years' experience Inside and Out. Eight years' good character. State particulars.—A. MOORE, Lynsted, near Sittingbourne.

GARDENER (UNDER).—Age 20. Houses preferred. Three years' experience Inside and Out. Good character. Abstainer.—A. H., 9 Dulka Road, Battersea Rise, London, S.W.

GARDENER (UNDER), Inside and Out.—Age 21.—A. HEWITT, 11, Upernie Road, Chelsea, S.W.

GARDENER (UNDER), Inside and Out.—Age 21; four years in last situation. Excellent character.—R. J. SARGENT, 1, Napier Cottage, Hanger Hill, Ealing.

GARDENER (UNDER), as IMPROVER in Houses.—Age 20; strong and active. Good Pleasure and Kitchen Garden experience. No objection to Inside and Outside.—G. BURN, Ampfield, Romsey, Hants.

PALM and FERN GROWER; Furnishing General Trade.—Age 28. Good character and references.—T. R., 7, Hursey Lane, Newington Green, N.

GROWER, age 25.—Twelve years' experience in growing Roses, Ferns, Choice Pot and Cut Stuff, Grapes, Peaches, &c.—T. FRY, Holland Cottage, Cranworth Road, Worthing.

Nursery Foreman.

W. BERKSHIRE, for thirteen years General Foreman to J. Laing & Sons, Forest Hill, and twelve years with the late W. Hollis & Sons, of Tooting, is now open to an engagement as Nursery Foreman, or Manager.—Vineyard Nursery, Cufford Hill, S.E.

FOREMAN.—Age 27, single, but married if required; twelve years' experience in all branches. Four years as Foreman in last place. Has an excellent character from last employer.—S. BROOKS, 2, Cromwell Cottages, Cheshunt, Herts.

FOREMAN, in the Houses, age 24.—Mr. POTTER, St. Clare, Kensing, Sevenoaks, Kent, will be pleased to recommend S. Laskey as above; six years' good experience; two years in present place.

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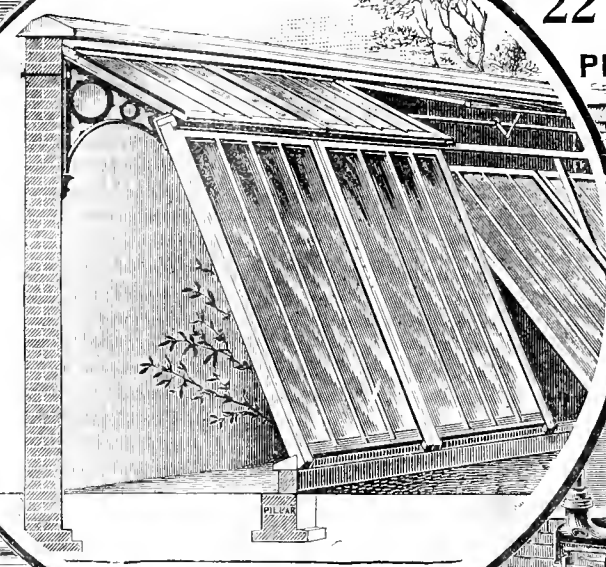
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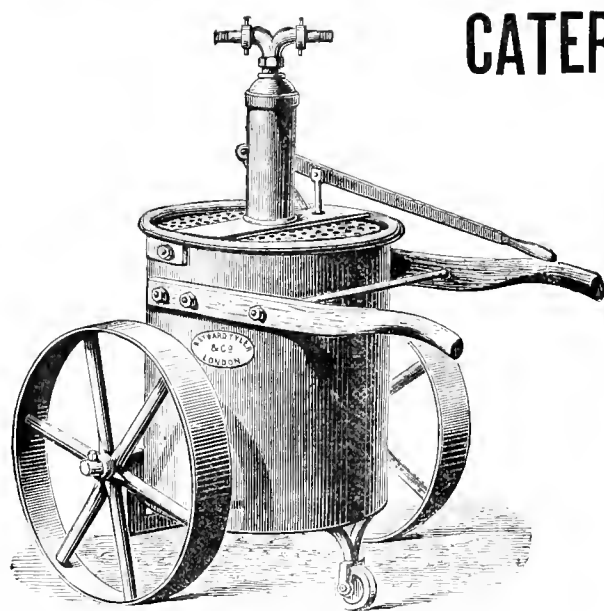
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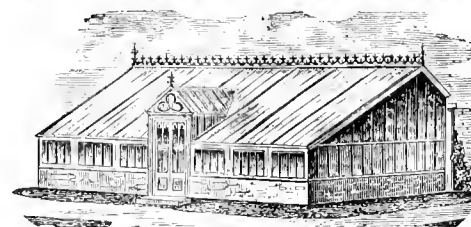
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ESTABLISHED 1841. No. 2637.

No. 237.—VOL. X. {THIRD SERIES.}

SATURDAY, JULY 11, 1891.

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CROTONS, 12 sorts, 6s, 9s, 12s, and 18s. per dozen; DRACENAS, for growing on, 9s. and 12s. per dozen; CALADIUMS, 12 splendid varieties, to make a show this summer, 12s. and 18s. per dozen; 12 beautiful Stove or Greenhouse PLANTS, 9s, 12s, or 18s.; 12 beautiful Stove or Greenhouse CLIMBERS, 21s. to 42s.; PASSIFLORAS, in variety, 1s. and 1s. 6d. each, 6 beautiful sorts, 7s. 6d. See Catalogue, gratis.

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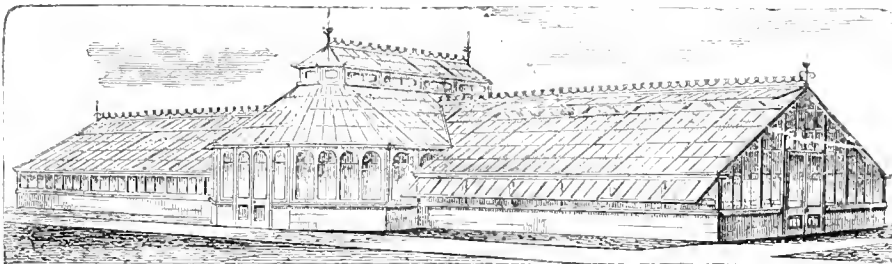
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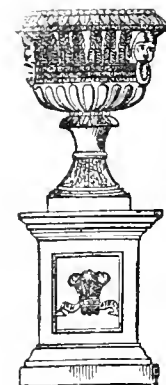
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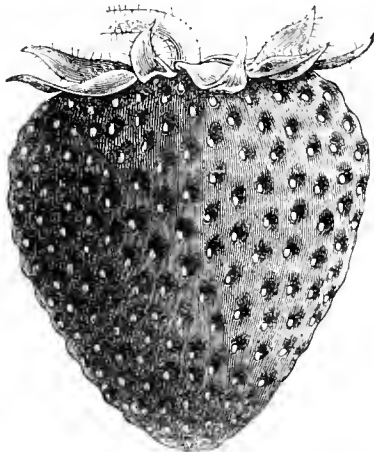
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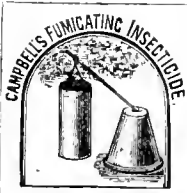
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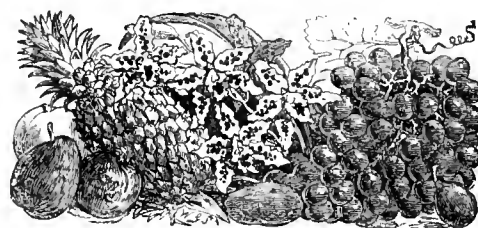
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CLEMATIS LANUGINOSA, 12s. per dozen.

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THE

Gardeners' Chronicle.

SATURDAY, JULY 11, 1891.

SIR CHRISTOPHER WREN AS A GARDENER.

ONE usually connects the name of Sir Christopher Wren only with the erection of City churches, but he deserves at least a little niche in the memory of those whose chief concern is with plants, and with the useful or ornamental disposition of the surface of the ground. I cannot discover what share he may have taken in arranging the grounds of the country homes he built or altered, but we can fancy that he may have been active in this direction, for the art of gardening was then still in its strictly formal phase, the immediate surroundings of great country houses were architectural in design, and clients were wise enough to know that the same artist who planned the structure itself should be consulted about its accessories. Moreover, there is historical witness to the fact that once, at least, he shared in the arrangement of a famous garden. About the year 1600, Queen Mary engaged Wren to make alterations in Cardinal Wolsey's former palace of Hampton Court; and, though I cannot find any detailed account of what his work on the gardens was, it is known that they were included with his purely architectural problems "Queen Mary," says Wren's latest biographer Miss Phillimore, "though she amused herself with planning the gardens and making suggestions, had yet the wisdom to defer to Wren's better taste and knowledge. Her husband, with characteristic obstinacy, insisted on his own ideas, thereby dwarfing the cloisters and marring much of the architecture. It is, however, fair to say that King William always owned that the defects were his, the merits Wren's; and these merits were very great, as any one who knows the fine old palace, with its rich red brick, its arcades, and the quaint formal gardens, will readily allow. He built, at about the same time, the pavilion and the Ranger's house in Bushey Park."

But it is in Wren's writings that we find what will be of most interest to our readers. No man ever worked harder at his own profession than he, even during the later years of his long life; yet he found time to investigate many other intellectual questions, and occasionally to write about them. An article, "On the Surface of the Terrestrial Globe," is mentioned by biographers, but is no longer extant. Another, however, "On the Rising of Sap in Trees," has been preserved. In full, it exists only, I believe, in a manuscript inserted in a volume of the *Parentalia*, a folio book of family memoirs published by Sir Christopher's grandson, and now itself a rarity. But some extracts from it are printed by Miss Phillimore, and are valuable as showing how

such a subject was approached, just two centuries ago, by a man who, although he was not a naturalist, had one of the acutest and most cultivated intellects of the time.

"It is wonderful," writes the great architect, "to see the rising of the sap in trees. All will bleed more or less when they are tapped by boring a hole through the bark, some very considerably, as the Birch, which will afford as much liquor every day almost as the milke of a cow; in a Vine, when a bough is cut off, it will, if not stopped, bleed to death. Now, by what mechanism is water raised to such a height as in Palmitos to 120 foot high? A skillfull engineer cannot effect this without great force and a complicated engine, which Nature does without sensible motion: it steals up as freely as the water descends. The reason of this is obscure as yett to naturalists." Various theories which Wren then quotes are not explained by his biographer, but, she tells us, he shows by a little marginal drawing "that the onely vicissitudes of heat and cold in ye aire is sufficient to raise the sap to the height of the loftiest trees." Mechanical explanations are then given to refute the idea that there is "a secret motion in Nature contrary to that by which plants aspire upwards." And in conclusion, Wren says:—"But though I have shown how the sap may be mechanically raised from the root to the top of the loftiest trees, yett how it comes to be varied according to the particular nature of the tree by a fermentation in the root; how the raine water entering the root acquires a spirit that keeps it from freezing, but also gives it such distinguishing tastes and qualities, is beyond mechanical philosophy to describe, and may require a great collection of phenomena with a large history of plants to shew how they expand the leaves, and produce the seed and fruit from the same raine water so wonderfully diversified and continued since the first Creation."

Special students of such questions would be glad to see the explanatory passages omitted from these quotations, although, of course, we can understand how they did not find a place in a general biography of the architect. But it is certainly interesting to discover that a man so practical and sensible as Wren, seems to have anticipated a day when even such secrets as the transmutation of inert into living matter would be explained. Unfortunately, our "collection of phenomena" and our histories of plants, vastly though they have increased during the past two centuries, have brought us no nearer to the reading of riddles of this sort.

When discussing the condition of the churches of London, and the best way of repairing them, Sir Christopher once wrote: "As to roofs, good Oak is certainly the best, because it will bear some negligence. The churchwardens' care may be defective in speedy mending drips; they usually whitewash the church, and set up their names, but neglect to preserve the roof over their heads. . . . Next to Oak is good yellow deal, which is a timber of length, and light, and makes excellent work at first, but, if neglected, will speedily perish; especially if gutters (which is a general fault with builders) be made to run upon the principal rafters, the ruin of the church may be sudden. Our sea-service for Oak, and the wars in the North Sea, make timber at present of excessive price. I suppose, ere long, we must have recourse to the West Indies, where most excellent timber may be had for cutting and fetching."

Wren lived, as I have said, before the time when naturalistic methods of gardening art were

introduced, and very long before the establishment of great rural cemeteries for the reception of the dead of cities. In his day it was customary to bury in churchyards, and actually within the walls of churches, even in the densest parts of London. But he was too intelligent a man not to protest against so dangerous a practice, and, in one of the many reports on architectural and urban questions which he wrote, we find what his conception was with regard to the proper disposal of the dead. If they are not interred in or near the city churches, he says, "It will be inquired, where then shall be the burials? I answer, in cemeteries seated in the outskirts of the town. . . . A piece of ground of 2 acres in the fields will be purchased for much less than 2 roods among the buildings; this being enclosed with a strong brick wall, and having a walk round, the two cross walks decently planted with Yew trees, the four quarters may serve four parishes, where the dead need not be disturbed at the pleasure of the sexton, or piled four or five upon one another, or bones thrown out to make room. . . . It may be considered further, that if the cemeteries be thus thrown out into the fields, they will bound the excessive growth of the city with a graceful border, which is now encircled with scavengers' dung-stalls." To-day we should hardly consider such cemeteries a "graceful border" to a city, although, it must be confessed, too many in America are encircled by the more unpleasant heaps of refuse with which Sir Christopher desired to do away. His words convey, I may add, an exact picture of many cemeteries still in use near European towns; but, though they are much larger than the churchyards which preceded them, the horrible results of overcrowding cited by Wren as existing in such yards, may often be witnessed within their wider yet now insufficient and inelastic walls. I have myself seen, in German cemeteries in the outskirts of cities of the first class, even the piling of three or four bodies one upon another, and this not in portions devoted to the poor, but in lots owned by aristocratic families. *M. G. Van Rensselaer, in Garden and Forest.*

NEW OR NOTEWORTHY PLANTS.

ADA LEHMANNI, *Rolfe, n. sp.**

For many years the well-known *Ada aurantiaca*, Lindl., was the only species of the genus, but now a second one has appeared. My first acquaintance with it began in September, 1888, when Mr. James O'Brien, of Harrow-on-the-Hill, sent it to Kew for determination. In the following July it was sent again, by Mr. J. E. Bonny, Hextable Nursery, Swanley, Kent, who presented a living plant to the Kew collection, where it has since flowered. In January, 1891, Mr. F. W. Moore sent it from Glasnevin, and now it comes from Mr. H. J. Ross, of Florence. It was introduced to Europe by Mr. F. C.

* *Ada Lehmanni*, n. sp.—Habit of *A. aurantiaca*, Lindl., but more rigid. Leaves arcuate, linear, acute, coriaceous, dark green, more or less distinctly marbled with grey blotches, 8 to 12 inches long, 6 to 11 lines broad. Scapes erect, rather shorter than the leaves, racemes with five to eight flowers. Bracts lanceolate, acute, 5 to 8 lines long, a little shorter than the pedicels. Sepals and petals subconnivent, subsimilar, linear-lanceolate, acute, somewhat fleshy, bright cinnamon-orange, 1 inch long. Lip oblong-lanceolate, acuminate, with incurved undulate margin and recurved apex, about three-quarters as long as the sepals. Colour white, except the very fleshy, linear, velutinous, thickened callus, which is deep orange-coloured, and extends from base to near the summit. On either side of this callus, about a third of the distance from the base, is a curiously recurved white hook, almost like the prickles of a Rose-bush in shape, the use of which is not easy to divine. Column short and stout, dull yellow, with a pair of large fleshy auricles at base. Native of New Granada. *R. A. Rolfe, Herbarium, Kew.*

Lehmann, German Consul in the Republic of Colombia, alter whom I have great pleasure in naming it. It is a very distinct species, easily distinguished from *A. aurantiaca* by its more rigid habit, shorter, broader, and darker green leaves, which are everywhere marbled with grey, sometimes very distinctly so, at others more obscurely, and by its white lip. It is also decidedly a summer-flowering plant, while *A. aurantiaca* is well known to flower during the winter, when its brilliant orange-coloured racemes are very useful. The colour of our novelty is equally brilliant. It may be added that the name was circulated, and the description prepared at least two years ago, but for some reason it never got into print. *R. A. Rolfe.*

A NEW HARDY MAGNOLIA.

In the *Botanical Magazine* of February last, Sir Joseph Hooker described a new species of *Magnolia* under the name of *M. Watsoni* (alter the Assistant-Curator of Kew), the plant having been purchased from a collection of native plants in the Japanese Court of the Paris Exhibition of 1889, where it was exhibited as an unnamed species. This plant flowered last June in the open air at Kew, and a drawing of it was made for the magazine. A very fine specimen of this same *Magnolia* has been sent to me by Messrs. Veitch, who have lately flowered it for the first time in their Coombe Wood nursery, where they have grown it, fully exposed, for the past two years, the plants having been received direct from Japan under the name of *M. parviflora*. On seeing the flower, I at once recognised the similarity to the *Botanical Magazine* figure, and on showing the flower to Mr. Hemsley at the Kew Herbarium, he said at once it was the new *M. Watsoni*, and he kindly showed me the native drawings and specimens of the true *M. parviflora* and allied species. The true *M. parviflora* and this new *M. Watsoni* are so obviously distinct from each other, that it is strange that the two species should have passed under the same name, as they evidently do in American nurseries; and stranger still is the fact that such a conspicuous and beautiful tree has so long escaped the botanical travellers in Japan, and has not been figured by native artists in the Japanese floras.

Professor Sargent (at p. 739, vol. ix., of the *Gardeners' Chronicle*) is evidently of the opinion that the true *M. parviflora* and *M. Watsoni* are distinct, and it is satisfactory to read that both flourish and flower well in the Flushing nurseries.

We have, unquestionably, in this *Magnolia* a grand addition to hardy trees—one that promises to adapt itself to our climate as readily as other Japanese species do, though probably, as Professor Sargent observes, the hot and dry summers in America are more favourable to Japanese plants than ours.

Those who can refer to the *Botanical Magazine*, t. 7157, may see a truthful portrait of this new tree, though the Coombe Wood specimen was somewhat larger than the flowers illustrated. To describe it, one must compare the flower with that of the evergreen, *M. grandiflora*, as it is almost as large, and has similar large and broad ivory-white petals, incurved and shell-like. The sepals are tinged with a delicate rose-pink, which at once distinguishes it from other *Magnolias*. The conical pistil rises 2 inches, and at its base are numerous rows of stamens with rich crimson filaments, and reddish-yellow, or terra-cotta-tinted anthers—a combination of colour that makes the flower very striking. The flower sent is $6\frac{1}{2}$ inches across, and has a powerful spicy perfume like that of its congener, *M. glauca*. The leaves are about 6 inches long, by about half as broad, like those of *M. Yulan*, deep green above, pale beneath. It appears to be a sparsely branched low tree, the solitary flowers terminating the young branches. The Coombe specimen is about 4 feet high, and the specimens at Kew received from America, under the name of *M. parviflora*, are of similar size. The true *M. parviflora* has much smaller leaves, broadly ovate, and pointed, while the flowers seem to be only a third the size of *M.*

Watsoni. *M. parviflora*, is not, I believe, in cultivation in this country, neither have I seen *M. hypoleuca*, though it may be in the Kew collection. *M. Kobus*, which Professor Sargent states as being the hardiest of all the Magnolias, is at Kew, but is not, I think, in the nurseries here. From the figures, it appears to be a handsome species. *M. stellata* is becoming tolerably common now, and thrives everywhere, though late frosts are liable to spoil it just when in flower or bud. *W. Goldring*.

THE INFLUENCE OF STOCK UPON SCION.

ABOUT a year ago, a large number of experiments in herbaceous grafting were performed by a student under the direction of Professor Bailey, and, among others, a trial was made of grafting a portion of a half-grown Dwarf Champion Tomato upon a similar fruit of the Ignotum variety, from which a corresponding piece had been removed. In habit of growth, as well as in fruit, the Dwarf Champion is very distinct from the Ignotum; the former has thick and short-jointed stems, thick, crumpled, dark green leaves, and the fruit has a distinctly purple tinge; the Ignotum is similar in character to the common red varieties. The two parts of the graft united and grew to maturity, after which the seeds were removed and planted, care being taken to keep the seeds of the two halves, stock and scion, separate.

The results obtained from the seeds of the scion half of the fruit, the Dwarf Champion, were very striking; so surprising, indeed, that it was decided to distrust the accuracy of the records of the experiment until it should be confirmed by further trials. Soon after their appearance above ground, the plants from these seeds began to show some of the characteristics of the stock. As the plants developed, this resemblance to the Ignotum increased, until at maturity both the plants, and the fruit which was produced, were undistinguishable from the pure Ignotum variety.

The interesting development of this experiment led to its repetition during the past winter, the work being carried on by means of the Tomato plants growing in the forcing-houses of the Experiment Station. Of the grafts thus made, a part were Ignotum upon Dwarf Champion as a stock, the reciprocal of that mentioned above, and from the seeds of the scion-half young plants are now growing which again show a very decided influence from the stock, being plainly intermediate in character of leaf and in habit between the two varieties, thus confirming to that extent the observations made during last year's experiment. The further developments of the plants and their fruit will be looked for with great interest, since, among the many forms of grafting which have been practiced in the past, few, if any, records are to be found of such a preponderating influence of the stock. *Garden and Forest*.

THE HERBACEOUS BORDER.

HELIANTHUS OCCIDENTALIS.

A PLANT has been sent out for three or four years from Hale Farm nursery, and exhibited under this name. It is figured in Mr. Ware's last catalogue of hardy plants on page 32. It is certainly not *H. occidentalis* of Riddell, as described in Gray's *Flora of North America*. It flowers much earlier, has larger flowers, and is distinct in many characters. The true *H. occidentalis* has been cultivated by Mr. W. Thompson, of Ipswich, for several years, and distributed by him. Those who have Mr. Ware's plant, and will compare it carefully with the description of *Helianthella quinquevervis* (Gray) in *Flora of North America*, vol. i., part 2, p. 284, will, I think, be satisfied that it is that plant. *C. Wolley Dod, Edge Hall, Malpas*.

SILENE ARMERIA.

A few clumps of this species are very telling in our herbaceous border at present, and for these we are indebted to a friend, who gave us some small self-sown plants early last September. These were planted at once in clumps of three each, and now form masses of flower 15 to 18 inches high, and the same in diameter, of a deep rose colour. Being light in appearance, and lasting well, it is very useful for cutting for room decoration, the colour showing well by artificial light. It is a plant worthy of being generally cultivated. *W. H. Dicers, Ketton Hall Gardens, Stamford*.

GERBERA JAMESONI.

It is some four years since this lovely Composite was introduced from Barberton, Transvaal, and therefore it has hardly had sufficient time to get into general cultivation. Specimens in pots have flowered at Kew and in these gardens in the open air; and one thing in its favour is, that it has withstood the cold of the past winter, and is now coming into flower. They stand amongst the *Opuntias* at the foot of a wall looking south at the end of the stove, somewhat protected on the east by the projecting Lily-house. Glass lights are placed over the *Opuntias* late, to keep them dry, the front and sides being open, and the dryness thus afforded the plants helps them to pass the winter unharmed; for a plant which was placed in the open border, although it grew vigorously during the summer, perished in the winter. It is highly probable that this *Gerbera* will figure on rockwork and other suitable positions when it gets better known. On rockwork it should have a warm position, and be protected in winter by means of a piece of glass placed over it, as is done for other doubtful plants. It is not fastidious as to soil, good loam and leaf-soil and coarse sand forming a compost, in which it grows freely. I also notice that when planted in a shaded position, the plant is attacked by a leaf-mining grub. Our plants were raised from seeds sent by Mr. R. W. Adlam of Natal (see *Gardeners' Chronicle*, June 23, 1888, p. 775), and in his note he mentions that the flowers last several days without changing colour; Mr. Watson of Kew, writing concerning this plant, says they last in flower a fortnight, while in the open air at Cambridge they last from a month to six weeks.

I have scanned several of our leading seedsmen's catalogues, in order to find out whether or no this is offered to the public, but have failed to find it, and seedsmen would do well to procure seeds for their customers. *W. Harrow, Botanic Garden, Cambridge*. [The plant was figured in our columns, 1889, June 22, fig. 122. Ed.]

ROSES.

INDOOR CLIMBING ROSES.

UNDER the above heading (on p. 760, vol. ix.), Mr. Cook mentions that Rose William Allan Richardson makes too much growth, and produces few flowers when planted out under glass. I feel this should not be let pass without comment, as this Rose, if properly grown, is far more free-flowering than half of the varieties grown. The great mistake, made when growing these strong habited Roses under glass, is that they are pruned too severely. Mr. Cook mentions that this variety does better on outside walls; why not treat it the same inside? Then the results will be found to be far and away better than upon plants grown outside, as this plant makes late growth, which cannot be ripened nearly so thoroughly outside, as under glass. I have plants of this variety that bore some 500 to 600 grand flowers upon each early in May, and that are again in flower (June 20), and carrying 300 blooms and buds. These will flower again in August, or early in September.

In fact, I know of no Rose that is freer flowering if rationally treated. Too many growers, even now, prune back the long growths made by many

varieties, with the result that they practically cut away the flowers, and more long shoots are produced. If William A. Richardson is planted out, and treated in the same way as *Maréchal Niel* or *Gloire de Dijon*, *ic.*, all the long and ripened growths left to flower, this variety will be found far more free than either, and greater praise could not possibly be given it.

William A. Richardson blooms two or three times a year, while the *Niel* will only carry one really good crop. If people would only let these strong climbing varieties grow as they choose, and simply endeavour to assist them all they can by ripening the growth when completed, we should hear no complaints on the score of shyness of flowering. All strong growers will flower upon the long shoots, if these are matured. The only pruning required with these varieties being, to cut away the growth as soon as it has flowered, so as to throw all the strength of the plant into the young shoots growing on for another crop of bloom.

If treated in this manner, there are hardly any strong-growing Roses but what will do well under glass, provided sufficient room can be given. *A. Piper Sasser*.

THE WINTER OF 1890-91.

Pursuing one's course along the western and south-western counties, we come to such centres of Rose growing as Bath, Exeter, and Torquay, and portions of the country from whence we do not expect to hear tales of disasters from frost and injury from severe weather, but, as will be found, that in some cases there is very little difference in the effect from that experienced in other districts. Messrs. Cooling & Son's nursery at Bath is situated on high ground, it being about 350 feet above the sea-level, and could not therefore be subject to such damage as might be expected in low-lying land. The soil is a stiff loam, and the effect of the winter has been that which we find in most places; the thermometer did not fall below 10°, or 22° of frost—considerably less than in many places, yet they inform me that the effect has been disastrous; the majority of Teas are killed to the ground, and standard Teas killed out right; while the H.P.'s, except those of more tender constitution, are uninjured. The varieties of Teas which have suffered most are *Madame de Watteville*, *Countess de Nadaillac*, *Niphotos*, and *Madame Falcot*. From Mr. Alex. Hill Gray, whose garden is one of the most remarkable in England, I have a different account: he says, his Roses are comparatively uninjured; and a friend who has seen it, says it is the only garden he has seen where Teas have proved strong.

Midway between Bath and Exeter lies the pleasant county town of Taunton, where horticulture is enthusiastically carried out by many amateurs; one, Mr. W. Herbert Fowler, has of late years cultivated well and extensively, in a very delightful garden, both Teas and hybrid perpetuals; and it will be seen that in his favoured position he has not suffered so much as many others. "I have not lost," he says, "more than one per cent. of my Teas, though of course they are cut down to the ground in most cases. I note that those on the seedling Briars have suffered less than those on the *Manetti* (but why grow any Teas on *Manetti*?); many of the former have lost no wood at all. None of my standards have suffered, and the *Maréchals* are breaking grandly. I have lost more H.P.'s than Teas; the latter were not protected at all, except by earthing them up like Potatoes." This latter experience reminds me of the manner in which my late friend, the Rev. W. F. Radclyffe, used to be sneered at when he first advocated this method of protecting his dwarfs, and yet now nearly everybody, and amongst them those who used to ridicule the notion, have adopted it. Although some of his opinions about Roses, which he really loved, were eccentric, yet on this point he proved himself to be before his age. There is no need to say anything as to the right of Mr. R. G. Baker, of Ilcavittree, Exeter, to be considered an authority on all matters connected with the Rose, and from his favoured locality we might naturally expect to receive not so sad a story of the winter's loss as from other places;

his garden is a sheltered one in the suburbs of the old city of Exeter. The soil is light and rich, resting on red sandstone; the height above sea-level is 135 feet, and the lowest reading of the thermometer at the Devon and Exeter Hospital close by was 19° of frost, considerably lower, it will be seen, than that of the previous stations, and this is his report:—"My Roses have, as a whole, wintered well, and I have lost very few. I notice that newly-planted Teas have not suffered so much as older plants, the strong growers more so than the weaker ones. Madame de Watteville has suffered more than any other Tea with me, the whole of these having been cut down to the ground; the H.P.s have broken very well, but the cold and frost of this month have checked them badly. My first bloom of a Tea Rose, Amazon, opened to-day (May 28) under a wall. In connection with the cold wave of May 17—19, the thermometer did not go below 32°. "I notice, too, that he speaks of Madame Bérard and Marie Van Houtte, both strong growers, having suffered very much. This is somewhat remarkable, as they are both strong and sturdy growers, the former a decided Dijon, and the latter growing most vigorously; it may be that they were fuller of sap, and so felt it the more.

Descending still further south, we come to the famed district of Torquay; not that, were I about to commence Rose-growing, I should choose either Devon or Cornwall as the scene of my operations. The climate is mild, but it is also moist, and there is therefore a great danger of the wood not being properly ripened, so that if frost should set in, they would be caught at a great disadvantage, and I know that in Cornwall it is next to impossible to grow Roses fit for exhibition purposes. I have received the following information from Messrs. Curtis, Sandford & Co., of the Devon Rosery, Torquay. The lowest temperature they noted was 16.8, not quite 16° of frost, which, it will be seen, is lower than any yet noticed; the situation is only a few feet above the sea-level, but then that sea is one which feels the influence of the Gulf Stream, and they say that there is no injury done to buds or plants of Teas, except the autumn growth, which was a little singed. Hybrid Perpetuals received no damage whatever, but their opinion that Tea Roses will not suffer any more than hybrids from severe frost, provided the wood is ripe, is not borne out by any other growers—and, of course, up to 16° of frost, it may be true; and as that is the lowest temperature they record, it cannot be adduced as evidence against the opinion of so many others. I may instance this by the case of Lemoine's hardy hybrid Gladioli, which have claimed for themselves the advantage of being left in the ground, and so saving the trouble of lifting. I have had them for seven or eight years, and have only this spring written in their favour; but this last winter has been too much for them, and I have lost every one. Of course, previous to this winter, I should have told everyone, "Oh, yes, they are perfectly hardy—as hardy as the common wild one;" but if I had only 16° of frost, I should most probably have continued to sing their praises, until some unlucky wight who had been seduced by my statements had gone in for them, and found they could not stand the 28° of frost he had experienced.

Each day brings me curious statements with regard to the condition of Roses; one of the growers mentioned in my last paper says, "My Teas are not what they ought to be; they ought to show different. I do not think there is the smallest chance of there being any ready for the 23rd. I do not mean them only, but others. Why don't you postpone the show till the autumn—I mean September. I may give as an instance of the extraordinary character of the season, that I have eight varieties absolutely budless." This is, indeed, a gloomy picture; but it will be seen from the reports given in this paper that it is not altogether so bad, and I have no doubt that, as I have told my friend, we shall have Roses on the 23rd, though probably the spoils of victory will go to other places. *Wild Rose, June 16.* [The results seen at the Rose Shows since this was written have confirmed our correspondent's prevision. Ed.]

(To be continued.)

ORCHID NOTES AND GLEANINGS.

CATASETUM ATRATUM, Lindl. (♂ AND ♀ ON SAME RACEME).

A VERY interesting example of the production of male and female flowers on the same raceme has just occurred in the collection of Mr. William Brooks, F.R.H.S., Whitecross Nurseries, Weston-super-Mare, and has been sent to Kew for preservation in the Herbarium. Seven flowers were developed, of which the third and sixth (counting from the base) were females, the others being males. The females expanded several days before the males, thus furnishing an example of earlier maturity in this sex, for the lowermost flowers usually expand first, while here the sixth one opened before the first. Several buds at the apex were arrested at a very early stage, doubtless through lack of nourishment. An interesting feature about this species is, that the segments of the flower are less dissimilar in the sexes than usual. In both they are light green, with numerous small blackish-brown spots. The lip in the female, though shorter and more hooded than in the male, has a similar thickened whitish reflexed apex, also numerous lateral teeth, though smaller than in the male. It is the first *Catasetum* I have been able to identify from the female alone on its first appearance, for I may add that one of the two female flowers was first sent for determination, while the males were still unexpanded, and their different structure unsuspected. The sexual organs present the usual differences; the column of the female very short, stout, and without antennæ or pollinia; that of the male longer, more slender, with perfect pollinia, and a pair of subparallel antennæ, in the same plane, directed into the cavity of the lip, which organ is superior in both sexes. Rodriguez (*Gen. et Sp. Orch. Nov.*, II, p. 220) records the female as seen by him in Brazil, a scape of two flowers, apparently much like those now produced in this country, but it is not stated whether males were also produced on the same plant. There are several other *Catasetums* in cultivation in which the females are not known, and, on the other hand, one or two females which cannot be determined for want of the male flowers, so that any instance of the appearance of both sexes is specially interesting. *R. A. Rolfe.*

ORCHIDS AT HAZELBOURNE, DORKING.

The pretty residence, and its delightfully situated gardens, of Welbore Ellis, Esq., situate on the south-west side of Boxhill, has for some time been making a choice collection of Orchids, and for which a proper provision was made at the start. *Odontoglossum crispum* was always the favourite at Hazelbourne, and fine forms were continually being acquired, but not sufficiently fast to satisfy the wishes of the proprietor. In gratifying a taste of any description, a rich man, like Mr. Ellis, has always the facilities if he will but make use of them. That in this case he wisely did, and sent out Mr. Mellican as collector. He had previously done work in a similar capacity, and has recently returned to this country with some 6000 grand pieces, specially collected for Mr. Ellis. The Orchid establishment is as yet of moderate pretensions, but this latest addition sufficiently indicates that it is being increased in no half-hearted manner; and, in securing the services of Mr. Gostling as his gardener, he has a good guarantee of success.

In the first house, *Calanthes* were growing luxuriantly, and without any indications of "spot" on their leaves. *Dendrobium nobile* and *D. n. nobiliss* were making fine growth; and the more difficult *D. Deari* was growing very freely. Plants of *Cattleya aurea* have flower-sheaths, and two nice plants of the new *Cattleya Rex*, a marvellously fine thing, were observed. *Cypripedium bellatulum*, *C. Godefroyæ*, and *C. niveum* grow finely in this house, which is kept very warm and moist.

In the next house to this one, the general collection of *Cattleyas* were found; one fine specimen of *C. gigas* was noticed, having five blooms on one spike,

Several varieties of *C. Mendeli* were in bloom, one a very richly-coloured variety with a well-fringed lip. The *C. Mossiæ* are nearly over, but enough remained to show the excellence of the strain. Other noticeable plants consisted of *Lælia Boothiana* (*Cattleya lobata*), *L. elegans*, *L. purpurata*; and with them the *Cymbidiums*, *Thunias*, and *Dendrobiums* were growing vigorously.

In the next house, an intermediate one, the *Lycastes*, *Dendrobium Jamesianum*, *Odontoglossum grande*, *Oncidium prætextum*, *O. Krameri* were growing freely, some of them being furnished with strong flower-spikes; and in the cool-house, the *Odontoglossum crispum*, *O. triumphans*, *O. Corradinei*, *O. Pescatorei*, *Oncidium macranthum*, *Epidendrum vitellinum*, &c., made a fair display.

GROWING ALPINES IN SPHAGNUM.

FROM all sides I receive letters and enquiries concerning this new method of cultivation, and I propose to reply through the *Gardeners' Chronicle* that all may hear about it, and that I may make known the results of my experiments. On March 20, I set up on a wall exposed to the full sunshine, three large pans pierced with numerous holes which were originally intended to hold epiphytic Orchids. I filled these pans with sphagnum eight years old, which at first sight appeared quite worthless, but I had no other handy, as at Geneva sphagnum is dear and rare.

I planted in the sphagnum—I, a poor unfortunate plant of *Arnica montana*, L., which had begun to turn yellow and withered, and which was the only one left out of a collection of plants sent from our alpine botanic garden at Bourg St. Pierre, where the plant is wild, abundant, and sturdy; 2, a plant of *Astrantia minor*, L., raised from seed in the garden here, and in good condition; 3, *Gnaphalium Leontopodium*, Scop., a seedling a year old, fairly healthy, but showing no signs of bloom; 4, *Chrysanthemum alpinum*, L., brought in good condition from the Liunna last October, but which now appeared dying; 5, *Androsace helvetica*, Gaud., a young plant brought from the Alps last September; 6, *Parnassia mysoensis*, Heyn., received last year from England, but which had suffered much and seemed nearly dead; 7, *Saxifraga aizoides*, L., brought last autumn from S-embrancher (Valais) to our Geneva garden; 8, *Saxifraga carpathica*, Reich., raised from seed in the garden, but which had suffered much from the droughts of last summer; 9, *Saxifraga stellaris*, L., brought from the Alps last September; 10, lastly, a plant of *Soldanella alpina*, L., brought from the Jura, and too sickly to bloom; it had not even any buds, and seemed likely to die.

These plants are some of the most difficult to preserve, to keep healthy, and to bloom in the dry climate of Geneva. Many, such as *Arnica montana*, *Saxifraga aizoides*, *Parnassia mysoensis*, and *Chrysanthemum alpinum*, it is impossible to cultivate here, and I have quite given up attempting to acclimatise them; I content myself with raising them in Valais, and bring them down here when I want them. As to *Edelweiss*, we raise it easily by growing it on calcareous soil in a sunny place, but its appearance is different, and it lacks its silvery-white colour. A *connoisseur* glancing down our list of plants will at once see that these belong to soils which, chemically speaking, are very varied, some (*Edelweiss* and *Androsace helvetica*), belong to the calcareous flora, while others (*Arnica*, *Chrysanthemum alpinum*, and *Saxifraga stellaris*), grow usually on an essentially silicious soil. Again, some (*Astrantia*, *Saxifragas*, and *Soldanellas*), are typical of the vegetation of marshes and the borders of streams; others (*Arnica*, *Androsace*, and *Gnaphalium*), grow wild on dry slopes. Therefore, it is to be supposed that, considering their usual conditions of existence and their different habitats, the ten plants which I placed in sphagnum, and for the roots of which I allowed but little earth, in some cases not at all, being submitted to the same treat-

ment, would bear it differently according to their affinities. This was my idea. Now, the facts—nothing is so convincing as fact—showed me that I was wrong. Soon—that is to say—at the end of two days' exposure to the full sun—we were then favoured with some sunshine, the pans being watered every morning, the Soldanella seemed to regain life, and I saw some new leaves coming up in the centre. In the Arnica, which had had such yellow leaves, there was quite a transformation at the end of eight days, for it turned a beautiful green; then, at the end of three weeks, I saw the heart of my plant swelling, and soon a bud appeared which grew so well that on June 7, I was able to show at the meeting of the Geneva Horticultural Society the first Arnica montana which has flowered at Plainpalais. Our local papers considered this such a piece of news, that they devoted some lines of *faits divers* to it. My plant was strong and vigorous, as it is usually only seen on the Alps, with stem erect, and flower perfect in form and colour. Impossible to imagine it in better condition. At the same meeting I showed my Edelweiss with two handsome flowers, the usual size or even larger, of excellent form, and above all of a pure white colour, such as is seen on the high Alps. The three Saxifrages were, and are still, in full flower as if growing wild, only still more crowded, and with more defined characteristics. *Chrysanthemum alpinum*, which I had never been able to bloom at Geneva, is now quite covered with fine and properly-sized flowers, and shows many buds which I hope will soon open. The other plants, although sturdy, have not yet bloomed. The *Astrantia* seems to me about to flower, in spite of the youth of the specimen. As to *Androsace helvetica*, it is stationary, but seems in good condition. Such are the facts. To me the question seems settled, and that in spite of the amendment which Dr. Briosi, the Director of the Pavia Botanic Garden, was kind enough to address to me when my first article on this subject appeared in the *Gardeners' Chronicle*. M. Briosi, who has control of the horticultural work done at Pavia, and who, indeed, first instigated it, told me that I was mistaken in my idea that the alpine which I had seen in his garden were grown in sphagnum moss only, for that they were in a mixture of equal parts of Chestnut charcoal, *terre de bruyère* (beath mould), and sphagnum. The Professor did not think it likely that plants would grow in sphagnum only. In spite of his opinion, I continued my experiments, and they have succeeded. Do I imagine that the system advocated by the Italian *savant* is worthless? No, for I have myself tried it, and put it to the test. But I maintain that grown in sphagnum only, in full sunshine, the most delicate alpine plants succeed admirably. "Feet in the water, crown in the fire," this just reverses the requirements of the human body. It must be added that damp sphagnum gives off all day a considerable and beneficial amount of moisture, which wraps the plants in a damp cloud, as is the case with them on the Alps. Later on, I will refer to an experiment on a large scale, which I am going to try when I have sufficient sphagnum. *H. Corretton*, Director of the Alpine Garden, Geneva.

PLANT NOTES.

PERENNIAL CANDYTUFTS.

AMONGST the earlier summer flowering hardy plants, the neat evergreen species of *Iberis* are in all respects the most accommodating and showy of hardy border plants. The prevailing colour of their flowers is white, but as they bloom at a time when bright-coloured subjects are well represented by *Aubrietias*, *Alyssums*, *Phloxes*, &c., their effect is rather complementary than otherwise. There are a great many forms of the hardy perennial *Iberis*, some being much harder than others, and perhaps no species is harder or more accommodating than the old *I. sempervirens*, and it is not particular as to soil or situation, provided it be not overshadowed by other

plants, or encroached on by rampant-growing subjects, and being a sub-shrubby species, rarely growing more than 1 foot high, and evergreen. Like the rest of the perennial sorts, it is specially valuable in giving rockeries and small herbaceous borders a partly-furnished appearance during the winter months. There are several varieties, one named *I. s. superba*, having larger and denser heads of flowers; another is *I. s. Garrexiana*—and where variety is a consideration it might be included. But variety is better attained by growing distinct species, such as *I. corifolia*, a plant somewhat similar to *I. sempervirens*, but scarcely half as large as that species. *I. correnfolia*, is abundantly distinct and readily known by its large entire leaves and large corymbose heads of flowers, with individually large flowers—the plant is a robust grower. In *I. Priuti*—we have an exceedingly neat and floriferous plant, growing only a few inches high, with large white corymbs of flowers of a pinkish tint, owing to that colour being present in the sepals of the unexpanded flowers. Very similar to this species, is *I. Tenoreana*—but I have not found it quite so hardy, indeed, it is almost a biennial, although it may come in the same position for years from self-sown seeds. *I. gibraltaria* and *I. g. hybrida*—are large and desirable *Iberises*, but apt to go off during winter. *F. R.*

STYRAX JAPONICA.

OF the many hardy Japanese trees and shrubs we have now in our gardens, I do not know one that combines such elegance of growth and chaste flower beauty as this *Styrax*, which now is, or was quite recently, one of the chief attractions of the Coombe Wood nursery, and of which I have before me a great flowering branch hung with numerous pendent snow-white blossoms, which, for the sake of description, may be compared with the flowers of the well-known *Solanum jasminoides*, though they are larger, and of more substance, and, moreover, fragrant. It is a deciduous shrub, growing from 6 to 12 feet high, according to soil and locality, and being very twiggy, makes a dense bush, the branches arranging themselves in broad flat tiers. The flowers are borne on slender stalks about an inch long, in twos and threes, from the leaf axils of every tiny twig, so that a small bush bears thousands of flowers expanded at once. It is quite a hardy shrub, beyond a doubt, as Messrs. Veitch, who introduced it, have had it growing for years in their Coombe Wood nursery, fully exposed, and there one sees it every year in profuse bloom. But though it is hardy enough, I think it is one of those shrubs that during the earlier stages requires some sort of protection until it becomes thoroughly established. It should be planted in a nook exposed to full sun, but sheltered from northerly and easterly winds, and if with a background of evergreen growth, its effect at flowering time will be heightened. It is certainly the most valuable of all the *Styraxes* for the garden, and I should always include it among the choicest selection of shrubs. Its value is becoming known, as I observe that other nurserymen are taking it in hand besides Messrs. Veitch. *W. Goldring*. (It was figured in *Gardeners' Chronicle*, 1885, p. 745, fig. 166.)

CEREUS PERUVIANUS, Haw.

Many people dislike the Cactus family, considering them not worthy of notice on account of the stiff and formal habit usually present in most of the species. Could those who hold this opinion see the largest specimen growing in this garden, covered with hundreds of large white flowers, which expand during the night and remain open until the sun closes them about midday, their notion would probably be somewhat changed after witnessing such a grand floral exhibition. It is only during the early morning the flowers are seen to perfection. As soon as the sun shines fully upon them, they gradually close and wither entirely. To-day (May 15) no smaller a number than 319 were counted fully expanded. And a similar number have been open for several mornings past, sometimes not quite so many opening at the same time. The columnar stems are slightly spiny, 6-angled, the taller being

about 35 feet high. This specimen can be seen growing at a spot partly surrounded with luxuriant vegetation. The larger stems, a few feet from the ground, measure 2½ inches in circumference. The size of the flowers across their greatest diameter is about 8 inches, length from base 8 inches. Some of the flowers appear to be fertilised, so that good seeds may be looked for at no distant date. It bears a fruit about 2½ inches in diameter, and about 3 inches in length, of a rosy colour, with dark and numerous seeds embedded in a pulpy interior. The juice of the fruit is used as a colouring matter by local confectioners, especially by sugar-boilers for candy. *W. E. Broadway*, Trinidad.

ARNEDIA ECHIOIDES.

This Boragewort, popularly known as the "Prophet Flower," is without doubt one of the best of hardy border plants, continuing for a long time in bloom when grown under favourable conditions. In a well-prepared border of moderately rich soil, it continues to throw up fresh growths, which, in their turn, end by branching into several one-sided racemes of bright primrose-yellow flowers, from 6 inches and upwards in length. The individual flowers are usually about half an inch over on the corolla lobes, at the base of the sinuses of which there is the characteristic purplish-brown spot, but which gradually fades out as the flower ages. The plant has thick fleshy roots, from which a crown of Plantain-like leaves are given off, generally about a foot long, stalkless and alternate, with their edges as well as the stems ciliated. Propagation is easily effected by division and root cuttings in the autumn, as well as by seeds, when they can be obtained, but it does not seem to ripen many seeds in this country; however, they are frequently to be had from continental sources. *F. R.*

PLANT PORTRAITS.

ALNUS MARITIMA, an American Alder, flowering in autumn on the wood formed in the spring. In the autumn, when covered with its large bright golden-coloured catkins, it has considerable beauty. *Garden and Forest*, June 10.

APPLE CALVILLE VICTOR HAGE, *Bulletin d'Arboriculture*, June. A seedling from Court pendu plat, but in appearance more like a Calville. It is prolific, and has obtained the suffrages of the pomologists of Ghent.

ERANTHUS BRACHYCENTRON, Regel, in *Gartenflora*, June 15, p. 324.

BEGONIA BAUMANNI, tuberous, with orbicular leaves, erect flower stalks, panicled flowers, each transversely oblong. *Gartenflora*, t. 1348.

BERTOLONIA GUTTATA VAR. *BARON ADOLPHE ROTHSCHILD*, *Illustration Horticole*, t. 130.—Leaves rosy-lilac, with deeper blotches of the same colour, speckled with pale circular spots.

BERTOLONIA GUTTATA VAR. *MADAME LEON SAY*, *Illustration Horticole*, t. 129.—A seedling of M. Bleu. The leaves have a cream-coloured ground flushed with rose, and symmetrically marked with transverse bands of narrow gyrate green markings.

BILBERGIA WITTACKIANA X, a cross between *amena* and *vittata*, *Gartenflora*, p. 329.

CATLEYA TRIANE, vars., *Le Jardin*, June 5.

CYPRIPEDIUM STONEI, *Lindenia*, June, t. 281.—Borneo. According to the results of a recent popular vote, this is the most highly esteemed of the genus.

CYPRIPEDIUM VILLOSUM, *Garden*, June 20.

HAMAMELIS ARBOREA, *Garden*, June 13.

HAMAMELIS JAPONICA.—*Garden and Forest*, June 3.

JASMINUM POLYANTHUM, *Revue Horticole*, p. 270.

LILIA PURPURATA, *Lindenia*, June, t. 282.—South Brazil. Introduced by M. F. Devos, in 1846.

LILIA PURPURATA VAR. *ALBA*, *Lindenia*, t. 283.—A variety with the segments white, while the lip is also mostly white, but traversed by a radiating purple line.

NECTARINE PRÉCOCE DE CRONCELS. "The largest earliest, and best Nectarine," according to the verdict of several of the leading French societies. A seedling from Amsden Peach, raised by M. Ernest Baltet. *Revue Horticole*, June 16.

REVENALA HILDEBRANDII, *Garden and Forest*, June 3.

TILLANDSIA LORENZIANA, *Gartenflora*, t. 1349.

ZYGOPETALUM GAUTIERI, *Lindenia*, t. 284.—Brazil.

NYMPHÆA LOTUS VAR. MONSTROSA.

The peculiarity of this variety, which was brought from Lake Nyassa by Sir John Kirk in 1886, lies in its production of tubers in place of flowers. During the season the plant produces a large number of buds, outwardly resembling those of an ordinary *Nymphaea*, but which never expand, and upon closer inspection they are found to be changed into tubers, which, upon maturity, become detached from the parent plant, and sink to the bottom of the tank, growing into plants with the character and habit of that of the parent.

Occasionally, and, I might add, rarely, does it produce normal flowers; in fact, it has only flowered four times, to my knowledge, since its introduction to this country—once at Kew, in the Lily-house, in 1887, and three times in the Lily-tank in these gardens, where the plants have been grown for Mr. Barber, who has studied and described the peculiarities of this species in the *Annals of Botany*, vol. iv., No. xiii., November, 1889; and readers who may desire more information respecting this plant, I would refer to this instructive paper. When in flower at Kew, it was determined by Professor Oliver to be a variety of *N. Lotus*, and which he distinguished from the other numerous varieties of that species by the name of *flore albo*; [of course Professor Oliver never intended these words to be used as a name! Ed.]; but it has been thought more fitting to adopt the name suggested by Mr. Watson, on account of the above-described peculiarity. It has some distant affinity with another well-known variety of *N. Lotus*, called *dentata*, the leaves having the same dentate margins as the above; the flowers are also white, and the chocolate markings upon the upper surface of the leaf are also present, but not in so marked a degree as the plant in question; when out of flower, the plant may be readily distinguished from the rest of the *Nymphaeas* by these markings.

The flowers are of a beautiful creamy-white upon first opening, between 4 to 4½ inches in diameter, while those of *N. Lotus dentata* are almost twice this measurement; the backs of the sepals have the longitudinal white striations interspersed with broader bands of green, which are peculiar to other varieties of this species; and from the general appearance of the plant, there can be little doubt as to its being a variety of *N. Lotus*. At the time of writing, the plant is in flower; it opens in the evening, at various times between 7:30 and 8 o'clock, and closes during the morning of next day, the flowers lasting about three days. *W. Harrow, Botanic Garden, Cambridge, June 15.*

THE APIARY.

TAKING OFF SECTIONS.

This pleasurable occupation now demands attention, as after the fine weather we have been getting, storing has been general. Care must be exercised, or the result will be cappings torn open by the bees, and sections totally spoilt in appearance. The use of a super clearer, as previously described in this column, simplifies the operation considerably; but there is an objection to this contrivance, as if section-racks are of different sizes, it necessitates one for each, making it an expensive luxury. Failing the latter, a good smoker must be depended on, well alight. Remove the quilt, and quickly smoke the bees down from each row of sections. The rack should then be covered with the carbolio cloth, and carried some distance from the hive, and the sections there taken out, brushing any remaining bees off each as removed with a feather. A hive-roof turned upside down can be used for brushing the bees into, so that any young ones (grey bees), unable to fly can be taken back to the alighting-board. The evening is a good time for the operation, as although some prefer to do it in the day, when many bees are out in the fields, it is a very warm job working in the sun

with a veil on. A piece of old sacking used for fuel for the smoker will keep alight longer than anything.

Self-Hivers.—The writer is now able to relate his experience with a self-hiver. Mr. Alley, an American beekeeper introduced the idea, and his system was to stand an empty hive by the side of the full one, the two entrances being connected by a tunnel or passage made of queen excluding zinc. A Mr. Bennett thought that an improvement on this plan would consist in placing the empty hive facing, with the tunnel leading straight from one entrance to the other, as he thought the queen would be more likely to go straight forward when the swarm poured forth than to take a turn at right angles. The writer adopted the latter idea, and on June 21 a swarm issued and settled on a tree close by. Finding that the queen did not join them they went back, but not into the receptacle placed ready for them. This was considered a failure, and an alteration decided on, which consisted in so arranging the latter that the bees had to pass through it to get in and out from their home, the queen excluder being placed over the outer entrance. The bees swarmed out again on the 24th, and returned and were afterwards found safely clustered in the desired place. Apparently, then, the best way would be to have a board with a groove 6 inches wide and ½ inch deep running through the centre on which to stand the empty skep. One end would then be placed at the entrance of the hive expected to swarm, and the other—which would be the new entrance—would be covered with the queen-excluding zinc. It might be advisable to use a skep with a feed-hole covered with ordinary perforated zinc, as the light might, perhaps, better cause the queen to ascend it, in the way of a drone-trap. *Expert.*

BROCKLESBY PARK.

LINCOLNSHIRE has not even yet quite lived down the evil reputation it unjustly gained. Many still think of it as a county of damp melancholy fens, with long lines of slimy ditches and still ponds of black water, and only relieved by scattered clumps of stunted trees. People who thus regard it, declare that land lighthouses are necessary to guide wayfarers through the sloughs of the trackless waste, probably founding their assertion on the supposed use Dunston Pillar was put to in the very old days. That all such statements are libellous, anyone, who knows Lincolnshire, will stoutly maintain. The county is now perfectly drained, and no more luxuriant pasture or corn land exists anywhere in the kingdom. Neither is it bereft of hills, for the long line of the wolds forms a purple background to nearly every prospect in the Lindsey division of the county. Despite the dykes, the air is dry and bracing, and a glance at a hydrographical map will show it to be one of the least rainy regions. Lincolnshire men, too, tillers of the soil though they mostly be, are yet among the best in the land. Was not the modern "Hub of the world," Boston in Massachusetts, settled from Lincolnshire? And were not Sir Isaac Newton, John Wesley, and Lord Tennyson all born and bred in the county? If anyone still doubts that Lincolnshire has natural beauty, let him hie to Brocklesby, Lord Yarborough's home, and see the grand woodland scenery there.

The Pelhams have been domiciled in their house in Lincolnshire ever since the days of the Plantagenets, and have always exemplified Wyclif's translation of a passage in Job, "the life of man is knighthood upon earth." For the last two hundred years they have been known as country gentlemen of the best type. On few estates have the same cordial relations existed for long generations between tenant and landlord. The magnificent castellated lodge was built by the tenants as a mark of gratitude, and a monument in the pleasure grounds is erected to a tenant "who in grateful respect bequeathed a legacy to his landlord." Members of the family, too, have played important parts in history. One, the Hon. George Pelham, is on the roll of the bishops of Lincoln. And what a famous roll it is! Among

the bishops of this see is Hugh, the sixth in order. He was one of the most saintly men that ever lived, and King John of England and William the Lion of Scotland helped to bear his bier. After him, came Robert Grosstete, the most learned man of his day, and a supporter of Simon de Montfort. Cardinal Beaufort and Wolsey held the bishopric for awhile, but both seem to have regarded it as a source of emolument rather than a cure of souls. Another well-known name is John Longland, who aided Henry VIII. so much in his divorce proceedings with Catharine of Arragon, that Storer even hints that the glory of the diocese was eclipsed under the Puritan and Calvinistic bishops that followed as a judgment from Heaven.

The first thought that strikes the visitor on entering Brocklesby Park through the aforesaid lodge, is "What a fine sporting estate." The surface is undulating, supporting rich pasture land, and stretching away to high Beech-woods on the one side, and on the other to belts and spinneys of younger trees. Scotch Firs, crowning the knolls, have a very pretty effect, and the Highland cattle, grazing round them, seem to love the shade which is kindly to them in summer and winter alike. A large sheet of water, with an island in the middle of it, overgrown with Willows, which in early spring were hung with golden catkins, gave an additional beauty to the peaceful scene. The park contains over 1000 acres, and the Beech-woods are so extensive, that one can drive for 12 miles without getting out of their shade. Finer Beech-woods, indeed, do not exist anywhere. Most of your readers have heard of the planting Duke of Athole. One of the Earls of Yarborough was no mean rival: for a tower in the woods, called Pelham's Tower, was erected when the then peer had planted 12½ millions of trees. The highest ground in the park, once the site of an ancient British tumulus, has been crowned with an elaborate building like a Greek temple, which is used as the family mausoleum. Forming a semicircle round this are some magnificent Cedars of Lebanon planted in 1794, when the mausoleum was built. They are among the finest specimens in the country, and are still in their heyday without any signs of old age. The prospect from the colonnade with the high Beech-woods of the park intersected with green glades in the foreground, and in the distance the Humber rolling seaward with majestic course is very lovely.

The grounds around the mansion are very tastefully laid out, and quite in keeping with the huge block of buildings. On the south side is a terrace-walk, 22 yards wide and fully 200 yards long, which has a very imposing appearance. Up to this broad walk spreads a far-reaching stretch of well-kept lawn, with magnificent forest-trees on either side, and here and there on its surface a clump of Rhododendrons or Laurels. Such a magnificent expanse of greensward is only to be seen in England. In fact, what strikes one most about the place is that it is so essentially English. The whole length of the walk is a line of standard Laurels, and under the high trees to the left are some masses of Dogwood, the crimson-tinted stems of which give a welcome glow of colour. It is curious that Dogwood is not more used for ornamental planting, nothing is so full of colour in the winter. On the west side of the house the trees come up closer to the fabric, and in front of a museum situated on this side are some tall gaunt old Cedars of Lebanon, and a magnificent *Pinus excelsa* 14½ feet in girth; and not far off is a picturesque Yew, spreading its lower branches, which have, in many cases, rooted again, over the lawn. A trim gravel path proceeds straight from the house, leading to some large copper Beeches, which also trail their lower branches on the ground; and an old-fashioned Rosery, where the Roses are trained in festoons and arches over iron wire-work. Opposite this are some prettily designed flower-beds. On the other two sides, trees with a dense growth of Laurels underneath, through which shady secluded walks wind girt the house. The hunting stables, for Brocklesby,

like Badminton, is one of the best known hunting centres, lie to the north, hidden by the high trees.

The visitor who has seen the pleasure grounds should on no account miss seeing the nursery. The path thither is by a grass walk, which is full of interest to the tree lover. At the beginning of it is a fine line of thriving Wellingtonias. Having walked by these, one emerges into a more open

planted out on the estate. Near the pretty cottage of the forester is an extensive pinetum. *Cryptomeria japonica* here makes a splendid specimen tree, as also do *Picea orientalis* and *Abies Lowii*. *Pinus insignis* and *P. excelsa* both thrive well; some of the trees of the latter apparently suffered some injury when young, and have grown up again from several stools. The effect is peculiar, but not

state of cultivation. The Vines are nearly one hundred years old, but still continue to produce Grapes of deep blue-black colour and luscious flavour; some enormous bunches of Muscat Hamburg being grown from the old Vines. The trees in the Peach-houses are being renewed, Humboldt Nectarine seems a great favourite with the energetic young gardener, Mr. Hobday—a good gardening

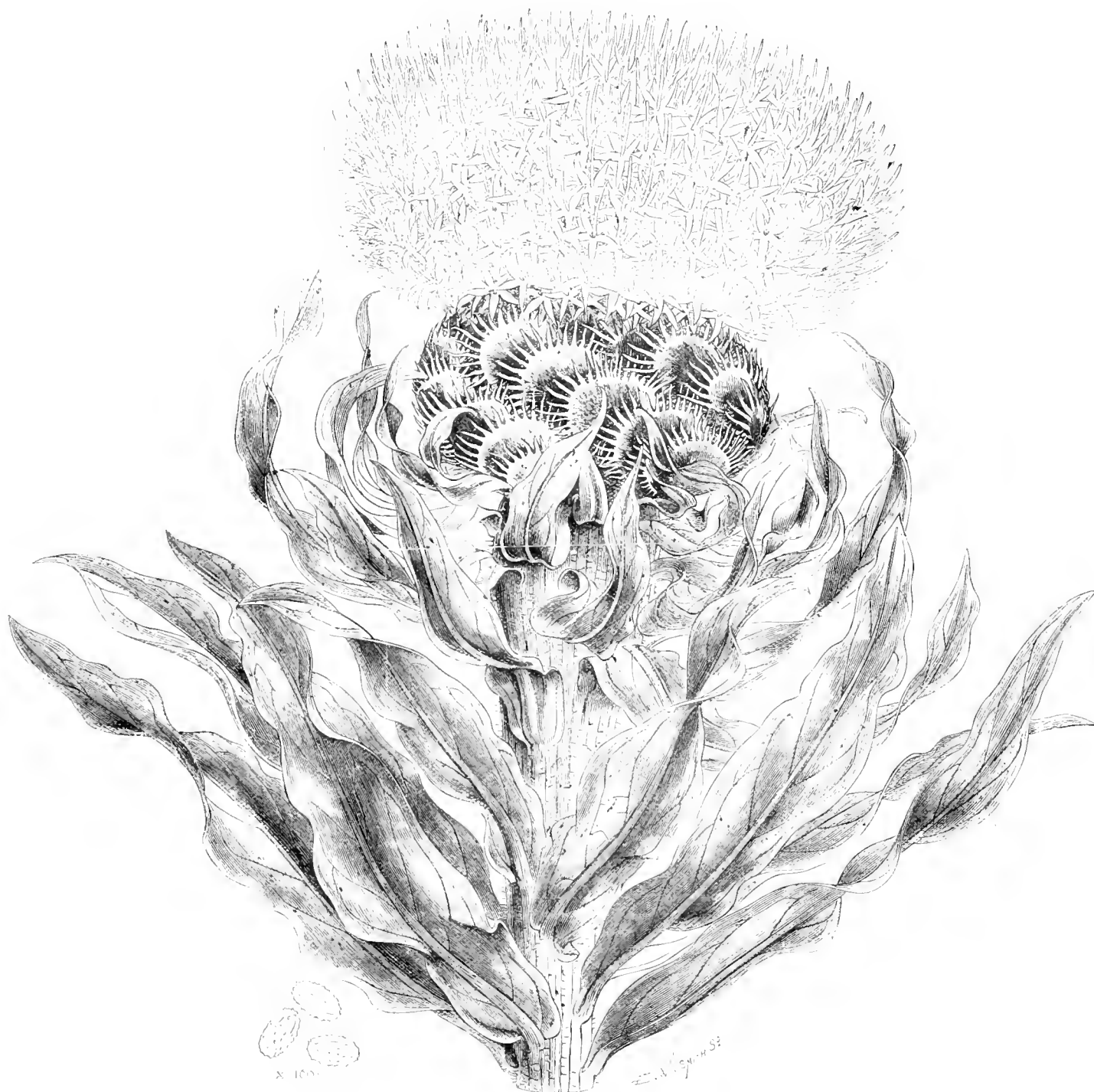


FIG. 4.—CENTAUREA MACROCEPHALA, HARDY PERENNIAL: FLOWER-HEADS YELLOW. (SEE P. 49, COL. C.)

space, where are some fine specimen Conifers, prominent being a tall Himalayan Spruce, and a wide-spreading *Pinus ponderosa*. *Abies pinsapo* and the *Araucarias* also find the soil to their liking. Next, the path leads through a dense mass of Laurels, which could not grow more luxuriantly in any place than they do here, and from which several huge Silver Firs tower up. The nursery itself contains a well-grown collection of young trees, destined to be

unpleasant to the sight. A great feature is the number of examples of *Juniperus fragrans*. No tree has such lovely Fern-like frondescence as this. It is a great pity it is not more frequently met with. *Picea pungens* and *Abies Hookeri* are two graceful trees, which bid fair to become valuable trees for planting. The soil, however, does not seem to suit the Douglas Firs.

There are 3 acres of kitchen garden under a high

name everybody will say. Asparagus is forced in large quantities by means of portable wooden frames. As in most gardens, there was a great slaughter of winter vegetables, Veitch's Model Broccoli being the only one that has showed any ability to resist the severe frosts. A very pretty part of this garden is the Rosery in front of the gardener's cottage. In the background is Brocklesby Church; planted near which are some notable trees, particularly a fine

Cryptomeria, and a Holly, which has grown up to a great height, with the habit of a Wellingtonia. The glory of the garden, however, is a grand *Salisburia adiantifolia*, which is without dispute almost without a rival in the country; it is nearly 60 feet high, and girths 6 feet at 3 feet up. I do not know if it has ever been figured, but it richly deserves to be so. *C. A. M. Carmichael.*

STRAWBERRIES.

ONE of our correspondents—a first-rate fruit-grower and judge of fruits—who, at our request, visited the Strawberry grounds of Messrs. Bunyard & Co., The Old Nurseries, Maidstone, *à propos* of the Strawberry Conference at Chiswick, sends us the following remarks for publication:—

A few days since, I had the pleasure of inspecting the collection of Strawberries here, consisting of something like ninety-two varieties.

"Surely you do not have a demand for all that number," I remarked, on hearing of the number grown. "Oh, no!" was the reply. "This plot which you see—about $1\frac{1}{2}$ acre—is devoted entirely to trials, where all varieties, from whatever source they may come, are grown side by side, so that a comparison can be made, and their several merits or demerits, as the case may be, determined." An excellent idea whereby one was enabled, at a glance, to see the habit and vigour of growth whether strong or weak; not that all the short growers were to be despised, for upon closer examination several of those which, viewed from a short distance, appear very weakly, proved upon closer examination to be really good in size of berry and flavour.

"There is a good strong grower," said my guide, and upon coming to the one pointed at, it proved to be Kitley's Goliath, and certainly it did not belie its name, as it was carrying a prodigious crop of fruit which was of excellent flavour.

Then almost side by side in competition were to be seen British Queen and Dr. Hogg, and in this particular instance the Dr. certainly was superior, but these being two such well-known and excellent sorts, growers would do well to plant them side by side, and decide for themselves which of the two suits their soil the better. Whichever is grown, it will need plenty of manure, and frequent renewals of the beds.

Harris's A 1 is a vigorous plant, and a good cropper, but it was not in condition at the time. Waterloo is a really good late variety, large, and of splendid colour. Then we come to the much-talked-of Noble, and if cropping qualities stand for much, then certainly it ought to be very much grown, although the flavour is about as poor as possible.

Commander is like a long President; it is of good flavour.

Trollope's Victoria is a pale-coloured, globular fruit. The plant is said to do well in smoky districts.

Auguste Nicaise is a strong grower, with large fruit, early, of good appearance, and good for pot-work.

Jubilee is likely to be a very valuable variety, it being one of the latest in bearing.

Countess has a short, sturdy growth; the flavour of the wedge-shaped fruits is good.

Newton Seedling is an excellent variety for preserving; it is an immense cropper.

Helen Gloede is very large, and excellent in flavour.

Carolina, as I saw it, is the greatest cropper of all; good for preserving. [Is this Carolina Superb, once thought so much of? ED.]

Aromatic is an excellent dessert fruit.

Alice Maude—wedge-shaped—resembles Keen's Seedling in flavour.

Aberdeen Favourite has sturdy growth, and is late and very distinct.

John Ruskin is said to be good for early forcing. It is a medium-sized, well-coloured, handsome

fruit. La Grosse Sucrée, in my opinion is one of the best all-round varieties for very early forcing. I have gathered fruits of it on Feb. 14 for several years past, and that without very hard forcing. It makes but few leaves, and consequently can be stood closer together than most others.

As a matter of course, Sir Charles Napier, President, and Sir J. Paxton were to be seen in large quantities; but being so well known it is superfluous to say more than—where they do well there are none to beat them as all-round varieties.

Many American Strawberries are being grown, but as they are, one and all, so poor in flavour, it is needless for me to say more, as that alone is sufficient to condemn them.

I might go on and describe many others, but the foregoing appeared to me to be the best. The firm will show a large quantity of sorts at the forthcoming Conference to be held at Chiswick. Several of the best alpine were carrying good crops; these plants are raised principally from seed.

I might add that there are several varieties which are supposed to be improvements upon Sir J. Paxton and President, but I was quite unable to detect any advance, but, on the other hand, they appeared not to be so good.

I think the thanks of the private gardeners will be due to Mr. Bunyard if eventually (which I know is his intention) he will bring his now very large collection down to something like eighteen or twenty-four varieties, and I think that number would cover all that are really worth growing.

BOOK NOTICE.

HOW TO GROW ONIONS. By Mr. J. A. Taplin. (London: Houlston & Sons, 7, Paternoster Buildings.)

THE above is the title of a pamphlet of twelve pages, designed to teach the art of growing exhibition Onions—those colossal bulbs so often seen at metropolitan and provincial shows. Why the author, who, by the way, is a good gardener, should say that his little work is written to show how "the true white Spanish Onion should be grown," we fail to understand, seeing that the treatment required by one variety is the same as one would apply to all others.

The directions are plainly given, and the most inexperienced person, if he follow them, ought to succeed as well as the best gardener. We must take exception to the extravagant use of cow-dung; a layer of this 6 inches thick laid over the already trenched land, and dug in to a depth of 3 inches, is "a little too thick," and amounts to a great many tons per acre; but as our author is merely writing about small Onion beds, it is not a very large quantity that would be employed.

Evidently Mr. Taplin is unaccustomed to editing, or we should have noted fewer errors in the small amount of letterpress comprised in the pamphlet.

FLORISTS' FLOWERS.

PAGE'S CHAMPION GREEN-EDGED AURICULA.

IN looking over some recent numbers of the *Gardeners' Chronicle*, I found a short note by my friend "R. D." upon this old variety, which was evidently considered a flower of considerable merit many years ago. It would, perhaps, ill become me to discourse upon the Auricula generally, but upon this variety in particular, a few moments, leisure afford me the pleasure of giving some references concerning it to "R. D." and others equally interested in it. To say when it was raised is not, so far as I am able, possible; but the date may certainly be put long previous to 1835, when it was figured in Smith's *Florists' Magazine*. This conclusion is arrived at by reference to that scarce

work, Emmerton's *Treatise on the Culture and Management of the Auricula, &c.*, for in the catalogue of varieties at the end of that book is an entry "Solomon Page's Champion." The edition quoted from is the 2nd, published in 1819, the 1st edition I have not, but it appeared four years previously. In Hogg's *Treatise on Florists' Flowers* (4th edition, 1823), Page's Champion also finds a place; and it may be found again as a coloured frontispiece to the pamphlet on the Auricula issued in 1843, as one of the separate numbers of Tyas's *Popular Flowers*. The *Florists' Journal* for 1843 also contains a mention of Page's Champion in the list of best green-edged Auriculas. *C. Harman Payne.*

BOOTH'S FREEDOM, LEIGH'S COLONEL TAYLOR, AND PAGE'S CHAMPION AURICULAS.

IT is interesting to Auricula growers to read the history of the best of the old Auriculas; the three best of the old green-edged varieties are, the one named at the head of this paper (and alluded to at p. 615, vol. ix.), Booth's Freedom, and Leigh's Colonel Taylor; the last-named is the best of the trio, and is still exhibited in good condition at uncertain intervals. The best truss of it seen recently was exhibited by me at the Royal Aquarium Exhibition last year, but I never knew a plant of it give a good truss a second time. I have before me a copy of the *Floricultural Cabinet* for the year 1833, in which it is stated, that this fine variety was exhibited some years previously by a Mr. Bailey, of the Clapton Nursery, "and in as fine flower as ever was exhibited perhaps, in England, and which he sold the same day to Mr. Brooks, of Ball's Pond Nursery, for the sum of five guineas;" but we are told the plant declined, and did not live to flower again.

Booth's Freedom I would place next to it, although it has angular paste, it possesses a beautiful green edge. This was placed at the head of the list of green-edged varieties sixty years ago, but it is now in a state of decadence, no grower being able to flower it in a presentable state. Mr. Simonite grows it better in smoky Sheffield than Mr. Horner can grow it in the pure air at Lowfields, or I can in Essex. We have both had plants more than once from Mr. Simonite, but can do nothing with it.

As for Page's Champion, I question whether anybody has it now. About fifteen years ago I had it from Mr. Horner, who grew and flowered it at that time; but except that it had a decided green edge, it had scarcely another quality to recommend it. The ground colour was a dull red, the edge very narrow, and the pips small. I had plants of it three or four times, but could not get it to grow under all the methods of culture I could think of.

Amongst the named Auriculas cultivated sixty years ago, was one grown under the name of Davey's Champion; it is shortly described as "black with a white edge." In the same paragraph in which this variety is described, there is also mention made of "a large sweet-scented double yellow Auricula," probably the same variety now in existence, and cultivated under the name of Yellow Prince. The green-edged class of Auriculas wants improving, but the work of raising new varieties in this class is very disappointing. I have now some hundreds of seedlings from the best green-edged varieties, and have flowered hundreds; but the only fair offer we have is the one certificated at most of the exhibitions under the name of Abbé Lizst. Mr. Simonite has produced a good green in Kev. F. D. Horner; and a seedling of Mr. Barlow's, grown and exhibited by Mr. Henwood under the name of Mrs. Henwood, promises well; but the truss had only three pips upon it, which is not enough to certificate a plant upon. *J. Douglas.*

VEGETABLES.

LETTUCES.

GENERALLY, gardeners sow Lettuces in beds, and transplant the seedlings, which answers very well early in the season, but not so at this time of year,

unless by chance the weather happens to be favourable for rapid establishment of the plants, and even then they never do so well as when sown where they are to grow and turn in. The why and wherefore of this is easy of explanation; plants that are pulled up must of necessity have their tap roots injured, and however carefully they may be moved, they are sure to receive some kind of check to growth, and this not only prevents them attaining to full size and hearting properly, but in the majority of cases, it causes them to bolt. To prevent this and to save labour, shallow drills or drills according to the number of Lettuce required should be drawn, and afforded a sprinkling of water, and after that has soaked in, the seed should be sown and covered about a quarter inch deep with fine dry soil. Managed in this way, evaporation of moisture, and the cracking of the soil is prevented, and the seeds germinate very quickly. As soon as the

nowned gardens. Situated, as they are, on the road to Trinity, there was nothing inviting in their external gateways even to a young aspirant for horticultural knowledge in those days, and there has been little, if any, alteration. The private door to the Curator's house, and the larger doors of entrance and exit, appear precisely the same. For at least a hundred yards along the roadway, this portion of Edinburgh, in so far as the houses are concerned, has not been touched. The Araucarias and the Deodars in the limited frontages show a departure from the bloom and vigour of youth, in their bare boles and struggling-for-life branches; but if we had been, so to speak, dropped from the clouds, we should have little difficulty in declaring our whereabouts, even after an intervening period of forty years. In the interior there have been considerable alterations. The deciduous and evergreen trees, which the late James McNab took so great a delight

the domestic chimneys, and the prodigal waste of power in coal combustion, which act against the purity of such an atmosphere as this portion of Midlothian ought to present. Even some of the deciduous trees are affected, and their lives crippled, with this smoke demon. Still, the garden was beautiful, even after a March wind, which was eating into the very vitals of everything tender in the way of growth. How grandly the hybrid Rhododendrons do, and how beautiful are the Aucuba leaves! The very Golden Queen Holly, although a little begrimed, showed what it would be on the return of growth. However, I am not concerned at this time in going into all the interesting arboricultural subjects which such a garden as Edinburgh presents. My object is more to have a running commentary on the "tit-bits" that struck my fancy.

The extent of the gardens now, including the Experimental Garden, which was a separate concern

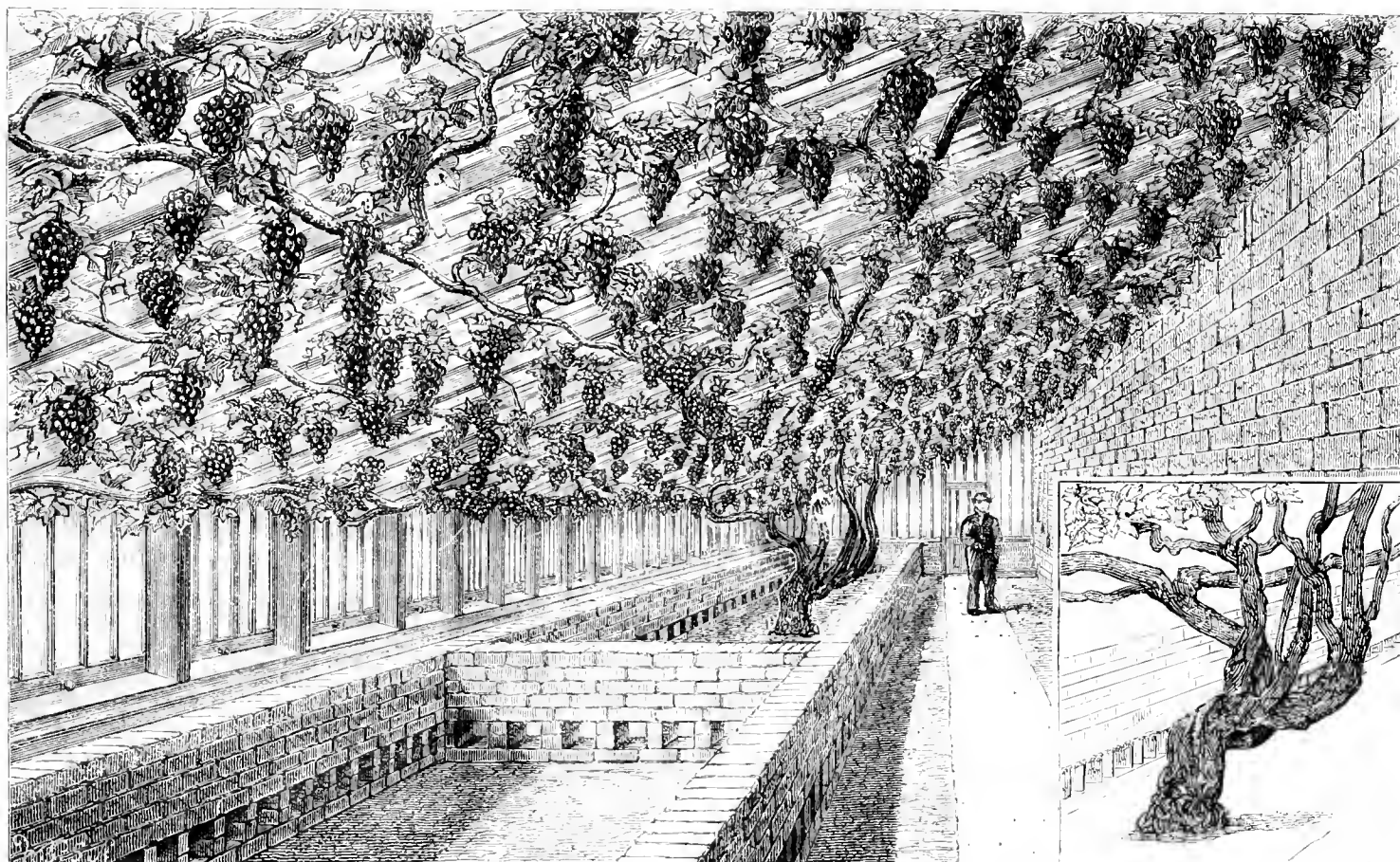


FIG. 5.—GRAPES AT CUMBERLAND LODGE. (SEE P. 13.)

plants are up they should be thinned out, leaving the best and strongest at about 12 inches apart. A very good place for Lettuce at this season is on the ridges between the rows of Celery, where there is a great depth of soil; and they also do well on a north or half-shady border, as the full force of the sun is not favourable to growth in the Lettuce. For summer and autumn use the Cos kinds are the best, and the Paris White is as good as any, as it grows large, hearts in close, and is crisp, tender, and of good flavour. For sowing about the middle of August to stand the winter, none are equal to Hicks' Hardy Green and the White Seeded Bath Cos, which are first-class in spring. J. S.

SCOTLAND.

THE EDINBURGH BOTANIC GARDENS.

It is now quite forty years, all told, since the writer first entered the portals of these world-re-

in, and which he handled and turned over at all seasons of the year, like a master of the art, have grown, some of them, to goodly size; others are going down the hill. The pruned-in Deodars, which were a great hobby of his, still indicate where the knife has been at work; but the hand of Time has corrected the formality of severe pruning in some instances, and the plantations of them in the rising grounds assume as natural and as beautiful a feature as the Douglas Firs on the slopes of the embankment, where the railway runs through between Perth and Dankeld, in the Scone estate of Lord Mansfield. After all, severe amputation upon any arboreal subject, whether deciduous or evergreen, is not at all necessary. Correction is good, on the principle of training a tree up in the way it should go; more than that is questionable forestry practice.

Even Elinburgh Botanic Garden subjects have their troubles. You cannot draw your hand across the leaves of an Aucuba, a Holly, a Laurel, or a Rhododendron, without getting it blackened. The public works are not so numerous, but there are always

in the days I speak of, and the new ground that has been taken in on the east side for arboretum and other purposes, cover an area of about 53 acres. The botanical collection of plants has been removed to a bowling green-like paddock, and arranged in oblong strips set upon a grassy groundwork. There is a good deal of the cemetery appearance about this arrangement, but the advantages of it are obvious as a sort of object botanical text-book, class following class with precise regularity. There are in this paddock 2500 species all distinctly named, the difficulty seems to be to get a composition label that will stand all weathers and remain legible—nothing appears to equal the old wood label written upon in ink. The alpine arrangement has always been an interesting one, and these stone pockets which Mr. McNab had put down many years ago are now beginning to lose much of their formality. There are 2500 species in that undulating arrangement of pure alpine, and if we add the species of Ferns to this, the bulk will total something like 3000 species. These different collections give the 2000 studenta

that more or less dip into them with the eye of a botanist, a grand exploring field, second indeed to none anywhere I know. Of course all such important collections require a reserve paddock to draw from, as one tenderling goes after another, and the wonder is how the many different species can be perpetuated. The houses themselves are old, too old indeed for a national garden of this kind. The bulk of them I went through forty years ago, and although there is variety of feature and general cultivation on a scale corresponding with the times, some of the subjects merit better house room.

No. 1 house is a tropical Orchid house, in which some *Nepenthes* are suspended from the roof, and form capital fellow plants to all our East Indian *Dendrobium* and *Cypripediums* and *Cymbidiums* and such like. Some recent importations of *Dendrobium nobile* are very grand forms, large, brilliant, and in every way eclipsing the older types. The colouring is vivid, and the variations of labellum are so marked, as to point almost to the infusion of foreign blood. It is one of the most beautiful, as it certainly is one of the most lasting and useful of the whole *Dendrobium* race.

No. 2 house is filled with officinal plants, one superb plant of the Sugar Cane, with stems quite 20 feet long, had been found out by the rats, and these rodent pests having a taste for the saccharine matter within, bored into the canes and would have soon destroyed the ornamental appearance of the plant, but for the protection of a couple of cats which these vermin did not care to face, though they doubled past all sorts of poison baits. *Stangeria paradoxa* is a very distinct Cycadaceous plant, with fine glaucous-green pinnate leaves, and surmounted at the time of our visit with a male inflorescence, which is not unlike a cone of some of our larger *Piceas* with equally prominent scales.

No. 3 house had a distinguished example of the downy Sea-side Grape, *Coccoloba pubescens*, a plant in every way worthy of a second look but for the smell of Turkey Rhabarb about it. Another striking plant in this house, in every way suited for our warm stoves, was the scarlet-cymed *Brodiaea coccinea*.

No. 4 house is fitted with a collection of succulents, in which the larger *Euphorbias* and *Aloes*, and sundry other plants, fill up the lofty space around the back. Some of the plants are of great age, notably *Dacrydium cupressinum*, which, with its long drooping multiple branches, with the finest of leaflets, makes it a striking object in any botanical collection. The *Dammara australis* is also notable from its close fastigate habit, going up quite 50 feet towards the glass. The Wax Palm, *Ceroxylon aedicola*, lightens up the greenery of the group with its fine silvery-corded rachis.

No. 5 and 6 houses are full of miscellaneous plants, and such things as New Holland plants. *Acacia Riceana*, trained up the rafters, looks particularly well, and the inflorescence is just one mass, encouraged all the more by being shorn of a portion of its spraying-like branches. *Edwardsia grandiflora* is another striking object—indeed we note that it was figured in the *Botanical Magazine* in 1820 under the name of *Edwardsia Macnabiana*.

No. 7 is a house in which are a number of the useful hybrid sweet-scented *Rhododendrons*—some interesting crosses of the dwarf ciliare and *Edgworthii*, and in front are some of the rarer alpine, such as choice *Primulas*, and some *Saxifragas* as *Boydii*, *Burseriana*, and such-like gems. In an odd corner are some choice bits of filmy Ferns, nothing cooler or more sparkling with the water-drops attending its leaves than *Trichomanes reiforme*. In No. 8 house, at the end, is a good general assortment of *Gleichenias*; and among the flowering plants none more distinguished than *Banera rubioides*.

The great Palm-house stands alone. What a glorious assortment of the Palm family there is here, and in giant growth, too! The great *Seaforthias*, in tubs 9 by 5 feet, are a wonder in themselves. It makes one almost dizzy looking to their summits. Straight as a gun-barrel, up they go, as clean as the finest Malacca walking-cane that ever came from the Indies. The tiers of leaves have left their mark

every foot or so, but what a grand thing it is to see an endogenous tree of this kind of so gigantic a stature. Some couple have been spared, and sent to Kew, and we do not envy either the packers or the carriers of plants of such Titanic proportions as these. What renders them intensely interesting to naturalists is the immense bunches of fruit which they carry. The Grapes of Eschol were as nothing to these; and the 26-pounder that was shown at Edinburgh in 1865 was but a baby in appearance to these congregated clusters. *Livistonia chinensis* is equally distinguished—great stems, straight as a gun-barrel, and bearing beautiful leaves towards the extremity. *Sabal umbraculifera*, as a contrasting Palm to these named, is grand; its finely-cut palmate leaves, much divided with the yellowish sheen in the rachis, also loaded with fruit, is a sight worth going miles to see. These are but the giants in a house filled with selected subjects of the Palm family. One thing we noted, quantities of *Imantophyllum* (*Cliveia*) growing in pots set in the floor quite 80 feet from the light above, and shaded with dense frondage, all flowering as freely as if the plants had been rubbing leaves with the glass. Mr. Lindsay says, that this is the only plant that will flower in the Palm-house, and a full set of them is kept there throughout the year.

In the miscellaneous low houses there is much to engage and rivet the attention. The *Nepenthes*-house itself, although small, is full of the best of that race of plants; they are never permitted to raise their heads high; indeed, they seemed pruned to the quick, like an Apple espalier tree. In this way the pitchers keep their form distinct to themselves, as they ought to do, and they appear to get plenty of light. The *N. Dicksoniana* is now well known; it takes rank with the best of its compeers, and is clearly superior to that well-known and much-appreciated *Rafflesiana*; pity that *Rajah* is so bad to do. Mr. Lindsay's manipulation among this breed is well known, and he seems to be a most accomplished cross-breeder. It is a good thing that the pollen of any of this species carries well, and can be utilised after a few days' journey. In this way we may be able to get at the blood of some of the rarer ones that have been left in their East Indian Island's homes.

One thing is worth noting here, and that is how well *Ouvirandra fenestralis* grows. The secret of its growth is this: it is battened down into its water-hold in total darkness. In this way the *confervae* cannot enjoy themselves as they apparently do in light.

There is a fine collection of insectivorous plants here. Foremost among them, because of its rarity, is the South African *Drosera rotundifolia dentata*. This is the giant of a pigmy race, reaching quite thirty inches, in pyramidal-branched style, from the surface of the pot. Its rosette-looking leaves, in formal clusters up the stem, as glutinous as possible, command attention. This species has evidently been lost to the country, in others places the only two living plants being in the Edinburgh Botanic gardens. It is by far the best fly-catcher Mr. Lindsay has on the premises, and when it does catch them, there is no chance of their escape. Among other sorts is *Drosera auriculata*, which is the lowest of growers, with alternate leaves on a needle-looking stem; then there are *dichotoma*, *capensis*, and others, making up a striking looking group, in point of variety, stature, and feature.

It is quite a treat having an hour or two with an enthusiast among such a varied lot of plants as is under Mr. Lindsay's charge. Some we admire, and peer into; others we look at, and pass by. Truly, there are plants and flowers for all mankind, no matter whether they be clad in "hadden-grey" or "West of England broadcloth." *J. A.*

THE WEATHER IN THE NORTH OF SCOTLAND.

The trite saying that "Winter lingering chills the lap of spring," was well verified in the north this season. The cold, ungenial weather which pre-

vailed during March and April kept vegetation in complete check, and at the present time the growth is much later this year than last. Before the rain came the appearance of the country was extremely bleak, but a vast change is now to be noticed. The grass made marvellous progress, and the fields are clothed with a vivid green. *A.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

DENDROBIUMS.—These plants are in full growth, and any inattention in regard to heat and moisture will cause the new growth to finish up prematurely, and a new growth to break away at the base of the first, a matter always to be regretted, especially when the species is deciduous. Again, if sudden checks from any cause whatever are given the plants at this period, insects are very apt to follow them. The outside temperature here still remains low, the glass showing a minimum of 45° on three nights during the past week, which makes the use of fireheat for all divisions, with the exception of the cool house, a necessity.

CŒLOGYNE MASSANGIANA.—This is a beautiful Orchid for midsummer flowering. If the plants are large, they may be broken up, as a much better effect is afforded when several plants are hung here and there, rather than having one or two large specimens only, and one-half of the flowers are hidden from view. The plant is a good grower, so that no fear need be felt in thus dividing it. It does well in a compost consisting of two parts fibrous peat, one of good turf loam, and one of sphagnum moss, crocks, with some silver-sand. Baskets of Teak-wood, or earthenware pans, should be used, as the spikes of flowers lose their beauty in a great degree unless they are above the eye, the spike then showing all its flowers.

I grow the plants of *Cattleya Dowiana* and *C. aurea* with the *Dendrobiums*, these requiring the same degree of heat and moisture when growing; they should also be grown in baskets or pans, the latter being preferred, as the plants can readily be put into larger pans when necessary, and there are no ribs of wood to coil round, as in a basket.

Watering of the plants in every department should now have careful attention, and but few plants will need be kept dry at this part of the season; any plants that may come to hand, unless they come from very good sources, should be examined at the root, and unless the compost is clean and sweet, they should be turned out and repotted. I have known numbers of *Orchids* surface dressed for sale, and which the buyers lost, owing to the belief that no repotting was needed. *Thrips* are often introduced into houses by new purchases. It is good practice with a new plant to place it in the potting shed, and fumigate and sponge it to ensure cleanliness before putting it with the others.

ODONTOGLOSSUM ROEZLI is a plant that suffers severely if *thrips* be allowed to infest it, and as a remedy I practice dipping the plants in a solution of soft-soap and Fir-tree oil and water—about three-parts of the first to one of the second—once a fortnight; this keeps them away effectually. Should cool nights continue, the temperatures should be kept up by fire-heat. The minimum for the East India-house being 70°; *Cattleya*-house, 65°; Intermediate-house, 60°; and cool-house, 50°.—*A. G. Catt, Parkfield Gardens, Hallow, Worcester.*

THE HARDY FRUIT GARDEN.

VINES ON OPEN WALLS.—Train the young wood thinly, so that the sun may reach it. Fruit-bearing lateral-shoots should be stopped at one or two joints beyond the bunch, sub-laterals and tendrils stopped as fast as they appear, and all useless shoots removed. When a sufficient crop of fruit is set, reduce the number of bunches, and thin the berries, when of the size of Peas; leaders may be allowed to extend, but not much beyond the length to which it is intended to prune them back to in the autumn; but pinch out the tips when that point is reached. If the Vines are in a shallow well-made border, supply them with plenty of water, and occasionally sprinkle the soil with guano, or Thomson's Vine Manure. Elevated borders are

best for the Vines, and they should not be thickly coated with dung, as this shuts out sunbeats, of which they cannot have too much. Should mildew appear, dust affected parts with flowers-of-sulphur, and occasionally syringe the foliage with clean soft water up to the time when colouring shows in the fruit.

FIGS.—Thin out useless wood, and stop some of the shoots with fruits, others being laid in at full length, stopping being regulated according to growth. Wherever practicable, the Fig should not be much restricted, but allowed plenty of space to develop, the tree then being more fruitful. I may here mention, that the finest and heaviest crop of fruit which ever came under my notice was on trees which had at one time been trained to the wall, but afterwards left uncared for; this was at Fairlawn, Tonbridge. Should the roots be confined in narrow borders, do not let the trees suffer from want of water; and while heavily mulching of the roots is by some considered harmful, frequent doses of rich liquid may always be applied during growth, affording enough to moisten the soil throughout.

STRAWBERRIES.—These should be gathered daily when the berries are dry, the largest and finest with stalks for dessert, and the rest without, for preserving. Vicomtesse Héricart de Thury is a good preserving variety, for it is a sure and heavy cropper, and the colour of the fruits better than that of some others. The present is a good time for buyers of Strawberry plants to pay a visit to the nurseries, and take notes of the best varieties. *H. Markham, Mereworth Castle, Maidstone.*

PLANTS UNDER GLASS.

THE GREENHOUSE.—The early-flowering species and varieties of Epacris, which have been hardened off, after completing their growth, may be placed out-of-doors, on a bed of fine coal-ashes, care being taken to shade the pots from the sun's rays, and there should be some means of protecting the plants from heavy rains; an oiled canvas cover, stretched on a light frame of wood, answers well. The later flowering varieties, which have not finished their growth, should be kept indoors for a few weeks longer, that is, until growth is finished. *Dracophyllum gracile*, plants of which have been in flower for some time, and are now getting past their best, should have all the old flowers removed, and be encouraged to make fresh growth; the same holds good of *Aphelaxis macrantha* and its varieties. Great care is always necessary in affording water to these plants. Plants of *Polygalas* may now be cut back, and after they have commenced to break, they should be repotted into pots one or two sizes larger, keeping them close for a few weeks till fresh roots are formed. Care must be taken not to over-water these plants after repotting, until they have taken well to the fresh material, therefore they are best when placed under cover.

HEATHS.—Many species and varieties which have been flowering for some time should now have all dead flowers and seed-vessels cut off, and those which bloomed early in the season and have started well into growth, and which may stand in need of repotting, may now be attended to. In potting Heaths, make use of hard fibrous peat of the best quality, coarse and clean silver-sand, or broken sandstone and fine charcoal, and use clean pots, making the drainage perfect. Reduce slightly the old ball by picking away the outside with a sharp pointed stick, and if the old crocks are firmly embedded, leave them alone. The material should be rammed firmly round the old ball, so that the water cannot pass through it too freely, but well moisten the old ball in its passage through the mass. Keep the neck of the plant slightly elevated above the general level; do not cover the old ball with more than half an inch of new material, and leave ample space for water. Pot no plant when in a dry state. Newly-potted plants should be placed in a cold pit, and kept somewhat close for a few weeks, afterwards affording air freely. Water must be carefully afforded Heaths after repotting, and rain, or river water not running over chalk should be used, well water being often injurious. A sharp watch must be kept on the plants, and should mildew be detected, dust the affected parts with flowers-of-sulphur. Autumn-flowering varieties of Heaths, if placed out-of-doors, must not be allowed to suffer from want of water at the roots, or, on the contrary, from too much rain.

HERBACEOUS CALCEOLARIAS.—The present is a suitable time to sow seeds of this plant, as by so

doing, strong well-established plants are obtained before winter. Plants which are weak at the commencement of winter, remain weak so long as they live. Be careful not to sow the seeds thickly, as crowding in the seed-pans renders the plants liable to grow weakly from the first. Rich loam, leaf-mould, and silver-sand, passed through a fine sieve, makes a good compost in which to sow. *R. Milner, Penrice Castle, Swansea.*

FRUITS UNDER GLASS.

STRAWBERRIES.—I gave some directions in a previous Calendar as to the manner of dealing with these plants so as to secure early runners, and now the work of layering should be proceeded with. The recent showers have been favourable to growth, and there should be no difficulty in carrying out the work, beginning, first of all, with the earlier varieties, *La Grosse Sacrée*, *Vicomtesse Héricart de Thury*, and others. I like the last-named Strawberry which, although small, is prolific, very early, and of rich flavour, besides throwing its flower-spikes up above the foliage early in the year. The runners of these varieties may be layered direct into fruiting pots, small 32's or 60's, if for late fruiting, repotting them in this month; and I prefer the latter method, as I find they do best for late and mid-season forcing. As late forcers, *Keen's Seedling*, *President*, *Sir J. Paxton*, and *Sir C. Napier*, are not easily beaten, although if large fruits are looked for, *James Veitch* and *Auguste Nicaise* should be included. For late work in pots, *British Queen*, where it succeeds, is the best Strawberry grown; *Waterloo*, which I have grown this year, takes a long time to ripen, but is good for growing outside on a north border, and as it is the latest, it prolongs the Strawberry season considerably. To have well-matured crowns, it is necessary to pot the runners this month, and even the latest lot should not be left beyond the first week in August, so that the preparation of runners is an important matter when large fruits, and plenty of them, are desired.

MELONS.—Succession plants must have the lateral growth stopped, and be earthed up. Fruits will now be plentiful if seeds were sown at intervals of two or three weeks. Melons at this season bear fruit and ripen without much heat of an artificial kind, and those with scanty means at their command can obtain well-flavoured fruits from garden frames and other structures, the only drawback being damp. To avoid this, the plants should be planted on mounds brought up near the glass, and composed of good loam, mortar rubble, but no manure, the last-named being supplied in the form of liquid, or by top-dressing. In a close garden frame much rotted manure tends to cause canker, thus preventing the finishing of the fruits. To lessen the chances of having canker, air the frames freely early in the day, and employ the above compost. It is a good old plan to make a trellis of Hazel sticks or iron rods to support the bine, and bring the fruits close up to the light, besides keeping it clean and less liable to injury from slugs. The flavour of Melons grown in this way is better than when they are allowed to lay on the ground. Seeds may be sown up to the first week in August, but the plants will require to be grown in heated pits or houses. Some advise later sowings, but I do not, as fruits of poor flavour are of but little value. *G. Wythes, Syon House, Brentford.*

THE KITCHEN GARDEN.

CARROTS.—A sowing of *Early Nantes* or other *Short Horn* variety may be made for drawing whilst young, and thus form a supply which will help to economise the main crops. A warm border, facing south or south-west, is a suitable place for this sowing, and where the beds may be protected from frost with lights or mats; if frames can be spared, these are better still, the lights not being wanted before cold weather has set in. The wireworm and the Carrot maggot are, in some soils, great foes to the Carrot; but these summer sowings are not so liable to their attacks as the earlier ones. As a preventive, the ground should be well dressed with soot and wood ashes, which should be well mixed with the soil or sown in the drills before the seed is sown.

PARSLEY.—Where a constant supply is required, a sowing should at once be made on a warm border, and in such a manner that it may be protected in winter with glass lights or mats stretched on hoops. To grow it really well with finely-curved leaves,

a deeply tilled rich moist soil is required. Parsley in some gardens is much injured by wireworms, and where this is the case, the ground should be well dressed with soot, and the plants watered occasionally at the roots with soapy water. When the plants are large enough they should be thinned to 6 or 8 inches apart in the rows, and kept free of weeds and encouraged to make rapid growth so that by the end of the summer a good yield of fine leaves may be secured, that will last until the spring, which it will do if properly protected in the cold weather. Plants sown may also be lifted at a later date, and planted on a warm border 8 to 10 inches apart, where protection may be given them during severe weather, but I give preference to sowings made now.

SPINACH.—A good breadth may now be sown for autumn use in drills 16 inches apart in well-tilled rich soil. Before sowing make the ground moderately firm, and rake it level before drawing the drills. When the plants are up, thin them to 3 inches apart at first, and afterwards to 6 inches. They may be a little crowded, but this is an advantage rather than otherwise, as frost and the black grub will now and then destroy some of them. Should this insect prove very troublesome, it is a good plan to make shallow furrows very near to the plants, taking care not to injure them, and pick up the grubs thus unearthed, depositing them safely in a jar for destruction. Birds will observe the disturbance of the soil, and search for the grubs.

CELERY.—The earliest planted-out Celery should have all suckers removed, and be kept well supplied with diluted manure water. If the Celery maggot has appeared, carefully pick off and burn all affected leaves, and frequently dress the plants with soot on dewy mornings. Keep the leaves upright by loosely tying them together with matting.

Finish the planting of *Kales*, *Chou de Burghley*, *Walcheren*, and *Autumn Giant Cauliflower*. *C. J. Waite, Glenhurst Gardens, Esher.*

THE FLOWER GARDEN.

SUB-TROPICAL BEDDERS.—These, consisting for the most part of seedling plants and of rapid growers, require to be kept uniformly moist at the roots, and they have made great progress during the last fortnight. Tall-growing plants which are liable to injury from wind, should be carefully tied from time to time to stout stakes, doing this in such a way as not to spoil the natural habits of the plants, bearing in mind that stakes and ties are used in the garden owing to necessity and not as ornaments, and therefore they should be kept as much as possible out of sight. A portion of such plants as *Abutilon*, *Acacia lophantha*, *Cannabis gigantea* (giant Hemp), *Grevillea robusta*, *Gunnera scabra*, and *Eucalyptus citriiflora* should have the points of the leading shoots pinched off with a view to develop compactness of growth and diversity of form.

GENERAL WORK.—This will consist in mowing and sweeping lawns, weeding and rolling the gravel walks, and hoeing them where they are made of shell or sea-sand; clipping grass verges, making secure the young shoots of climbers of every description on walls, rustic poles, Rose temples, and such-like structures, removing where opportunity permits of its being done old shoots to make room for young ones, and tying-in the shoots in such a manner as will avoid formality as much as possible, simply tying them in to cover space or prevent them being injured by the wind. The shoots where likely to get crowded should be thinned out, and not stopped. To the stopping of the shoots of climbers generally is due many, if not all, of the failures to flower these plants which are recorded from time to time; when the young shoots are stopped, lateral growths in plenty instead of flowers are produced. In tying plants, especially those that are fast growers, leave sufficient room in the ties for the shoots to grow without being restricted. Knowing from experience that this simple though necessary provision for the welfare of the plants is sometimes over-looked to the injury of the plants, I mention it here as a warning note. The picking off of blooms of carpet and bedding plants generally, the pinching and pegging out of shoots and the removal of weeds, and on Roses of over-blown blossoms, require daily attention. Plants in the reserve garden for taking the place of the summer-bedders in October must not be forgotten in the anxiety to produce a good summer effect in this department, and they must be kept free from weeds. *H. W. Ward, Lonford Castle.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

MONDAY, JULY 13—Eastbourne Horticultural Society.

SHOWS.

TUESDAY, JULY 14 { Wolverhampton and National Pink Society (three days).

WEDNESDAY, JULY 15—Ealing.

THURSDAY, JULY 18 { Hereford National Rose, Trentham, Holensburgh, Highgate, Ecton and Bedfordshire.

SATURDAY, JULY 18—Manchester Royal Botanic Rose.

SALES.

TUESDAY, JULY 14 { Orchids, at Protheroe & Morris' Rooms, Stove and Greenhouse Plants, at Leyton, by Protheroe & Morris.

FRIDAY, JULY 18 { Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.4.

The Royal Horticultural Society. THE first of this year's Conferences in connection with exhibitions under the auspices of this Society, were held during the past week at Chiswick. On Tuesday the subjects treated of were "Hardy Summer Perennial Plants;" and on Wednesday, "Strawberries, Gooseberries, Raspberries, Currants, and other Small Fruits." On Tuesday the attendance would have been much larger, but for the unpropitious weather, rain falling in torrents the whole of the afternoon. There was a good show of hardy perennials, and a fair collection of Strawberries, but on the whole, it must be admitted, that this has been the least successful of the Chiswick conferences, and excited less interest among the fraternity. One very interesting exhibit consisted in the fruit-drying apparatus of Messrs. MAYFARTH & Co., which was shown at work, and afforded an excellent illustration of a cheap and speedy method of dealing with surplus fruit, and of preserving it for future use. Every fruit farmer should see this simple apparatus for himself. See also p. 53.

Steps should be taken to ensure a more interesting programme and a larger attendance at these conferences in future. The Conifer Congress in October offers a fine field, and, being at once of high practical, æsthetic and scientific importance, should be one of foremost interest. We trust our anticipations may be realised.

The Chairman (Mr. W. MARSHALL) in opening the proceedings on Tuesday, said the Council had arranged that the subject of that Conference should be "Hardy Summer Perennial Plants," a class of flowers which he thought had been, as a rule, overlooked by gardeners, and which had not received that attention to which they were justly entitled. He should be the last to decry any class of plants, but he thought it would be admitted that such plants as Orchids were luxuries for those who had a large balance at their banker's; in fact, they were the plants of the few. On the other hand, the flowers they had met that day to discuss were the flowers of the many, and for a reasonable outlay, a large collection could be got together, sufficient, if judiciously chosen, to last nearly the whole year round. They were, moreover, very good-tempered plants, and would put up with a great deal of ill-treatment. He was quite sure that if those who attended that meeting, and others which were to follow, could at the end honestly say they had learnt something, the Council would be more than repaid for the trouble they had been put to in connection with those Conferences.

WILD GARDENING IN MEADOW GRASS.

Mr. W. ROBINSON contributed a paper (which was read by the Rev. W. WILKS) on the subject of "Wild Gardening in Meadow Grass," in which the writer advocated what would practically be the conversion of our meadows into the semblance of those seen in Switzerland in early summer. This is to be effected by the wholesale planting of bulbs and other plants whose foliage dies down before the grass is ready to be cut.

Miss BROWNING HALL (Algiers), asked whether wire-worms would not eat the bulbs which were left in the ground year after year.

The chairman replied that there could be no doubt that they would do so; and Mr. CHARLES PEARSON said the best remedy for these pests was to spread broken Rapecake at the roots, which the wireworms would eat in preference to the plants.

The Rev. H. EWBANK then read a paper on the subject of the "Summer Flowers in my Garden," in which he sounded the praises of stately summer flowers like Eremurus, Fernla, Romneya, Lilies, &c. Alluding to the Oncocyclis group of Irises, which are particularly difficult to grow, the writer advocated the avoidance of manure, the thorough drying of the roots in July and August, and protecting them under a plate of glass. *Cianthus Dampieri* might be grown by grafting it on *C. puniceus*. The hardness of suckers, recently mentioned in our columns, was adverted to, and many hints given as the culture of "refractory" subjects, such as Mr. EWBANK delights in, and which he subdues by making himself acquainted with their manners and customs, and managing them accordingly. Mr. EWBANK'S paper, containing the experience of a persevering enthusiast, was full of valuable matter, but those who would succeed must be prepared to make the sacrifice of time, and use the patience and intelligence that he does.

PICTURESQUE HARDY SUMMER PERENNIAL PLANTS.

Miss JEKYLL (Munstead) contributed a paper, in which she dealt with hardy summer plants from the picturesque point of view. The paper was read by the Rev. W. WILKS; but before doing so, the Rev. W. WILKS said he would like to publicly express his own deep regret at the loss they had sustained in their friend, the Rev. A. RAWSON, and he was sure there were many present who joined with him in that deep regret. Mr. RAWSON was a most diligent student, and a most painstaking observer—points greatly to be desired in a horticulturist. They could always believe in any report he might send in about any peculiar growth or extraordinary find, and it never came into one's mind, in reference to him, as it would in the case of many others, to say, "Oh, he has probably made a mistake." They knew that Mr. RAWSON was such a wonderfully keen observer, that anything that came from him was the actual fact.

LABELS.

In the discussion which followed Miss JEKYLL'S paper, the Rev. W. WILKS, referring to that lady's statement that labels must be absolutely abolished from the pleasure-garden, remarked that Miss JEKYLL must have a most wonderful head to remember all the varieties in her garden when a visitor happened to say to her, "Oh, what is that? it is pretty!" He knew every flower in his own garden, but he could not name them at the moment, and if he were to abolish labels he was afraid he should soon get into an inextricable confusion. Speaking entirely for himself, his experience was that gardeners, as a rule, were not educated in the best grammar schools, and would, without the assistance of labels, give the most extraordinary names to flowers to any visitors who might call during the absence of the family. He strongly deprecated the removal of labels, which spoiled for themselves, and prevented the lover of flowers from getting a little bit mixed.

Dr. MASTERS said he should like to know the method pursued by Mr. H. EWBANK in the great label question. For his own part he had no difficulty at all in following Miss JEKYLL'S injunctions, as the labels abolished themselves in the most surprising manner.

The Rev. H. EWBANK said he could not at all agree with Miss JEKYLL in this matter. He looked upon gardening with a totally different object to that of Miss JEKYLL, who regarded it from the æsthetic point of view. In his own garden he used zinc labels and indelible ink, and he had found this the best method.

Miss BROWNING HALL (Algiers), spoke of a method of labelling in which a piece of zinc, 6 inches long and half an inch broad, was employed; this was bent into a circle, and the name of the flower was written on the inside.

Mr. GEORGE PAUL moved a hearty vote of thanks to the writers. He said he knew both Miss JEKYLL and Mr. EWBANK and their gardens, and he was quite sure that they carried their precepts into practice. All the writers were ardent cultivators of hardy plants, and enjoyed immensely the difficult task of making a plant grow when nobody else could. The climate of the Isle of Wight was undoubtedly in Mr. EWBANK'S favour, as when the same flowers were put into gardens nearer London, they disappeared, and Mr. EWBANK had to be asked for a fresh supply. With reference to labels, it was a fact that many people



FIG. 6.—CLIVEDEN, NEAR MAIDENHEAD, A SEAT OF THE DUKE OF WESTMINSTER. (SEE P. 46).

disliked them, as in numerous cases the labels were more conspicuous than the flowers.

Mr. PEARSON (Chilwell) seconded the motion, which was carried unanimously, and the first day's Conference terminated.

ROYAL HORTICULTURAL SOCIETY.

The second day's Conference on Strawberries, Raspberries, Currants, &c., was held under the presidency of Mr. G. BUNYARD. The attendance was about the same as on the previous day.

The Chairman, in opening the proceedings, expressed the hope that the Conference would be the means of spreading a large amount of information about what were technically called "small fruits." The importance of the Conference was perhaps greater than appeared on the surface, because the whole of the subjects to be discussed required only ordinary treatment, and needed no very great horticultural skill, and the fruit supplied a vast amount of jam, in which form it reached homes where it would not be procurable in any other way.

STRAWBERRIES IN THE PRIVATE GARDEN FROM JUNE TO OCTOBER.

Mr. ALLEN's paper on this subject was read by Mr. A. H. PEARSON.

GOOSEBERRIES FOR PRIVATE GARDENS.

Mr. D. THOMSON (Drumlanrig, N.B.), contributed a paper on "Gooseberries for Private Gardens," which was read by Mr. WEATHERS, the Secretary.

RASPBERRIES.

Mr. WYTHES read his paper on "Raspberries."

Mr. NORMAN was not present to read his paper, which the Chairman said would duly appear in the *Journal*; and Mr. CHARLES LEICESTER was unable, through illness, to read his paper on "Gooseberries for Exhibition."

The Chairman invited questions and discussion, and said it appeared that the papers were so excellent as to leave no loophole. He would, however, like to make a few remarks. He thought they ought to get more upright Gooseberries, as many of the best Gooseberries crept on the ground in a most unfortunate way, so that every shower spoilt them just at the time they were most wanted. Then, again, large Gooseberries were deficient in flavour, and were like Melons, which had to be cut at a particular time, in order to get the flavour at its highest point. They ought to have more late ones, and more early ones; and to show the value of getting an early Gooseberry, even if the quality was not much, for market purposes, a grower in Kent had found a Gooseberry (which might possibly be identified at some future time), which produced at from ten days to a fortnight before any other. The consequence was, that he got £120 an acre for them as green ones. As far as flavour went, he thought he might mention Cheshire Lass, Green Gascoyne, White and Red Champion, Ironmonger, Warrington—these represent the very best flavours. Then as to size, there were the Bobby, Antagonist, among the reds; the Ringer and Drill, among the yellows; and the Stockwell and Telegraph, among the greens. That was a series of Gooseberries of which anybody could make a great deal. Then there was not sufficient enterprise in getting Gooseberries in early positions on walls. In that case the berries came just a little before any others, and in gardening that was a very great point. He had had a Gooseberry-house made, which had been much admired. It consisted of wire archways, covered with wire netting, and was found to be most

useful in keeping off birds. He would also commend the culture of the Gooseberry in the form of cordons. In that form the two branches would take up very little room, and then would produce same splendid fruit. With regard to manuring, he had found that the most successful plan to be, to manure in the autumn, and prune through the winter. After that, the manure was dug-in in the spring as soon as the first crop was taken off; the trees were then thinned out and heavily manured again. This brought on a second crop, and enabled the plant to bear year by year without losing its vitality. He thought there was a field for white Raspberries, and that it was possible, in the course of time, to get a white Raspberry of a very much larger size, and of a different race, to that which they obtained at the present moment. Autumn Raspberries were well worth growing. The yellow one was at present the best flavoured. As to Currants, they should strive for longer bunches and larger berries, and to get longer bunches, the present sorts might be crossed by the Reine Victoria; but in the way of Currants they seemed to have reached almost the utmost limit—it was only a matter of cultivation. In black Currants, a very important thing was to get early leafage to protect the fruit, as on Whit Sunday last the frost was so severe as to almost annihilate the crop. They still wanted late Strawberries of the British Queen flavour, and he entirely agreed with Mr. ALLAN that for the early ones they ought to be cultivated on the one year's system which might save at least a week or ten days. The Waterloo was a very good fruit, but it lacked flavour, and if it could be got with the Queen-flavour it would be very much appreciated. They all should have strong foliage. Dr. Hogg was the best fruit of all, and the President was the next best for general purposes, and in them they had very good parents with which to work. Of course, it would not be done in a minute. These things had been brought to such a pitch that they could only expect to go on step by step till they got what they desired.

There were many other fruits which could be discussed, such as the Cranberry, the Mulberry, and the Bilberry, which would make a welcome change, but these could be dealt with on another occasion.

Mr. LAXTON did not agree with the Chairman that the upright growth was any protection from frost, and he advocated the curved growth.

Mr. PEARSON supported the Chairman's views, and said that nineteen times out of twenty he had a full crop from upright Champions. He was glad the Chairman had referred to the pruning of Gooseberries. He was afraid that a great many amateurs, and, he might say, some professionals, looked upon pruning as hardly worth their attention. On the other hand, some people went to the other extreme, and he had seen a gardener clipping a Gooseberry tree with a pair of shears, so as to get a nice shape!

Mr. LAXTON said that many years ago he knew of some Gooseberry trees which were then seventy years old. They had never been pruned, but they always bore a crop of fruit. If a crop of fruit was wanted, very little pruning should be done.

This closed the discussion, and on the motion of Mr. P. CROWLEY, seconded by Mr. PEARSON, a hearty vote of thanks was accorded to the writers of the papers.

CLIVEDEN.—A more charming honeymoon-retreat than that placed at the disposal of Prince ARNOLD of ANHALT and his bride, or a more characteristic bit of English scenery to be seen of our

German guests, can hardly be imagined than Cliveden. Situated on the chalk, its wooded cliffs overlook the windings of the Thames (fig. 6), and gnarled trees, contorted roots, dense many-hued foliage, and spacious swards, lend their charms to a scene that for quiet beauty can scarcely be equalled.

THE GARDENERS' ORPHAN FUND AND THE FETE AT THE CRYSTAL PALACE.—Mr. G. W. CUMMINS, The Grange, Carshalton, sends us the following:—"At the last meeting of the Croydon Gardeners' and Amateurs' Mutual Improvement Society, the members decided to have an "outing," and they have determined to visit the Crystal Palace on Wednesday the 15th inst., on the occasion of the fête in aid of the Gardeners' Orphan Fund. It is expected that the members will render all the support they possibly can; and as Mr. STANLEY BAXTER, the honorary secretary, does not believe in doing things by halves, and as the society has undertaken the matter, he will see that the affair is well carried out. The following gentlemen have been elected to assist him in the disposal of tickets: Mr. T. Butcher, South Norwood and Croydon; Mr. J. R. Box, West Croydon; Mr. G. W. Cummins, The Grange, Carshalton; Mr. W. Carr, Croydon Lodge; Mr. G. H. Cooper, 148, Sydenham Road, Croydon; Mr. F. C. Frost, Vale Cottage, Old Town, Croydon; Mr. J. Newbury, 183, Whitehorse Road; Mr. A. C. Roffey, Church Road. Mr. Baxter's address is 40, Woodside Road, Woodside, S.E. It is hoped that other societies will assist in making the Rose Fête and Floral Fête a success.

THE ROYAL WESTERN HORTICULTURAL SOCIETY'S SHOW, says the *Western Mercury*, promises to be highly successful. The exhibition will take place in the Guildhall on July 21 and 22. Entries close on July 14.

THE FRUIT CROPS IN KENT.—The annual sales of Cherries in Kent demonstrate more than anything else the scarcity of soft fruit this season. At a large sale near Sittingbourne recently, an orchard containing 100 acres of Cherries failed to secure a single bid, whereas in former seasons the fruit on the same plantation has been known to realise £1200.

THE MARTIN SMITH PRIZES FOR BORDER CARNATIONS.—Mr. MARTIN SMITH has, on the suggestion of Mr. HARRY TURNER, authorised the publication of the following:—"Each stem to carry not less than three blooms or buds." It is felt that it is impossible to prevent disbudding, especially as the act of removal cannot be detected, even supposing the practice to be disallowed. There is nothing in the regulations governing the competition for these prizes which prohibits disbudding. The prizes will be competed for at the Drill Hall, James Street, Westminster, on July 21.

NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL PICNIC.—The annual picnic will, by the kind permission of LEOPOLD DE ROTHSCHILD, Esq., one of the Vice-Presidents of the Society, take the form of a visit, on Monday, July 20, to his seat, Ascott Park, Leighton Buzzard. The gardens and grounds will be open to inspection, together with the breeding-stables and kennels. In addition, Mr. L. DE ROTHSCHILD has promised to provide tea for the visitors. The cost, inclusive of railway fare from Easton, Kensington, Addison Road, Camden Town, and Willesden, dinner at Leighton Buzzard, and conveyances from Leighton Station to Ascott and back, will be 7s. 6d. each. Ladies are specially invited. Those who intend to be of the party, should communicate with Mr. R. DEAN, Ranelagh Road, Ealing.

EALING ROSE SHOW.—Mr. R. DEAN writes to us as follows:—"The exhibition of the Ealing Horticultural Society takes place on Wednesday July 15. To avoid misunderstanding, I may mention that the classes for Roses, formerly open to all comers, no longer find a place in the schedule of prizes; and prizes for Roses can be competed for only by resi-

dents in the parish of Ealing. Because the Ealing Horticultural Society is affiliated to the National Rose Society, their fixture finds a place in the list issued by the National Rose Society, though open classes no longer exist in the schedule."

THE ROYAL HORTICULTURAL SOCIETY'S SUMMER SHOW.—This show was held on the afternoon of July 2, in Lord IVEAGH'S grounds, at the rear of his Stephen's Green residence. So far as the programme was concerned, there were elements of success. Mr. HAMILTON DRUMMOND'S Cup, for the best stand of cut blooms, was won by Mrs. TEDCASTLE, of Marlay, Rathfarnham. There was rather a poor show of fruit, generally speaking, but the Grapes were good. The Society's Silver Medal, for a stand of six bunches of Grapes, was won by Mr. J. G. NUTTING.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—At a meeting of the council of the above institution on the 7th inst., a cheque for £421 10s. 3d. was received from Mr. GARRETT TAYLOR, of Norwich, being the proceeds up to date of the fund raised to perpetuate the name of the late Mr. ROBERT LEEDS in connection with an institution, of which he was for many years an active and zealous supporter.

PRESTON AND FULWOOD FLORAL AND HORTICULTURAL SOCIETY.—The annual meeting of the members was held on Saturday, the 4th inst., at the Legs of Man Hotel, Mr. SAMUEL H. STOTT, of Fulwood, presiding. The annual report and balance-sheet, submitted by Mr. JNO. ATTERTON, the Secie-

The Rev. H. HONWOOD D'OMBRAIN, Westwell Vicarage, Ashford, Kent, is the Secretary.

MR. SPENCER MOORE.—We learn from the *Journal of Botany* that this gentleman has been appointed Botanist to the Matto Grosso Gold Expedition, whose head-quarters are at Cayaba. We trust so good a botanist will find the opportunity to greatly develop our knowledge of the Flora of this district.

REWARD OF MERIT.—At a Court of the Fruiterers' Company, held on June 25, Mr. SAMUEL BARLOW, J.P., Stakehill House, Manchester, was, in consideration of important services rendered to the cultivation of hardy fruits in this country, elected a member of the Guild.

POTATO DISEASE.

In our last issue we alluded to the influence of sulphate of copper, lime, and sulphur in controlling this disease. We have repeatedly given formulas and directions for the preparation of the Bordeaux mixture and similar compounds, but as their preparation is somewhat troublesome to the gardener, he will find it useful to employ such a mixture as Tait's Anti-Blight, which is a fine dry powder, by means of a pair of bellows, as in fig. 7, or of an indiarubber distributor. It is both unscientific and unpractical to recommend remedies of unknown composition; indeed, this is a piece of quackery which no respectable journal would sanction in its editorial columns, but in this case the composition

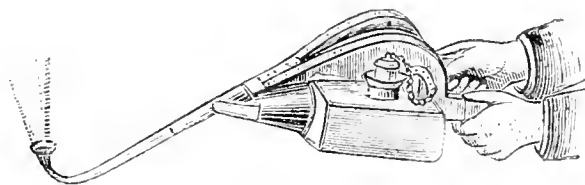


FIG. 7.—THE MALBECK BELLOWS DISTRIBUTOR.

tary, were adopted as satisfactory, and the officers and members of course were re-elected. A discussion took place in reference to an insect which had made its appearance locally and destroyed a number of Roses, and it was decided to submit specimens to well known scientists. A few persons sent exhibits.

THE EVENING FETE AT THE BOTANIC.—In spite of more than doubtful weather, and many other distractions and attractions, this function passed off successfully last Wednesday night, when the grounds and tents were decorated as prettily as usual by Messrs. Z. D. BERRY & SON and Messrs. BENEFINK. Visitors were more numerous than one would have expected. Table decorations formed the principal feature of the show, and the principal awards went to Messrs. BENEFINK, OSLER, and CHARD.

HORTICULTURAL CLUB, HOTEL WINDSOR, VICTORIA STREET, S.W.—It has been arranged to have an excursion (to which ladies are invited), on Wednesday, July 29, of which the following is the programme:—Members and their friends will assemble at the London Bridge Terminus (First-class Waiting Room) of the L. B. & S. C. Railway at 9 15 A.M., thence proceed in special carriage to Three Bridges, where brakes will meet them. A short visit will be paid to Messrs. CHEAL & SONS Nursery, at Lowfield, then a drive will be taken to North Park (Mrs. MONTEFIORE'S) from thence through Tilgate Forest to Handcross Park (Mr. WARREN'S), returning through St. Leonard's Forest to Crawley, dining at the George Hotel, at 7 o'clock, returning to at London 9.22 P.M., reaching London Bridge at 10.33 P.M. The price of the ticket: Railway fare, carriages, lunch, dinner and wine, will be 18s. 6d.

has been made known to us, and we have, therefore, no hesitation in saying that it is well suited for its purpose. Unfortunately, there seems too much reason to fear that there will be ample opportunity for testing its virtues. In the meantime, we refer to the figure at p. 437 of our last volume to show what copper sulphate will do in preventing the ravages of the disease. We are glad that the Irish Land Commission have issued a coloured sheet for hanging up in schools and farms, showing the appearance of the disease in various stages, and containing hints for growers which ought to do some good in preventing them from propagating the disease, as they now do. These hints are neither so imperative nor so explicit as they might be, and the use of copper sulphate is spoken of too much in the potential mood. It is so difficult to get anybody to do anything at all, that mild exhortations are worthless. Nevertheless, agriculturists owe their thanks to Mr. Carruthers, under whose superintendence the diagrams and the directions have been drawn up.

HOME CORRESPONDENCE.

THE WEATHER AND THE CROPS.—In my last remarks on the weather and fruit crop, I promised to give more particulars later on. Now I may state the frost has thinned the fruit crop to a great extent. Gooseberries are still dropping from the effects of the borer; in some places there is a fair crop, others calculate on getting about half a crop. Black and red Currants about the same, but the bunches are very much thinned. Apples and Pears will be a light crop; of some kinds, the ground is strewn

with the fallen fruits. Plums are a very heavy crop as regards some kinds; and Damsons show for a full crop, the branches are already bending with the weight of the fruit. I hear of some who have formed contracts thus early, at a low price. Cherries are very thin; Nuts promising and clean; Apricots, Peaches, and Nectarines a heavy crop. Fig trees were nearly killed by frost, but they are just breaking into leaf; but there cannot be much fruit. Raspberries and Strawberries are not injured. We began to gather the latter on June 16. Potatoes that were cut have grown well. We have been lifting from south borders for about a fortnight. Peas that were in full bloom were not hurt—began picking on June 10. Last week we had to water Strawberries and Peas again, the thermometer, standing in the shade, marked 70°, and 72° on June 17, 18, 19, and 20. Several hours' nice rain fell on June 22 and 23, and it was much wanted. It was again a very warm day on June 24, the thermometer, in the shade, standing at 72°, and on June 25, 74°. Temperature very regular for some days past, with fine growing weather, everything progressing. Strawberries coming in fast, and of fine size. *W. Divers, Weirton, Maidstone, June 29.*

FOXGLOVES.—You truly observed in your Answers to Correspondents last week, that "the union of several flowers is a common occurrence in Digitalis." When at Reading a few days ago, I saw in Messrs. Sutton & Sons' seed-shop what seemed to be a very unusual development. A spike of a rosy-coloured Foxglove, having a number of small spots on the throat, had produced one flower in which the corolla had become considerably enlarged, and taken the form of the Canterbury Bell, and it looked as if a flower of *Campanula Medium* had been fastened on to the spike. The colour and spotting remained the same; but the transformation was singular in the extreme, as, with the exception of the colour, all the usual form of the Foxglove had disappeared, and given place to a distinctly formed and exact Canterbury Bell. *R. D.*

THE FRUIT CROP.—It is very disappointing and lamentable, after all the promise, to see how seriously the fruit crop has been thinned, as, excepting here and there, Apples that appeared set and swelling have ceased to progress, and are fast falling from the trees, the leaves of which look anything but healthy and well. Pears seem to have held their own better, but though they have not shed their fruit in the way Apples have, much of it is frost-bitten, and, as a consequence, pinched and deformed, the result of which will show itself later on, when the Pears will become gouty and hard in the flesh. Cherries are almost a failure, as, instead of swelling and ripening, very few will reach that stage, they having turned yellow and shrivelled. Strawberries, too, are very unsatisfactory, as the fruit looks baked, the cold and aridity of the air having been more than it can bear, followed, as the ungenial weather has been, with hot gleams of sun. There will be a few Plums on walls, but hardly any on bushes and standards, except where the trees are very sheltered, and had a good set. Gooseberries and Currants are plentiful, and so are aphids, for, as is usual in bad seasons when growth is slow, these insects have every chance of establishing themselves, as they cause the leaves to curl, and so cripple the shoots. The damage they do does not end in the mischief wrought this season, but extends to the next, and therefore every effort should be made to rid the trees of them, one of the safest remedies being Quassia steeped in hot water, and 2 oz. of soft soap added to every gallon of liquid. This syringed on and followed by a heavy washing from the garden engine, will dislodge the aphid and set the trees free. *J. S., Ipswich.*

THE STRAWBERRY CROP.—The general report in my district concerning the present crop of Strawberries is, that whilst fruits are very abundant they are not so fine as in some previous years. This result has been attributed to many assumed causes: the intense severity of the winter weather, which seemed to destroy every leaf on the breadths; the long cold, dull, spring; and the comparative dryness of the soil. If it be admitted that all these things conjoined have tended to make Strawberry fruits smaller than usual, probably the suggestions will not be far wrong. I am rather disposed, however, to place most emphasis upon the latter cause, because the soil is still, in spite of some recent excellent rains, very dry some few inches down. To tell the truth, we have had a wonderfully dry winter and

spring, and that almost luxuriant moistening the plants had last summer has been greatly wanting this year. Strawberry plants are, on the whole, rather gross feeders, and need plenty of moisture. If plants were now dug up, very great would be the surprise at the comparative dryness of the soil beneath, and yet we had the best rains only since the fruits began to form, so that they came too late to furnish that force and stamina necessary to the formation of fine blooms and fruits. Then again, the exceeding abundance of the fruits set militates somewhat against the production of size. Could outside plants be subjected to the same thinning process accorded to pot-plants under glass, the evil might be somewhat remedied, but that is out of the question. Plants in pots under good culture almost invariably produce fine fruits, because they can have plenty of warmth, moisture, and if need be feeding; and also have the fruits duly thinned. What failures occur in Strawberry forcing, and after all they are many, are chiefly due to imperfect cultivation. No doubt many Strawberry growers plead that it is impossible to secure good sets when the skies are leaden, the atmosphere thick with smoky vapour, and light is wanting; these are, however, defects more local than general, and the wonderful success of some growers, notably those of Mr. Norman at Hatfield with Sir Charles Napier, shows that, after all, the production of fine fruits of Strawberries under glass depends more upon skill and knowledge than to any other cause. It was recently remarked by a non-professional visitor to the Kentish Strawberry fields, that many of the fruits were of very irregular form, and it was concluded that imperfect fertilisation of the blooms was the cause. The blame was laid upon the poor bees as usual, but nothing is easier than to argue from false premises, because plenty of fruits of the finest form are found on forced plants, to which no bees or insects of any fertilising force gain access. Imperfect form in Strawberries is more often due to defects of cultivation, or of surroundings, such as coldness, absence of light, want of moisture at the roots, &c., than to lack of insect agency. It would be idle to assume that one tithe of the Strawberry blooms of the country are insect-fertilised. Nature has for certain furnished plants with the needful fertilising powers, and whilst insects for the preservation of their fugitive lives have been plucking the sweets, we have been only too ready to build up illusive theories, crediting them with labours by no means correctly. A piece of Turnip which has seeded wonderfully well, was, when in bloom, devoid of all insects, so far as I could detect on frequent observation, and generally I have never known bees to be more scarce than this year. It is clear that to what new causes may be due fine fruits or small fruits, handsome ones or imperfect ones, we must look to excellence or errors in cultivation, rather than to other causes. *A. D.*

AZALEA MOLLISS—This variety of Azalea is fast rising in public favour, and no wonder, as its flowers are much larger than the old Ghent kinds, and the colours more varied. It is also remarkably free-blooming, plants of quite small size setting flower-buds at the end of almost every shoot, which with but little forcing, open freely, and make a grand show in the greenhouse in winter and spring. Unfortunately the flowers have no scent, but that will, most likely, be remedied in the new varieties raised, as, no doubt, they will cross with the Ghent sorts, and partake of their perfume, those of a yellow colour being deliciously sweet and fragrant, in which respect they almost rival the Honeysuckle. Not only is the Azalea mollis valuable for pots to grow or pot up for forcing, to afford cut bloom or embellish the conservatory, but it is of great use to form groups, either by themselves, or to plant in the front of Rhododendrons, with which they associate well. As to soil, that need be no bar to their culture, for peat is not essential or required, as they do just as well in sandy loam, and may be planted almost anywhere with every chance of success. The way to increase them is to plant low, and then they root all around the stems or crown, and may be divided, and they seed freely; but as they can be bought so cheaply, of fair size, few will care to go to much trouble to raise them. *J. Sheppard.*

LETTUCES.—We have had a trying season for Lettuces and other salad plants, nearly all winter varieties being killed by frost; and the spring with its cold weather was very unfavourable for the young plants, spring sown or planted out. I have grown them in a variety of ways, and managed to keep the supply equal to the demand. The varieties which

were chiefly planted were Veitch's Selected Brown and Paris Market, Cos. All the Year Round and Neapolitan Cabbage varieties. Last autumn I put out about 2000 plants at the foot of the garden wall, where, in an ordinary winter, they are quite safe; but this season all were lost but about 300, and these against the wall facing south, and upon higher ground than the rest, and produced good heads. From a sowing made in September, a dozen frame lights were filled, putting the plants close together. These were gently forced by means of a lying of dung and leaves put round the pit which afforded sufficient warmth to keep them moving, and from them a good supply was obtained from February onwards. A late batch of Endive was treated in a similar way, and with good results, as it lasted till the middle of the month of May. Seed was sown in a box about once a fortnight from January 1, and put into a forcing-house, and as soon as the plants were large enough the vacant spaces in the pit were filled up with them, which afforded us plenty of nice young stuff. I also sowed Lettuce seeds along the back border of the vineries when the Vines were started, and from these sowings a number of useful plants were got. From All the Year Round, Neapolitan, Golden Queen (Veitch), raised in heat, and nursed in shallow boxes, and planted outside in the first week of April, some excellent heads have been cut. Daniels' Continuity appears to be a hardy variety, but its colour is against it; but that is a secondary consideration, if it will stand the inclemencies of our winters. Of Cos varieties, and their name is legion, Sutton's Mammoth White, White Heart, Paris White, Veitch's Selected Bath Cos, Hicks' Hardy Cos, and Ivery's Nonsuch are all good. If seed be sown once a fortnight in rows, thinly, and if too many appear, pricking them out into beds, those which remain will be fit for use for a longer period than transplanted ones. *W. A. Cook, Compton Bassett.*

SOWING PEAS.—Pisum, writing in last week's *Gardeners' Chronicle*, p. 18, headed "The Seed Trade," says that the old practice of sowing Peas in the open during the month of November is now largely abandoned. Well, we often hear of failures, and I remember reading in these pages something in the same strain, a few months back, by Mr. J. Douglas, but my experience is this: In January, 1868, I went to Somersetshire as foreman in a neat well-kept garden, the head gardener taking charge the same day as I went down, and I well remember that his greatest trouble was that no Peas had been sown—and he lost no time in getting some Peas in. From this sowing he gathered Peas, fit for table, on June 2. He sowed the first week of the following December, and gathered on May 18, and he sows, I think, to this day about that date. I remained there three and a half years, and have been a head gardener ever since I left it, residing in three different counties, and I always sow my earliest Peas, if possible, in the first week in December, and I have sometimes gathered Peas, fit for table, as early as May 16. I sow Dilstone's Early or Sutton's Ring-leader, sometimes both; William I. does not do so well. *A. Douglas.*

EARLY TOMATOS—It must be puzzling among the multitude of varieties for an amateur to know which to select, as all are good though some better than others. I have this season grown more varieties than usual, so as to get to know which is the earliest Tomato. This I have proved to be that prolific variety "Orangefield," which comes into use just one week earlier than Nesbitt's Victoria, a small cluster Tomato, of rich flavour. Neither of these is the best variety for every purpose, but when earliness is the chief object of the garden, they are worth growing. Ham Green, Hackwood Park, Sutton's and Veitch's Perfection come in about together; and Dedham Favourite, Golden Perfection, Maincrop, Vick's Criterion bring up the rear, which, I consider are first-class varieties for small establishments. I have cultivated all of them this season in a lean-to house facing south, in 8 and 9-inch pots, and it is astonishing what fine fruit can be gathered from the plants, and the weight of fruit per pot ranges from 2 lb. to 3 lb. These plants are now put out against the kitchen-garden walls with fruit still upon them, and where I hope they will continue to grow and fruit for some time to come; of course, these have been well fed. In an ordinary season this is the best plan by which to obtain Tomatos from outside plants, and being strong plants, they have but little growth to make before fruiting, and simply perfect the fruit that was already set. *W. A. Cook, Compton Bassett, Calve.*

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 7 AND 8.—This meeting and Conference, lasting for two days, took place in the gardens of the Society, the exhibits being disposed in two large tents. There was a fair display of hardy flowers, Strawberries, and Gooseberries, contributed by a few nurserymen, gentlemen's gardeners, and amateurs. It is late in the season to find Strawberries in any numbers growing in pots; still, the nurserymen must be credited with showing a great number of varieties in this manner, in some instances heavily laden with fruits—but the best of these looked more like plants which had been recently lifted from the open ground and potted; anyhow, they served to illustrate habit, kind of foliage, length of fruit-stalk, and strength of plant, and in that way served a useful purpose. We fail to see what useful end is served by inviting exhibits of green Gooseberries; and although these were plentiful enough, the berries were much too large for tarts or bottling. Of Raspberries—one of the fruits of which samples were invited, we saw none.

The greater part of the floral display was to be found in a large tent specially set apart for it, and was interesting as a gay show of hardy flowers of the season. Novelties in species or varieties were few. It was pleasant to observe an absence of the usual jumble, there being plenty of space between the individual exhibits.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. H. Herbst, J. O'Brien, W. C. Leach, R. B. Lowe, L. Castle, C. Jeffries, G. Gordon, H. B. May, W. Goldring, B. Wynne, R. Dean, G. Paul, H. Cannell, G. Nicholson, H. Turner, and Dr. Masters.

A pretty group was set up by Messrs. J. Veitch & Sons, Chelsea, which was awarded a Silver Banksian Medal. It consisted of hardy biennials, perennials, and small shrubs. Taking the last first, we observed various Escallonias, var. Philippiana, small white flowers; Exoniensis, pale rose-coloured flowers, and pterocladon, white. The beautiful *Andromeda speciosa pulverulenta* and *A. p. cassinifolia* were shown in well-flowered examples, the former with long racemes of white campanulate flowers, larger than those of the latter species. *Berberis aristata* was shown, as long flowering shoots, well set with yellow blossoms.

The pretty small-growing *Philadelphus microphyllus* was observed, well set with its white blossoms. The giant campanulaceous plant, *Ostrowskia magnifica* was shown, one fine large bloom; also *Gerbera Jamesoni*, a showy composite of scarlet-orange colour set on a scape 2 feet high. In the rest of the collection were to be seen Wallflower-leaved Stocks, *Gaillardia hybrida*, many varieties of Canterbury Bells, single and double-flowered; *Dianthus Napoleon III.*, a bright crimson; a double form of *Lychnis dioica*; the white-flowered *Gentiana Kaufmannii*; *Campanula latifolia*, and a collection of brilliant coloured *Potentillas*.

A Pink of pleasing marking, *i.e.*, a purple band round each of its white petals, and named The Rector, was shown by Mr. C. Turner, Royal Nurseries, Slough. Other Pinks, with more or less similar marking, and named Princess Louise, Boiard Minerva, as well as some seedlings. *Delphiniums*, &c., were likewise shown by him. An Award of Merit was made.

A novelty in *Godetia White Pearl* was shown by Messrs. J. Carter and Co., High Holborn. It has smaller flowers than G. Duchess of Albany, which was shown alongside, and which is one of the whitest *Godetia* hitherto known. The height of the novelty would be about 18 inches.

Mr. R. Dean, Florist, Bedford, exhibited his handsome Ten-week Stocks, Mauve Beauty and Princess Alice, white-flowered; *Chrysanthemum Sibthorpii*, a pale yellow variety, probably a form of *C. segetum*; some Canterbury Bells, in variety, and Sweet Williams of much merit.

The useful late-flowering, hardy Azaleas, hybrids, probably of several allied species, were shown by Mr. A. Waterer, Nurseries, Knap Hill, Woking. The colours varied from white to pink of different hues.

A few Orchids were noted; amongst them, from Mr. Prewett, Swiss Nursery, Hammersmith, a fine-looking *Acrides maculosum*, Prewett's var., about which some interest is sure to centre. It may be found at length to be from the same region as

A. Schroderi, there being a good deal of resemblance to that species. The same exhibitor had *Odontoglossum cordatum*, *Angraecum caudatum*, &c.

Messrs. Pitcher & Manda, Hextable, Swanley, showed a very handsome *Cypripedium Brownii*—*C. magnificum* × *C. leucorrhodum*. The lip is large pale pinkish-brown, with a trace of green in it, the petals 5 inches long, slightly inclining downwards, straight and twisted, pink for half their length, the rest white; sepals white suffused faintly with pink near their bases.

Messrs. Seeger & Tropp, nurseries, Lordship Lane, Dulwich, had various forms of *Cattleya Gaskelliana*, mostly handsome ones. *Cattleya Mossiae formosa*, a flower mostly rosy-purple in colour; *Lælia Xanthina*, and a partially-flowered spike of *Grammatophyllum Seegerianum*, which had been produced on the journey from the Moluccas. From what we could observe the flowers will, when properly developed, be not unhandsome.

A quantity of the native *Orchis maculata* was shown by Mr. Harden, gr. to the Dowager Marchioness of Huntley, Cole Orton Hall. They had been grown, and well-grown too, on a north border in the kitchen garden at that place.

Some beautiful bunches of *Alstromeria aurantiaca*, *A. pelegriana*, &c., were shown by Mr. Leach, gr. at Albury Park, Surrey, he receiving a vote of thanks for the exhibit.

Miss Falkner was a magnificent double-flowered tuberous-rooted *Begonia*—shown by Messrs. H. Cannell & Sons, Home of Flowers, Swanley.

Messrs. B. Debenham, St. Peter's, St. Albans, had a small lot of hardy subjects, and Mr. T. Laxton, Bedford, showed *Pink Mrs. Sinkins*, and several other good white *Pinks*, but none that equalled the first-named. *Pink Lady R. Churchill* is a pretty flower marked with a purple ring around the central part.

A dwarf *Centaurea cyanus*, measuring not more than 6 inches in height, and with correspondingly small flowers, of a deep blue colour, came from Mr. H. Herbst, Kew Road, Richmond.

Pinks and single *Roses* were shown together by Mr. B. Ladham, Shirley Nursery, a pretty combination of forms and colours.

COMPETING CLASSES.

These were few; one for eighteen varieties of hardy-flowering perennials, in which W. Marshall, Esq., Achinrath, Bexley (gr., Mr. Pratt), took the 1st prize and the Silver Flora Medal. We noted in this group *Campanula arvensis* flore pleno, *Thalictrum glumaceum*, *Delphinium florum*, *Campanula Van Houttei*, *Lysimachia thyrsoiflora*, and the bright rosy-crimson-flowered *Epilobium angustifolium*; E. M. Nelson, Esq., Haager Hill, Ealing, was 2nd.

In another class, for the same number of perennials, O. T. Hodgson, Esq., Lachine, Chislehurst, was 1st; in this lot were *Astrantia Biebersteinii*, a better plant than *A. majus*; *Sidalcea Oregana candida*, and *Lathyrus Drummondii*, &c.; 2nd, Mr. G. H. Sage, Ham House, Richmond.

For Messrs. Kelway & Son's special prizes, Mr. T. H. Crasp, gr., Canford Manor, Dorset, showed *Gaillardia hybrida* in six varieties.

Fruit Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. P. C. M. Veitch, W. Denning, W. Bates, G. Reynolds, G. Wythes, J. Hudson, A. Dean, H. Balderson, and J. Cheal.

A large collection of Strawberries, in pots and in punnets, came from Messrs. Paul & Son, The Old Nurseries, Cheshunt—it consisted of the principal varieties in cultivation in this country; but as regards some fine varieties, the Society's collection was the more complete one. We mention the following:—Lucas, Dr. Hogg, a variety to grow where British Queen will not grow well, as it has the flavour—a little less marked, certainly, of that variety; Sir J. Paxton, Noble, fine to the eye; Vicomtesse H. de Thury, small, but of good flavour, and a great bearer; The Captain, King of the Earlies, Noble, all three of Mr. T. Laxton's raising, and filling a place in the market grower's list of varieties; Commander, Marie Nicaise, President, A. F. Barron, a very handsome berry; Pauline, Marguerite, Crescent Seedling, an American variety of some repute, but not so good here. It is bright in colour, and a good bearer, well suited for preserving whole, or as jam; Oxonian; Auguste Boisselot, a fine prolific, bright in colour, and bearing a long time; Belle de Meaux, an alpine variety, of dark crimson colour; Auguste Nicaise, late in coming into

bearing, conical in form, prolific, with strong foliage; Marie Nicaise, large, globular, slightly conical, light crimson, seeds embedded in the flesh; Comtesse Trelakoff, an alpine or Hautbois, of conical shape, small, and dark crimson in colour; Premier, with sparse foliage and large fruits; and La Grosse Sucrée.

Messrs. Paul & Son showed also a number of varieties of Gooseberries in the green state, mentioning the names of which will serve no useful purpose.

Mr. J. Watkins, Pomona Farm, Withington, Herefordshire, showed a number of Strawberries in small dishes. Of rather unusual varieties, we may name Kerr's Prolific, Pollissimer, and Sharpless, all of North American origin, and the last-named considered by the Americans their best Strawberry; All Round, Marshal MacMahon, Amateur, Wonderful, a berry which does not ripen at the point; Barnes' Prolific, Comte de Paris, &c. Fifteen dishes of Apples of 1890, in good condition, were observed. These consisted of Whiting Pippin, a fruit that often comes with two or three eyes; Winter Greening, Farmers' Seedling, Moss' Incomparable, Court Pendu Plat, Downton Nonpareil, Broad Tail, Herefordshire Pearmain, Winter Queening, and Golden Russet.

Ripe fruits of Ogden black Currants were shown by Mr. Watkins, in proof of earliness.

Mr. Leach, Albury Park, showed some thirty-five varieties of Strawberries, but without names. They were fine fruits, well ripened.

Mr. R. Gilbert, gr., Burghley House, Stamford, showed his new Strawberry, Chief Secretary, alleged to be earlier than John Ruskin, King of the Earlies, and Noble; it is a good doer, and very fruitful. The fruit is wedge-shaped, and in colour dark crimson.

Mr. W. Taylor, Hampton, had *Grove End Scarlet*, an old variety, excellent for jams, &c.; *British Queen*, a good sample of this variety, and *Sir C. Napier*.

About sixty dishes of Strawberries was the Society's contribution to the show, and this collection, besides containing all the popular varieties, had others, which deserve all commendation. We mention a few:—John Ruskin, Old Pine, Helena Glode, Countess, Trollope's Victoria, Bothwell Park, Sabreur, Jewel, Filbert Pine, Crown Prince, Bidwell Seedling, The Pilot, Premier, and Harris's A 1.

Some very large fruits of *Jas. Veitch* and *Latest of All Strawberries*—which, by the way, rather belies its name by fruiting at all at this season—came from E. Amies, Esq., Ashford Road, Maidstone.

A rather numerous collection of Strawberries in pots and in punnets were exhibited by Messrs. G. Bunyard & Co., Maidstone, and consisted of most of the favourite varieties grown in gardens.

Other than these, mention may be made of *Mons. Fournier*, resembling *Dr. Hogg*; *Brown's Wonder*, *La Boule d'Or*, *J. Ruskin*, a pretty fruit, but rather flat in flavour; *Frogmore Pine*, *Royal Hautbois*, *Alpine Triomphe d'Orleans*, *President de la Cour*, *Usher Fritz*, *Competitor*, and several of North American origin.

Several very fine seedlings were brought by Mr. W. Allan, Gunton Park, Suffolk; all were showy well-shaped fruits, some of which the judges thought were improvements on existing varieties.

A large collection was shown by Mr. T. Laxton, Bedford, and contained many new names, as well as good-looking fruits. Mr. Laxton is doing much work in this field, and amongst the many that he has raised and is raising, some novelties of merit are from time to time getting into commerce.

COMPETING CLASSES.

Mr. W. Palmer, Surrey, was 1st, for six dishes of Gooseberries; 2nd, Mr. J. Gilbert, Rectory, Mew, Guildford. These were large for the time of year. E. M. Nelson, Esq., Ealing, was 1st for four dishes of Strawberries, showing *British Queen*, *Vicomtesse H. de Thury*, *Sir J. Paxton*, and *Noble*. Mr. Nelson was 1st for one dish, namely, *Sir J. Paxton*; and 1st in Messrs. Sharp & Co.'s prizes for three dishes of Peas, showing *the Queen*, *Triumph*, and *Sir F. A. Millbank*; the first two have short, dark green pods, well filled with very dark green-coloured seeds. Mr. W. Palmer was 1st for two dishes of green Gooseberries, and 2nd for two of ripe kinds.

MISCELLANEOUS.

Some immense sticks of a seedling *Rhubarb* were shown by Mr. Davis, High Road, Chiswick.

Messrs. R. Veitch & Sons, 51, High Street, Exeter, showed *Pea Exonian*, a first Early Wrinkled Marrow, having a well-filled small pod, with Peas of a rich green colour.

Mr. G. H. Pontin, Stanley Vineries, Woking, showed some very large, heavy Melons, named *Sutton's Triumph*, *Golden Triumph*, *Conqueror*, and *Golden Perfection*—this last-named kind weighed 10 lb. 12 oz.

Mr. W. Leach showed *Penches*, and Mr. J. W. Church, The Vineyard, Braconash, Black Alicante Grapes, cut on January 6, 1891, in a good condition, considering the length of time that has elapsed since they ripened.

A large bunch of a small-fruited good-flavoured Banana was shown by Mr. Fitt, gr. to Earl Cowper, Panshanger. The bunch was 2 feet in length, and was well set with fruit from end to end.

Eight grand *Queen Pine*-apples were shown in the cut state by Mr. T. Coomber, gr., The Hendre, Monmouth. A *Silver Banksian Medal* was awarded Mr. Coomber.

The tent in which the bulk of the hardy flowers were arranged furnished a charming display of hardy summer blossoms. On the south side, Messrs. Kelway & Son, of Langport, staged 200 spikes of *Delphiniums*—a collection of such varied hues and fine varieties as could not perhaps be furnished by any other nursery in the kingdom. In the matter of novelty of colour, Messrs. Kelway & Son have taken a decided lead. A selection of the finest varieties would include *Premier* and *Rivoli*, both with massive spikes of flowers, deep blue edged with cerise; *The Vicar*, *Beatrice Kelway*, *Lady Rowena*, *Robin Adair*, a large bright blue single variety (*Award of Merit*); *Hereward*, *Gilbert Kelway*, *Hermione*, *Britannia*, deep blue with white centre; *Beauty of England*, *Sequence*, *Monument*, very delicate and soft lilac—a very distinct shade; *Sophia*, *Modelle*, *General Earle*, *Donovan*, *Breunans*, *Lord Balfour*, and *Edgar Wild*. These, staged against the white background of the tent, made a rare display. In addition, Messrs. Kelway & Son had a large collection of *Gaillardias*, including *Glenavon*, a fine and very showy variety; and *Helicon*, large yellow; *Iris Kämpferi* in variety, *Crinum McOwanii*, and bunches of hardy flowers, such as *Campanula trachelium*, fl.-pl.; *C. persicifolia* alba, *Cephalaria lutea*, *Spiraea aruncus*, *S. palmata elegans*, *Verbascum Choisii*, &c.

On the opposite side, Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, S.E., had an exceedingly bright, varied, and well-arranged collection, which included *Heuchera sanguinea*, *Doronicum plantaginum excelsum*, *Chrysanthemum latifolium*, *Campanula turbinata*, *Brodiaea coccinea*, *Salvia Tenori*, *Armeria cephalotes rubra*, *Helianthus multiflorus plenus*, *Alstromerias*, in variety; *Dianthus Emilie Parc*, a charming flesh-pink variety; *Amaryllis longifolius albus*, *Centaurea Cyanus*, *Spiraea aruncus*, *Richardia hastata*, with its pale Primrose blossoms; *Spiraea palmata*, *Lilium auratum*, *Carnation Madame A. Warocque*; *Lilium speciosum*, *Pyrethrus*, *Rosa rugosa*, *Amberboa moschata*, with its golden-yellow blossoms, an excellent subject for cutting from; *Saxifraga pyramidalis*, *Canterbury Bells* in variety; *Gladiolus Colvilli*, and *G. ramosus*; bunches of *Violas*, *Pansies* and *Carnations*, *Papaver orientale*, &c.

Following this, on the same side, came a smaller but very interesting collection, from Mr. T. S. Ware, Hall Farm Nurseries, Tottenham, which included a number of *Lilies*, such as *Elegans*, *Fulgens*, *Hansonii*, *Washingtonianum*, an American species, in which the flowers open pale coloured, and change to a pale rosy-purple. *Maritimum*, a very distinct small flowered species, awarded a *Botanical Certificate*; *Canadense*, *Parryi*, *pulchellum*, a very bright and effective species; *pardalinum*, *colchicum*, *Martagon album*, and *pomponicum verum*; also *Geum coccineum*, *Lupinus polyphyllus*, *Centaurea montana*, in variety; *Campanula persicifolia alba*, *Delphinium cashmerianum*, and varieties of *D. formosum* and others; *Armeria plantaginina rosea*, *Pink Her Majesty*, *Heuchera sanguinea*, *Lychnis Haagerana*, a very bright single form; *Veronica spicata*, *Campanula carpatica*, *Triteleia Murrayana*, *Mertensia sibirica*, and *Linum flavum*.

On the central stage, Messrs. Paul & Son, Old Nurseries, Cheshunt, had a large and valuable collection staged with commendable taste, which included *Veronica anomala*, a white-flowered dwarf hardy shrub (*Award of Merit*); *Prunella Webbiana*, bright rose (*Award of Merit*); *Canna Jules Chretien*, rich crimson; *C. Comte H. de Choiseul*,

vivid scarlet; and *C. Admiral Courbet*, deep orange; Pæonies, among these a beautiful delicate blush variety named *Emile Galle* (Award of Merit); *Centaurea macrocephala* (see fig. 4, p. 39), with its large golden heads, *Chrysanthemum latifolium*, *Phlox ovata*, *Polemonium Richardsoni*, *Epilobium angustifolium*, and its white variety; *Brodiaea congesta*, *Carduus heterophylla*, *Salvia dealbata*, with its large leaves and huge spikes of pale lavender flowers; *Potentilla*, double, *Wm. Rollisson*, rich orange; *Mars*, and *Belzebath*, *Cephalaria alpina*, *Achillea serrata plena*, earlier to bloom than the others, and very free; *Geranium Endressi*, *Campanula Hosti*, and its white variety; *Ruta patavina*, yellow, said to be a little difficult to grow, but very charming in a mass; *Orchis foliosa*, *Clematis integrifolia major*, and *C. erecta*, with dense clusters of small white flowers; *Lilium rubescens*, *L. columbarium*, *Gaillardia grandiflora*, *Campanula persicifolia alba plena*, *Astrœmeria aurantiaca*, *Pentstemon pubescens*, *Pyrethrum cinerariaefolium*, small, well formed pure white flowers, and *Distamus fraxinella*.

Next came a select collection of extremely interesting subjects from the Royal Gardens, Kew. This included *Sphæralcea rivularis*, with pretty pink blossoms closely allied to *Malva*; *Gentiana lutea*, *Lahia lanata*, *Dianthus viscidus*, *Phlomis tuberosa*, *Erigeron salsuginosus*, *Pentstemon barbatus*, *Lathyrus grandiflorus*, *Campanula rhomboidalis*, *Erysimum Wahlenbergii*, pale yellow; *Cosmos bipinnatus*, a handsome annual, with bright reddish-purple flowers; *Pyrethrum cinerariaefolium*, with white flowers—small and single; *Bremostachys laciniata*, *Dianthus Griesvii*, and *Campanula excelsa*, a small but interesting species.

Mr. G. Fennell, gr., Fairlawn, Tunbridge, Kent, showed a peculiar novelty in fruits of *Nectarine Violet* *Hâtive* in three stages of growth, quite small and green, half-grown and beginning to colour, and lastly, ripe fruits. These had been taken from different parts of one tree, and all similar fruits will ripen, as in several years past, in a satisfactory manner.

NATIONAL ROSE SOCIETY, CRYSTAL PALACE.

JULY 4.—The National Flower was not seen to the best advantage at the Crystal Palace on Saturday, but not from any fault of the Rosarian. He had planted, watered, and budded his Rose trees with a devotion worthy of all praise; but Nature proved in an unkindly mood, and withheld that assistance she usually renders. Roses were held back by an unusually late spring, and when summer weather broke it was fitful—days were hot and dry, the nights cold, and then when at last the flowers opened tardily and imperfectly, storms came and disfigured them to the great grief of the exhibitor. It was from no defect in the "blazing arch of lucid glass" overhead which made the flowers look dull, they were dull generally—though here and there, but rarely so, blooms were fresh, bright, clean, and winsome. A large number of blooms were staged, the tea-scented varieties shown by amateurs were very good for the season; those staged by the trade about as bad as they could be in the present era of Rose culture. The crimson and scarlet hybrid perpetuals were brilliant in some instances, old General Jacqueminot, after nearly forty years' culture, shone out with astonishing brilliancy, and was actually selected from the flowers shown in the amateurs' classes, as the best hybrid perpetual, and awarded the Silver Medal of the Society! "Brave old General"—so useful in many ways, that the next Rose-loving Dean of Rochester may perchance see it in the Horticultural Hall of the future in another forty years.

As is usual, the flowers were staged on tables placed along the eastern portion of the nave. Roses are not seen to the best advantage staged in green boxes placed on naked dull green tables, that show an abundance of boxes beneath; but it is the best system the wisdom of the National Rose Society has been able to devise, and we must not grumble; but somehow the thing is not as one would like to see it. Rose-cups and wire supports have improved the floral effect, but a sense of incongruity remains.

Nurserymen's Classes.—In the leading class for seventy-two varieties, distinct, there were three exhibitors, and Mr. B. R. Cant, nurseryman, Colchester, won the 1st prize and the Challenge Trophy, held by his nephew during the last two years. It was not a standard seventy-two, but it was good in such a trying season, and the Tea-scented

varieties greatly added to its value. We give the names of the Roses, many of which were repeated in other collections. Of H.P.'s, Mr. Cant had *A. K. Williams*, *Abel Carrière*, *Mons. E. Y. Teas*, *Mrs. J. Laing*, *Ulrich Brunner*, *Victor Verdier*, *Duke of Edinburgh*, *Madame Gabriel Luizet*, *General Jacqueminot*, *Baroness Rothschild*, *La France*, *Annie Laxton*, *Jean Liabaud*, *Madame Victor Verdier*, *Xavier Olibo*, *Exposition de Brie*, *Paul Neyron*, *Victor Verdier*, *Prince Camille de Rohan*, *Marie Baumann*, *Victor Hugo*, *Alfred Colomb*, *Countess of Rosebery*, and *Alphonse Soupert*. Tea-scented:—*Souvenir de Paul Neyron*, *Maréchal Niel*, *Caroline Kuster*, *Comtesse de Nadaillac*, *Cleopatra*, *Catherine Mermet*, *Princess of Wales*, *Madame Hippolyte Jamain*, *Madame Lambard*, *Jean Ducher*, *La Boule d'Or*, *Madame Bravy*, *Madame de Watteville*, *Madame Hoste*, *Madame Willernuez*, *Souvenir d'Elise Vardon*, *Francisca Kruger*, and *Innocente Pirola*. 2nd, Messrs. Paul & Sons, Old Nurseries, Cheshunt, in whose collection the H.P.'s were the strongest, and some of them brilliantly coloured. There was not very much to choose between these two stands. Messrs. Prior & Son, Myland Nurseries, Colchester, were 3rd.

In the class for forty-eight varieties, three trusses of each, there were but two exhibitors, and Mr. B. R. Cant was again 1st.

In the class for forty-eight distinct, single trusses, there were seven competitors, and Mr. Charles Turner, Royal Nursery, Slough, attained 1st honours; 2nd, Messrs. G. & W. Barch, nurserymen, Peterborough; 3rd, Mr. George Prince, nurseryman, Oxford.

There were four collections in the class for twenty-four varieties, single blooms, and here Mr. George Mount, nurseryman, Canterbury, was 1st, with a very bright and clean lot of flowers; 2nd, Mr. J. Mattock, nurseryman, New Headington, Oxford; 3rd, Mr. E. F. Such, Maidenhead.

There were eight exhibitors of twenty-four varieties, three trusses of each, and Mr. Geo. Prince took the 1st prize; 2nd, Mr. G. Mount; 3rd, Mr. C. Turner.

Garden Roses (Nurserymen).—The 1st prize for the best thirty-six bunches of garden Roses, distinct varieties, was won by Messrs. Paul & Son, Old Nurseries, Cheshunt. These Roses attracted considerable attention, and it would be hard to find any flowers much prettier. The following are a few of the most striking varieties:—*Miss Blanche Moreau*, *Reine Olga de Wurtemberg*, *L'Idéal*, *Reine Marie Henriette*, *Polyantha var. Simplex*, *P. Perle d'Or*, *P. Mignonette*, *P. grandiflora*, *Madame Plantier*, *Macrantha*, *Crested Moss*, and *Little Gem*. Messrs. G. Cooling & Son, Bath, was 2nd; and Mr. E. F. Such, Maidenhead, 3rd.

Amateurs' Classes.—The principal class was for forty-eight varieties, single trusses, and there were five competitors; an additional interest was lent to this particular class, because the Challenge Trophy won last year by Mr. E. B. Lindsell, of Hitchin, who captured it again on this occasion with some very good blooms indeed, the season considered. He had of H.P.'s *Heinrich Schultheiss*, *Mons. E. Y. Teas*, *Grand Mogul*, *Maurice Bernardin*, *Duke of Albany*, *Mrs. J. Laing*, *Marquis de Castellane*, *Duke of Teck*, *Duke of Edinburgh*, *Rosieriste Jacobs*, *A. K. Williams*, *Victor Verdier*, *Comtesse d'Oxford*, *Dupuy Jamain*, *Marie Verdier*, *Comte Raimbaud*, *Prince Arthur*, *Abel Carrière*, *Xavier Olibo*, *Charles Lefebvre*, *Pride of Waltham*, *Dr. Sewell* and *Lady Mary Fitzwilliam*. Tea Scented, *Cornelia Koch*, *Boule d'Or*, *Catherine Mermet*, *Innocente Pirola*, *Comtesse de Nadaillac*, *Marie van Houtte*, *Souvenir d'Elise*, *Anna Olivier*, and *Etoile de Lyon*. 2nd, Dr. S. G. Budd, Bath, who ran Mr. Lindsell very close indeed for 1st place. 3rd, the Rev. J. H. Pemberton, Havering Atte, Romford.

In the next class for eighteen distinct varieties, three trusses of each, Dr. Budd was 1st with *Marie Baumann*, *Abel Carrière*, *Marquise de Castellane*, *Mons. E. Y. Teas*, *Louis van Houtte*, *Mrs. J. Laing*, *Duchesse de Vallombrosa*, *Prince Arthur*, *A. K. Williams*, *François Michelon*, *Alfred Colomb*, *La France*, *Etiénne Levet*, *Her Majesty*, *Madame Gabriel Luizet*; and Tea-scented—*The Bride*. 2nd, Mr. E. B. Lindsell. 3rd, the Rev. H. A. Berners, Harkstead Rectory, Ipswich.

In the class for thirty-six varieties, single trusses a piece of plate, value 5 guineas, being given by R. G. N. Baker, Esq., in addition to the 1st prize, Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Wood-

hatch, Reigate, was 1st, having good blooms of *Countess of Rosebery*, *Charles Lefebvre*, *Auguste Rigotard*, *Marie Baumann*, *Madame Victor Verdier*, *Duchess of Bedford*, *Duke of Teck*, *Comtesse de Serenye*, *Madame Gabriel le Luizet*, *Duchesse de Vallombrosa*, *Mrs. John Laing*, *Exposition de Brie*, *Marie Verdier*, *Dupuy Jamain*, *Dr. Andry*, *Mrs. Laxton*, *Comtesse d'Oxford*, *Mrs. Baker*, *Bride of Reigate*, the striped form of *Countess of Oxford*, very well shown on this occasion; *A. K. Williams*, *François Michelon*, *Etiénne Levé*, *Madame Thérèse Levé*, *Her Majesty*; and Tea-scented *Alba Rosea* and *Viscountess Folkestone*. 2nd, Colonel J. H. Pitt, Turkey Court, Maidstone. 3rd, the Rev. W. H. Jackson, Stagden Vicarage, Bedford.

For twelve triplets, T. E. Haywood, Esq., Woodhatch Lodge, Reigate (gr., G. J. Salter), was 1st, with blooms of *Captain Christy*, *Marquise de Castellane*, *A. K. Williams*, *Madame Gabriel Luizet*, *La France*, *Duke of Teck*, *Mrs. J. Laing*, *Auguste Rigotard*, *Violette Bouyer*, *Etiénne Levé*, *E. Y. Teas*. Col. J. H. Pitt, Turkey Court, Maidstone, 2nd; and the Rev. J. W. Jackson, Stagden Vicarage, Bedford, 3rd. For twenty-four distinct, single, Mr. A. Tait, Downside, Leatherhead, was 1st; also winning the Silver Medal of the *Gardeners' Magazine*. Among the blooms in this box, were fine specimens of *Marie Baumann*, *Duchess of Bedford*, *Xavier Olibo*, *La Rosière*, and *Eugène Verdier*. Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods, Reigate, was 2nd; and Mr. Ed. Mawley, Rose Bank, Berkhamsted, 3rd.

For eight triplets, Mr. R. E. West, Reigate, was 1st; Mr. A. Tait, 2nd; and Mr. J. Brown, 3rd. For eighteen distinct single trusses, Mr. T. Budgen, gr. to Mrs. F. P. Baker, Hoiwells, Reigate, was 1st; Mr. Romaine, Old Windsor, 2nd; and Mr. W. Narrows, Haddington Quarry, Oxford, 3rd. For twelve distinct single trusses, Mr. R. L. Knight, Bobbing, Sittingbourne, was 1st; *Captain Christy*, *Hill Green House*, *Stockbury*, *Kent*, 2nd; and Mr. C. J. Grahame, *Coombe Road*, *Croydon*, 3rd. For nine distinct single trusses, The Rev. F. S. Taylor, *Littleton Vicarage*, *Evesham*, was 1st; Mr. E. Williams, *Lyndhurst*, *Sutton*, 2nd; and the Rev. H. B. Biron, *Lympe Vicarage*, *Hythe*, 3rd. For six distinct, Mr. E. Horne, *Park House*, *Reigate*, was 1st; *M. Hodson*, *Esq.*, *Shirley Cottage*, *Croydon*, 2nd; and Mr. S. E. Crofts, gr. to W. D. Freshfield, *Esq.*, *Reigate*, 3rd. For six triplets, Mr. O. P. Orpen, *Colchester*, was 1st, with a box containing nice blooms of *Camille Bernardin*, *Climbing Capt. Christy*, *Niphetos*, and others. Mr. E. Wilkins, *Sutton*, 2nd; and Mr. P. G. C. Barraud, *Reigate*, 3rd.

For six, distinct, Mr. G. Rutter, *Shepperton-on-Thames*, was awarded 1st prize.

For twenty-four distinct single trusses, Mr. A. Tait, *Leatherhead*, was awarded the National Rose Society's Silver Cup, for a very fine lot; among them were *Duchess of Albany*, *Catherine Mermet*, *Mrs. J. Laing*, *Innocente Pirola*, *Violette Bouyer*, *Her Majesty*, *Madame Eugène Verdier*, *A. K. Williams*, *La Rosière*, *Madame Cusin*.

Tea and Noisette Roses; Amateurs.—In class 30, for six distinct varieties, single trusses, the Rev. F. S. Taylor, *Littleton Vicarage*, *Evesham*, was 1st, with *Marie van Houtte*, *Maréchal Niel*, *The Bride*, *Anna Olivier*, *Hon. Edith Gifford*, and *Niphetos*; 2nd, Mr. E. Mawley, *Rosemount*, *Berkhamsted*; 3rd, the Rev. H. B. Biron, *Lympe Vicarage*, *Hythe*.

Class 31 was for twelve Teas and Noisettes, three trusses of each. In addition to the 1st prize was a piece of plate, value five guineas, given in memory of the late Hon. and Rev. J. T. Boscawen. This was won by A. H. Gray, Esq., *Newbridge Hill*, *Bath*, with some admirable flowers; 3rd, the Rev. W. H. Jackson.

The best six distinct varieties, three trusses of each, came from the Rev. A. H. Foster Melliar, *Sprunston Rectory*, *Ipswich*, who had *Princess of Wales*, *Etoile de Lyon*, *Francisca Kruger*, *Madame de Watteville*, *Marie van Houtte*, and *Madame Hoste*; 2nd, Mr. E. B. Lindsell; 3rd, Col. J. H. Pitt.

The best six trusses of any Tea or Noisette came from Mr. A. H. Gray, who had finely-coloured *Maréchal Niel*; Mr. C. J. Graham, *Coombe Road*, *Croydon*, was 2nd; and the Rev. H. A. Berners 3rd, with *Comtesse de Nadaillac*.

In the amateur classes, the varieties shown were, with a few exceptions, the same as those shown in the nurseryman's classes. A. H. Gray, Esq., *New Bridge Hill*, *Bath*, won the 1st prize for eighteen distinct Tea or Noisette, which included

the holding of the Challenge Trophy for one year. The Rev. H. Berners, Harkstead Rectory, Ipswich, came 2nd; and the Rev. A. Foster Melliar, Sprouton Rectory, Ipswich, 3rd.

For twelve distinct single trusses, Mr. E. B. Lindsell, Bearton, Hitchin, was 1st in a good competition, and was awarded the *Gardeners' Magazine* Silver Medal for excellent culture. Mr. A. H. Gray, Bath, 2nd; and Mr. T. B. Haywood, Woodhatch Lodge, Reigate, 3rd.

Mr. F. G. Orpen, Hillside, West Birgholt, Colchester, was 1st for nine distinct trusses; Mr. G. A. Tait, 2nd; and Mr. S. Crofts, The Wilderness, Reigate, 3rd.

In the Tea and Noisette division, some very fine blooms were staged, and good competition showed itself throughout. In the nurserymen's classes, Mr. G. Prince, Market Street, Oxford, was the only exhibitor, twenty-four, distinct, with a splendid box, including the following varieties, *Souvenir d'un Ami*, *Souvenir de S. A. Prince*, *Belle-Fleur d'Ajon*, *Maréchal Niel*, *Madame Cusin*, *The Bride*, *Comtesse d'Nadaillac*, *Innocente Pirola*, *Mrs. J. Wilson*, *Jules Frager*, *Marquise de Sanina*, *Alba Rosen*, *Princess of Wales*, *Catherine Mernet*, *Etoile de Lyon*, *Madame de Watteville*, *Rubens*, *Hon. Edith Gifford*, *Jean Ducher*, *Marie van Houtte*, *Cornelia Koch*, *Niphotos*, *Marie Armand*, *Madame C. Kuster*.

For eighteen, distinct, Mr. J. Mattock, New Headington, Oxford, was 1st; Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, were 2nd; and Messrs. W. Paul & Son, Cheshunt, 3rd.

Mr. B. R. Cant, Colchester, was 1st for twelve single trusses of any Tea or Noisette, with a fine box of *Madame de Watteville*; Mr. G. Prince, 2nd, with *The Bride*; and Mr. J. Mattock, Oxford, 3rd, with *Hon. Edith Gifford*.

For six triplets, Mr. G. Prince was 1st; Mr. J. Mattock, New Headington, Oxford, 2nd; and Mr. G. W. Piper, Uckfield, Sussex, 3rd.

Garden Roses (Amateurs).—In this class, the 1st prize was awarded to Mr. Charles E. Cuthell, Chapel Croft, Dorking, for an excellent collection, nicely arranged in bunches, of the following:—*Austrian Yellow*, *Macrantha*, *Red Damask*, *Polyantha Pasquette*, *Perle d'Or*, *Austrian Copper*, *Miss Blanche Moreau*, *Gloire de Polyantha*, *L'Idéelle*, *Ellet Flamand*, *Rugosa*, *Madame Georges Bruant* (double white), *H.P. Bardon Job* (large single crimson), *Moscata alba*, and *Lucida plena*, as the leading flowers; 2nd, the Rev. J. H. Pemberton, with the red and striped *Provence*, *Rugosa rubra*, common *Moss*, *Aimée Vibert*, *China Maiden's Blush*, *White Rugosa*, *Damask*, &c.; 3rd, Mr. Alfred Tate, Leatherhead.

Open Classes.—The best twelve trusses of any yellow Rose, except *Maréchal Niel*, came from Mr. George Prince, Oxford, who had *Comtesse de Nadaillac*, with that rich Apricot glow Mr. Prince imparts to it. He was the only exhibitor staging, in addition, a box of *Marie van Houtte*.

There were ten exhibitors in the class for any white Rose, except *Niphotos*, and Mr. George Dickson, nurseryman, Newtownards, co. Down, Ireland, staged a dozen exquisite specimens of *Margaret Dickson*, which was awarded the Gold Medal of the National Rose Society last year. It had something of the build of *La France*, and it is nearly white, having a slight tint of blush in the centre. It promises to be a very fine addition to our white hybrid perpetuals. Mr. A. H. Gray was 2nd, with *Alba Rosea*, &c.; and Mr. B. R. Cant, with the same.

The best twelve blooms of any crimson Rose, other than *Marie Baumann* and *A. K. Williams*, came from Mr. B. R. Cant, who had *Duke of Edinburgh*; Messrs. Paul & Son were 2nd, with *Prince Arthur*; and Mr. J. Parker, Old Headington, Oxford, 3rd, with *Duke of Teck*.

The best twelve blooms of any dark crimson Rose were those of *Prince Camille de Rohan*, shown by Messrs. H. Low & Co., Beech Hill Nursery, Enfield; Mr. Geo. Mount was 2nd, with *Fisher Holmes*; and Mr. Geo. Prince, 3rd, with *Prince Arthur*.

Mr. A. H. Gray had the best twelve blooms of *Maréchal Niel*, which were finely coloured; Mr. B. R. Cant was 2nd; and Mr. George Prince, 3rd.

Dr. S. P. Budd, Gay Street, Bath, was 1st for twelve blooms of *Marie Baumann*, a well-chosen, even lot of blooms, without a weak one; 2nd, Mr. C. Turner, Slough, with good but smaller blooms. Four competed in the above class.

Dr. Budd was also 1st for twelve Mrs. John Laing, showing a good box of this fine, bright, pink-coloured novelty, showing the good points of the flower; Mr. C. Turner was 2nd here likewise, Messrs. G. Cooling & Son being considered equal

with him. The flower was shown excellently in every instance. Competitors, six.

Twelve blooms of Miss A. K. Williams.—1st, Messrs. Paul & Son, Old Nurseries, Waltham; 2nd, Messrs. H. Low & Co., Clapton, and Bush Hill, Enfield, with perfect, if somewhat smaller blooms. Some beholders preferred this stand to Messrs. Paul's. Five competed.

Twelve blooms of *Niphotos*.—Here Mr. B. R. Cant, Colchester, was 1st, with blooms caught at the nick of time. Between these and Mr. G. W. Pipers', who was 2nd, was a wide difference, the latter's, being quite small buds by comparison.

Any H.P. Rose, twelve blooms.—In this class Mr. C. Turner took the highest honours with *La France*, very nice medium-sized blooms; 2nd, Dr. Budd, with the same variety; 3rd, Messrs. A. Dickson & Son, Newtownards, with their *Marchioness of Dufferin*. In this class the competition was very strong, but the competing varieties were few, viz., *Lady Fitzwilliam*, *Harich Schultheiss*, *Madame Gabrielle Luizette*, and *La France*.

New Roses.—The 1st place was taken by the Rev. F. R. Burnside with *Souvenir de Sarah A. Prince*, a perfect bloom of this novelty not always easy to show in good condition. 2nd, Messrs. Paul & Son, Old Nurseries, Cheshunt, with Mrs. Paul (Bourbon), a blush Rose with full centre; *White Lady* was also shown by them, but the warmth of the building had caused the not too numerous petals to expand fully. In the nurserymen's division of the class for new Roses, Messrs. A. Dickson took the 1st prize for *Margaret Dickson*, a lovely Tea of filbert-shape, the central cluster of petals showing blush, although single they appear white. Most of these were disappointing; though including those offered for the first time in English nurserymen's list in the spring of 1890. Messrs. Paul & Son were awarded the 1st prize, the varieties being H.P.'s *Comtesse de Blacas*, soft deep pink, of globular shape; *Marie Magat*, bright rosy-carmine, very like *Alfred Colomb*; *Madame Chabal*, bright pale rosy-scarlet; *Marchioness of Lorne*, deep rose; *Bruce Findlay*, very bright crimson; *J. D. Pawle*, shaded crimson; *Auguste Guinoisseau*, an almost white sport from *La France*; *Bourbon Mr. Paul*, and *Tea-scented Ernest Metz* and *Souvenir de S. A. Prince*. Messrs. G. Cooling & Son also exhibited.

There was no competition in the class for nine blooms of any new Tea or Noisette Rose, though a piece of plate was offered as a prize. The Society's Gold Medal was offered for three blooms of any new seedling Rose or distinct sport not yet in commerce, and, though several were staged, no Medal was awarded. *Lord Penzance*, *Easing Park*, *Godalming*, had H.P. *Rob Roy*, a seedling from General Jacqueminot crossed with *Village Maid*; in the bud like a large pale pink *Her Majesty* and *Roger Wildrake*, from *La Ville de Burgundy* and *Richard Laxton*, of the shape and colour of *Paul Neyron*, but somewhat coarse. Messrs. Paul & Son had H.P. *Charles Gater*, bright scarlet, but small in size. Messrs. William Paul & Son had H.P. *Spencer*, a beautiful soft pink flower, of the type of *Baroness Rothschild*; *Tea Corinna*, a variety that will yet win its way in the public estimation; *Zenobia* (Moss), pink, flushed with rose, and shaded with purple; and *Mango Park* (Moss), pale pinkish-rose, large and full. Mr. George Dickson, Newtownards, had *Marchioness of Dufferin* (H.P.), soft pink, flushed with a deeper tint—very pleasing in colour, large and full.

Premier Roses.—Four of the Society's Silver Medals were awarded for the best H.P. Tea-scented, exhibited by amateurs and also by nurserymen. In the amateurs' division, the *Premier H.P.* was *General Jacqueminot*, exhibited by Mr. R. L. Knight; and the *Premier Tea* a richly coloured *Madame Cusin*, shown by Mr. A. Tate. In the nurserymen's division, H.P. *Gustave Pigareau*, new, of 1889-90, a large and showy carmine-red variety, shown by Messrs. Paul & Son; and *Tea Souvenir de S. A. Prince*, shown by Messrs. Prior & Son, Colchester.

Miscellaneous.—Under this heading come the varied and interesting collection of hardy flowers shown by Mr. T. Ware, Hale Farm, Tottenham. Of novelties of merit in this group may be mentioned two yellow-coloured Carnations, *Pride of Great Britain* and *Miss Saunders*; and *Carnation*, *Scarlet Duke*, a fine thing, and one in which it is alleged the calyx seldom splits; a *Chrysanthemum leucanthemum*, named *Semi-duplex*; and *Spiraea japonica compacta*. *Iris susiana William I.* is a soft yellow-coloured flower, very telling in the mass;

white *Pink Her Majesty*, *Achillea serrata flore-pleno*, a pretty white flower, were also observed.

Messrs. P. Barr, King Street, Covent Garden, had a stand rich in herbaceous Peonies, in variety. *Nimrod*, a rich purple; *Lord Salisbury*, crimson; *Comte de Paris*, with thread-like and guard petals—white; *Couronne d'Or*, white; and *Helen Leslie*, double, also white; were amongst the more pleasing flowers. *Chrysanthemum maximum* was observed in good condition. A large plant of *Senecio microphyllum*, a plant with thick, fleshy, much-branched stems, bearing small yellow flowers of no great beauty.

Messrs. J. Laing & Sons, Forest Hill, S.E., put up a large pyramidal group of *Begonias*, of the tuberous-rooted section, including amongst the component plants some of their finest novelties. To cap the whole, was a large plant of *B. alba rosea*, a first-rate basket plant with good blooms. New were *Alice Mann*, yellow, a good hanging plant, equalling *B. t. peodula*; *Mrs. Joseph Chamberlain*, very large, white; *Avalanche*, white; *Leviathan*, an immense flower, dark rose; *Viscount Wolseley*, salmon rose, double; *Mrs. F. Nettlefold*, a very fine blush; *Lady Cloncurry*, bronze yellow, a single-flowered variety; and *Baron Schroder*, double, an orange scarlet.

Messrs. Carter & Co., High Holborn, showed a number of *Cactus*, *Mammillaria*, *Euphorbia*, *Cereus*, and other quaint-looking succulents, a taste for growing which, they say, is springing up. A very lovely display of all sorts of *Roses* in profusion was set up by Messrs. W. Paul & Son, not in competition, in front of the grand organ. Here were flowers old and new, garden favourites of fifty or more years ago, jostled by the novelties of the day. It was noted that varieties of *Moss Roses* and the lovely *Souvenir de la Malmaison* are in good condition this year, and particularly so on this stand.

WINCHESTER.

JUNE 30.—The Guildhall was, as usual, the site chosen for the annual summer exhibition in this old city, and which partook more of the character of a Rose show than aught else, as this flower was in the ascendant. A few other classes were provided. The *Roses* on the whole, for such an early date, were of fair size, very fresh and rich in colour.

The principal class was that for forty-eight blooms, distinct varieties. Mr. B. R. Cant, Colchester, was a good 1st, the blooms possessing much merit. Mr. C. Turner, Slough, 2nd. For twenty-four trebles, distinct, Mr. B. Cant was again the winner, having a capital lot; Mr. C. Turner 2nd.

Dr. S. P. Budd, Bath, was the most successful with twenty-four blooms, distinct sorts, with perhaps the best flowers in the show; Messrs. Keyoes, Williams & Co., Salisbury, 2nd. Dr. Budd followed up his success by taking 1st honours for twelve trebles, distinct sorts; Messrs. Keynes 2nd.

Some capital blooms were staged in the classes for twelve of one colour. Dr. Budd had the best H.P. dark variety, showing *Marie Baumann*, extremely neat, and rich in colour. Mr. C. Turner, with *La France*, won for any light variety. Mr. B. Cant, with *Niphotos*, occupied premier position for twelve Tea or Noisette.

The following classes were not open to nurserymen:—With a clean even lot, Dr. Budd was the most successful for twenty-four varieties, single trusses; the Rev. J. Pemberton, Havering, Romford, 2nd. In the class for twelve varieties, trebles, Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was given 1st honours for a neat lot; Rev. J. Pemberton 2nd.

For six Teas or Noisettes, Dr. Budd was again 1st. The Rev. J. Pemberton won for twelve Teas or Noisettes with a good lot, Dr. Budd a close 2nd.

Stands of flowers arranged for table-decoration are always a feature at Winchester. For the best dressed stand, Miss Flight was an easy 1st; Mr. J. L. Trask a good 2nd.

Mr. Thomas Sowns, gr. to F. C. Birch, Esq., Clovelly, Winchester, had the best group of miscellaneous plants among three exhibitors, and also the best Ferns.

Mr. J. Gosney, gr. to Captain Mitchell, Winchester, won the 1st of Messrs. Suttons' prizes for a collection of vegetables with good produce.

ROYAL HORTICULTURAL SOCIETY OF IRELAND.

The above Society held their summer exhibition on the 2nd inst., in the beautiful grounds belonging to Lord Iveagh, near St. Stephen's Green. Notwith-

standing the backwardness of the season, and the late unfavourable weather, there was no lack of exhibits in every department. The Roses, especially those from Alexander Dickson & Sons, Newtownards and Belfast, were the chief centre of attraction. This well-known firm carried off all the leading prizes in the nurserymen's class, the judges awarding them the Society's Cup for the best forty-eight Roses, dissimilar; 1st prize for the best forty-eight Roses in twelve varieties; 1st prize for the best twelve Tea Roses; special 1st prize for a collection of a hundred Roses; 1st prize for the best thirty-six trusses of Pelargoniums. The Society's Cup for thirty-six Roses went to Lord Ashtown. Fruit was not well shown.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

[From our Special Reporter.]

THE 52nd Anniversary Festival of this Institution took place at the *Hôtel Métropole* on Wednesday evening under the presidency of the RIGHT HON. JOSEPH CHAMBERLAIN, M.P. A large number of gentlemen sat down to dinner, among them being Lord Stanley of Alderley, Sir John T. Dillwyn Llewelyn, Bart., Mr. Harry J. Veitch (Treasurer), Mr. N. Sherwood, Mr. Herbert J. Adams, and the Rev. W. Wilks.

The Chairman, who on rising to propose the toast of the evening, was loudly cheered, said:—My Lord and Gentlemen, I have now the pleasure of proposing "Continued success and prosperity to the Gardeners' Royal Benevolent Institution," now in its 52nd year, coupled with the name of Harry J. Veitch, Treasurer. Three years ago I was honoured with an invitation to be present at a similar gathering, but to my very great regret and at the last moment I was prevented by indisposition from putting in an appearance, and I confess I am thankful to the Committee for having given me another opportunity of performing what I regard as at once a privilege and a duty. I suppose that we may differ greatly upon many questions, but I think, at least I may assume, that we are all united in our interest and our love of horticulture, and under these circumstances I do not need to make any defence of our favourite pursuit. It has provided rest and brought happiness to many of the greatest and wisest in the land. Statesmen have found recreation in it; philosophers have commended it; doctors have prescribed it; lawyers have advocated it; and poets have sung its praises. The great Lord Bacon, who devoted one of his essays to the subject, said that the cultivation of flowers was the purest of human pleasures and the greatest refreshment to the spirit of man, and he did not think it at all beneath his dignity to leave behind most careful instructions as to the formation and planting of a perfect garden. But I venture to say that one of the greatest recommendations of our hobby in this democratic age, is that it is capable of affording delight to rich and poor alike, and that it can with the greatest ease be accommodated to the income of the millionaire or to the scanty pittance of the humblest labourer.

Another statesman—Sir William Temple—has written very truly that gardening is at once the pleasure of the greatest and the care of the meanest, and the cottage garden is capable of affording as much delight to its owner as the finest conservatory attached to the lordliest mansion. A new variety of *Auricula*, reared by the careful skill and the tender care of the village amateur is to him probably a source of as much pride and self-glorification as could be to another the most costly exotic or scarce orchid that ever was imported.

I claim, then, that the cultivation of flowers satisfies our love of natural beauty which is inherent in almost every human breast; that it cultivates intelligence and the powers of observation, and at the same time that it provides variety and excitement by the constant novelty which results from our attention. And while it does all these good things it is, I believe, the most unselfish of pleasures, for it is enjoyed most in the largest company, and unlike some other amusements to which the human race is prone, ours inspires no evil passions, inflicts no pain, and causes injury to no man, either in his health or in his estate.

Under these circumstances it seems to me a matter for congratulation to all of us that gardening in all its branches is daily increasing in popular favour and

attention. Never, I should think, before has the use of flowers as decorations been so lavishly and extensively employed. They may be said to accompany us from the cradle to the grave. They adorn our houses, they grace our banquets—and I may be allowed in passing to thank those who have provided so generously for the delectation of our eyes and for the gratification of our palates in the fruits and flowers which have been shown upon these tables. I say they adorn our houses, they grace our tables, they add a new charm to female loveliness, and they do something to relieve the repulsive ugliness of masculine apparel.

The interest which is felt in this pursuit is shown by the crowds which attend our great horticultural shows, and we see that thereby our principal growers are stimulated to new efforts; each favourite flower in turn is taken in hand, improved and perfected, while the uttermost corners of the globe are ransacked to find new beauties and new varieties. And in connection with all this enterprise there is a romantic side to horticulture which perhaps has hardly received the attention which it deserves.

Last year you all remember how the whole world felt a common interest in the recital of the difficulties which had been undergone and of the adventurous progress of the little band which penetrated through the darkest parts of Africa in search and in relief of Emin Pacha; but I venture to say that there are scores of modest explorers whose names are only known to the few, who undergo difficulties as great and encounter dangers as serious as those which were overcome by Stanley and his explorers, animated only by a love of science and a spirit of enterprise. The history of many flowers is a record of persistent and courageous achievement, carried out in face of extraordinary difficulty and labour. Unfortunately, this record has been made memorable by great sacrifices, by loss of health, and in some cases by loss of life. Horticulture has its heroes and its victims as well as war, and it behoves us to bear their names in respectful and admiring remembrance. But it is not only these adventurers who are always seeking fresh fields and pastures new who are deserving of our sympathy and gratitude. I have already quoted Sir William Temple. In another place he says, very truly, that in the growth of flowers success is almost wholly with the gardener, and I think it will be admitted that, without the constant care, intelligence, and industry of those who are primarily responsible, the most lavish expenditure and most perfect apparatus would be of little avail to secure satisfactory results.

How then shall we repay our debt to those who have in this respect, ministered to the pleasure and the interest of our lives? The profession of the gardener is a very interesting one, but at the same time I think we must allow that it is not too highly paid. The prizes are few, and the conditions of life are such that it is hardly possible even for those who are most thrifty and most industrious in the profession to make adequate provision for all the eventualities of life. I have thought that perhaps the most pathetic position in which a man could be placed was when one who has spent a long life in honest industry finds himself, as age approaches, with diminished capacities and with ever-declining resources, face to face with a future which has no bright spot, and to a future which offers to him only the prospect of the poor-house as a refuge for his old age. Recent enquiries have convinced me that this, unfortunately, is the condition of a much too large proportion of our working class population, and I have thought that the time has come when it is urgent that the State should intervene to remove what I think to be a blot and a scandal upon our civilisation. But in the meantime the worn-out veterans of our industrial warfare have their only hope in the operations of such societies as that for which I plead to-night. I commend to your generous support the principles of this Institution. Its object is the relief of the aged and the distressed. The subject of its bounty must have passed the age of sixty years, and must have spent twenty years of their life at least in a responsible position. Preference is given, as it ought to be, to those who have endeavoured to help themselves, to those who have been for a considerable time contributors to this institution, and relief is given in the best form in which it can be offered. The funds of the institution are not wasted in buildings and costly administration, but the whole of them are paid away, and the recipients are enabled, without breaking up their homes, to pass the remaining years of their life in comparative comfort amongst their

own relatives and friends. The institution has now lasted for more than half a century, and has had a career of continued and increasing usefulness and prosperity. At the present time, I learn, there are on the books 156 pensioners, male and female, and they are receiving the bounty of the society at a cost of something like £3000 a year. It only remains for me to appeal to you, and to appeal to all who have derived profit or pleasure from the gardener's skill, to assist this institution to meet the claims that may be made upon it, so that no deserving applicant shall be turned away, and so that all shall find relief in their time of need; and I feel sure that we shall all take a greater delight in our pursuit if we know that those who have grown grey in its service will not suffer want or dishonour in their declining years. My Lord and gentlemen, I propose this toast, and I couple with it the name of Mr. Harry Veitch—a name which, as well for his own merits, as for the services which have been rendered by members of his family through a long course of years, will ever be honoured in horticulture.

Mr. Harry Veitch, in response to the toast, at the outset, thanked the chairman for the admirable way in which he had advocated the interests of the institution, and remarked that what they heard would find, not only an echo, but a resting place in the hearts of every one present. He did not, he went on to say, propose to go into figures that evening, but he would like to say that since their last meeting their oldest pensioner had passed away at the age of 103 years. That pensioner had subscribed to the funds 15 guineas, and since the time he became a pensioner he had received from the Institution no less than £520. That, he thought, would show the advantage of any gardener becoming a subscriber to the Institution, and if, in God's providence, he never needed such assistance, he would always feel glad that he had been able to help others who had been less successful than himself.

Mr. Veitch next touchingly alluded to the losses they had sustained in the death of Mr. B. S. Williams, one of the best supporters of the Institution; Mr. Shirley Hibberd, who was always ready to do all he could in the good cause; Mr. Richards, who was a member of the committee; Mr. Deal, Mr. Backhouse, of York, and many others; and he paid a high tribute to the memory of Mr. Roger Cutler, who had been their Secretary for fifty years, and who had worked so long and nobly for the Institution.

Mr. N. Sherwood proposed "The President and the Vice Presidents," to which Mr. Herbert J. Adams responded.

Sir John T. Dillwyn Llewelyn, Bart., proposed "The Royal Horticultural and Botanic Societies of London and the United Kingdom." He said he trusted that the effect of that gathering would do a great deal in the interest of thrift, and bring together all classes of gardeners throughout the kingdom, because their old servants were men whom whom they ought never to overlook. He held that all should join the Society—both employed and employers—for the general good.

The Rev. W. Wilks, in responding, after alluding to the eloquent speech from Mr. Chamberlain went on to allude to the change that had come over the society during the past few years. He said, up to 1887 the society was certainly drifting in a direction of which they, as horticulturists, did not exactly approve. It was drifting into the direction of a mere pleasure garden for the inhabitants of South Kensington and its neighbourhood, and that was not a direction which a great scientific society like theirs ought to occupy. Since that time a great change had come over the Society, principally through the action of the Fellows of the Society itself. The Council felt that the Society's work was not being done in a proper way, and they wished for a reform—and a reform was brought about in the year he had mentioned. The Society had to struggle with considerable difficulties—with debt which was left upon them, with the burden of obsolete but still binding laws and rules. They had to struggle with a still greater burden—and here he did not want to be misunderstood—they had to struggle on with a burden, financially speaking, and only financially speaking, because burdens in many cases were great pleasures—but expensive pleasures. They had to bear the burden, a very pleasurable one, but a very costly one, of a number of life fellows subscribing nothing to the funds of the society. They were gentlemen whom the society welcomed most heartily, most cordially, but yet they entailed upon the society a very considerable expense, as with the

exception of a few generous members the Society received absolutely no subscriptions whatever from them since South Kensington was given up. For his own part he did not in the least mind any comparison being made between the state of the Society in 1887 and 1891. He could not say much about the Royal Botanic Society as he was one of those who minded their own business. He was glad the kindred Societies were doing good work in the towns and villages of England, and that many of them were becoming affiliated to the Royal Horticultural Society.

Lord Stanley, of Alderley, proposed the health of the Chairman.

The Chairman in reply said:—"It has been, as I said in my former remarks, a pleasure and a duty to be present amongst you. I claim to be one of you, because I have taken great interest in gardening now for thirty years, and during that time I have grown—or I have attempted to grow—everything, from Dandelions to Orchids, and I chiefly pride myself upon Dandelions. But I can assure you that in my devotion to this pursuit I have had my reward. I believe that it is impossible for anyone to find more healthful, delightful recreation or a greater change from care and anxiety than is to be found in the pursuit of gardening. During all this time—or at least during my later years—my business has been the business of the politician and my pleasure has been the pleasure of the gardener. I sometimes think that a parallel and an analogy might be drawn between the two pursuits. The progress of idea, and the growth of flowers, have something in common—they both require ventilation. I do not think the parallel ends there, for it is certain that they very often succeed best in heat. Then, as you know, we gardeners are troubled greatly by destructive proceedings on the part of obnoxious insects, that we know by the names of thrip, red-spider, mealy-bug, and orchid-devil. Well, gentlemen, if you have read your newspapers, you must be aware that we politicians are also troubled by insects, although I should be sorry to mention their names. I don't doubt that you will be able to supply them. Well, gentlemen, you will readily understand that, having derived so much advantage and pleasure from this pursuit, I am delighted to have an opportunity, however humble, of providing in some measure for those who are also engaged in it, but under less fortunate circumstances. I thank you very much for the compliment you have paid me.

During the evening the Secretary (Mr. Ingram) announced subscriptions to the amount of £1,450, including 50 gs. from the Chairman and 10 gs. from Mrs. Chamberlain; 10 gs. from Lord Stanley of Alderley; £20 from the Duke of Westminster; £100 from Messrs. Rothschild & Son; £50 from Mr. W. H. Salt; £30 from Baron Schroder, and £20 from Messrs. Veitch & Sons. The music was under the direction of Mr. Herbert Schartau, who was assisted by Miss Ethel Bevans, and the Meister Glee Singers, Mr. W. Sexton, Mr. Gregory Hast, Mr. W. G. Forington, and Mr. Webster Norcross.

TRADE NOTICE.

MR. J. BAILEY, for the past five years gardener to Sir John E. Dorington, Bart., M.P., Lypiatt Park, Stroud, will resign the charge of these gardens on August 8, he having taken over a florist business at Brighton on his own account.

AMERICAN FRUIT EVAPORATOR.

THE growing and storing of fruit in a convenient form has advanced in America, and on the continent, to a stage beyond the jams, jellies, and syrups of our own country; and various fruits are tinned, or dried for future use, which we, in our old wasteful style, dispose of at ruinously low prices, owing to a glutted market, or allow to go to waste. Fig. 8 shows an apparatus that will dry for future use, sliced Apples, good windfalls, or slightly unsound fruit; Plums, Cherries, Apricots, &c. There is an iron stove, lined with fireclay, and resting on this is a long (10 feet) box, divided longitudinally into an upper and a lower story.

The fruit to be dried is placed in a single layer, on wire trays with a wooden frame, about 2 feet

square. These trays are placed in the drying boxes, and in the lower division first; and after a tray has remained, just within the opening, so long as it would take to get another tray of fruit ready, it is pushed further on by inserting a tray in front of it, and so on, and by the time the tray has reached the

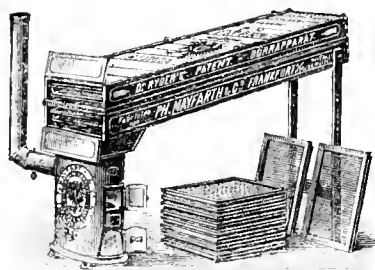


FIG. 8.—FRUIT EVAPORATOR.

upper end, the fruit in it is sufficiently dried for removal. If it is not done enough, it is put in at the lower end again, this time in the upper division, and pushed on as before. It is a very simple affair, and requires only a little practice to enable anyone to turn out perfectly good dried fruit that will keep for years in an ordinary room.

The apparatus was to be seen at the recent Strawberry Conference, at Chiswick, at work, under the direction of Mr. E. Badger, and a competent practical operator.

THE STRAWBERRY LEAF-DISEASE.

IN some gardens the Strawberry leaves are annually infested more or less by a fungus *Sphaerella Fragariae*, a kind of leaf-blight. This blight first appears on the leaves about the time of the setting of the fruit; and if the weather be dry and warm, it makes rapid progress.



FIG. 9.—DISEASE OF STRAWBERRY LEAVES.

A full description of the fungus, and its mode of existence will be found in the *Gardeners' Chronicle*, p. 798, June 28, 1890.

The remedy for this fungus is twofold, (1) to use in summer 3 oz. carbonate of copper dissolved in 1 quart of water, which should be diluted to 20 gallons; and (2), the destruction of the old leaves by burning in spring.

GARDENERS' ORPHAN FUND ROSE FETE.—Messrs. JAMES CARTER & Co. are granting a half-holiday to all members of their staff who take tickets on Wednesday next, and no doubt other London houses will not be slow to imitate their example.

THE LARGE VINE AT CUMBERLAND LODGE.—Cumberland Lodge, which has formed so large a feature in the ceremonials of the past week, is horticulturally considered, of most interest on account of the large Vine, of which we give an illustration at fig. 5, p. 41, and concerning the history of which interesting details will be found in our volume for 1874 (*Windsor Supplement*), p. 688.

PORTSMOUTH HORTICULTURAL SOCIETY.

JULY 1.—One of the best shows yet held by the Portsmouth Society was that of the above date, in Victoria Park. The competition in most of the classes was exceedingly keen.

Plants formed the most important part of the show, good prizes being offered. The principal class was that for twelve stove or greenhouse, not less than six to be in flower; Mr. Cypher, Cheltenham, gained the leading prize by the superior quality of his flowering plants; Mr. Offer, gr. to J. Warren, Esq., Handcross Park, Crawley, Sussex, was a good 2nd.

In a corresponding class for four plants, no less than seven competed, Mr. Cypher again led, Mr. F. Mould, Pewsey, Wilts, 2nd.

Specimen Palms were well shown by Mr. Offer, who took premier award for three, and for one, with healthy plants of choice kinds. Mr. Offer was the most successful with Exotic Ferns.

In the class for one specimen flowering plant, Mr. Mould won, staging a very fine *Erica retorta* major. Mr. Cypher had *Dracophyllum gracile*, in good condition, for 2nd prize. Mr. Offer, with *Croton interruptum*, in superb condition, easily won 1st for specimen foliage plants; Mr. Currey, gr. to Colonel Pepper, Milford Hall, Salisbury, 2nd, showing a healthy *Cycas revoluta*.

The best dinner-table plants were sent by Mr. Wills, florist, Shirley. Such plants as Begonias, Fuchsias, Coleus, Geraniums, &c., were staged in large numbers, the principal prizetakers being Mr. Hatch, Superintendent, Victoria Park, Portsmouth; Mr. Burridge, North End Nursery, Portsmouth; and Mr. Penford, gr. to Sir F. Fitzwygram, Bart., Leigh Park, Havant.

Groups arranged for effect were extremely good, showing much taste. The 1st prize went to Mr. Wills, for a very pretty arrangement, showing none of the overcrowding so often seen; Mr. Currey, 2nd. In a smaller class there was even stronger competition, Mr. Burridge and Mr. Hatch taking the awards in the order here given.

Cut flowers were extensively staged. Mr. Penford had the best stove and greenhouse kinds, Mr. Ladhams the best hardy varieties—both good, were contributed by the Rev. W. Shirley, Southwick Parsonage, of good quality. Messrs. Perkins & Son, Coventry, were the prizetakers for bouquets.

Fruit, although not extensively exhibited, was good in quality. For six dishes, Pines excluded, Mr. Inglefield, gr. to Sir J. Kelk, Bart., Ledworth, Marlborough, was an easy 1st, he having really good Black Hamburg Grapes, Royal George Peaches, Seedling Melon, and very fine Sir J. Paxton Strawberries. For three bunches Black Grapes, Mr. Tavener, gr. to Sir A. K. Macdonald, Liphook, easily secured leading honours with Black Hamburg, Mr. Penford won easily in the white class, staging Golden Hamburg, better than it is generally seen—in fact, seldom is this variety found in such a bright condition.

Mr. Penford won in both Melon classes, showing good fruits. Peaches were best staged by Mr. Inglefield, Nectarines by Mr. Penford, and Strawberries—a fine dish of Sir J. Paxton—by Mr. T. Hall, gr. to S. Montagu, Esq., M.P., South Stoneham House, Southampton.

Vegetables were well shown. For nine varieties, Mr. T. Wilkins, gr. to Lady Theodora Guest, Inwood House, Henstridge, easily won, with produce good in every respect. Mr. G. B. Woodward, Liphook, Hants, had the best Cucumbers and Tomatos in the classes set apart for them.

Mr. Ladhams staged a fine lot of herbaceous cut flowers, not for competition; as also did Mr. M. Prichard, Southbourne Nursery, Christchurch, which, along with the Roses sent by Messrs. Keynes, Williams & Co., Salisbury, and Messrs. Ewing, Havant, considerably attracted the general public.

Obituary.

H. J. BUCHAN, ESQ., J.P.—By the death of this esteemed horticulturist, which took place at Southampton on July 1, the south of England has been deprived of one of its best garden patrons. Whilst devoted to gardening generally, the deceased gentleman was an enthusiastic orchidist, and his collection of Orchids before its dispersal had become, under the care of his late gardener, Mr. Osborne, one of the best in the district. Perhaps it is not saying very much, after all, because it unfortunately happens that Orchids do not form a very prominent element in horticulture in the neighbourhood of Southampton. Mr. Buchan had, perhaps, the best, and its dispersal recently was an undoubted loss to the local horticultural exhibitions. The late Dr. Ward, of Southampton, also had a collection which long since went the usual way; and perhaps just now the best collection is to be found at Moor Hill, Bitterne, under the care of an enthusiastic orchidist, Mr. N. Blandford. Mr. Buchan was in life a warm and active supporter of the Southampton Horticultural Society, was also a Fellow of the Royal Horticultural Society, and very frequently came to London on purpose to see its shows, and look up the various Orchid collections about the metropolis. He was a justice of the peace for the town, had often held high office, including that of mayor in 1872, also in the corporation, and was in every sense an estimable gentleman. Braving popular prejudice, he ordered that his body should be cremated, which was duly performed at Woking on Tuesday last, after which the urn enclosing the ashes was taken back to Southampton, where the following day it was deposited in the family tomb in the cemetery with full funeral honours.

MARKETS.

COVENT GARDEN, July 9.

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

Good business doing. Supply equal to demand. Outdoor Strawberries in heavy supply. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, ½-sieve ... 3 6-6 0	Lemons, per case ... 15 0 25 0
— Nova Scotia, brl. 15 0-2 0	Melons ... 1 6-3 0
— Tasmanian, case 12 0-14 0	Peaches, per dozen ... 3 0-12 0
Cherries, ½ sieve ... 4 6-9 6	Pine-apples, St. Mi- chael, each ... 2 0-8 0
Cobs, Kent, 100 lb. 5 0-10 0	Gooseberries, ½ sieve 2 6-3 6
Gooseberries, ½ sieve 2 6-3 6	Strawberries, per lb. 0 2-0 8
Grapes ... 1 6-3 0	

NOTE.—Bananas and Appriots differ in price so greatly, according to quality and quantity on sale, that no trustworthy quotations can be afforded. Peas also vary in price every hour.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Anthuriums, 12 blms. 3 0-6 0	Pansies, 12 bunches 0 6-1 0
Arum Lilies, 12 blms. 2 0-4 0	Pelargoniums, scar- let, per 12 bun. 3 0-6 0
Bouvardia, per bunch 0 6-1 0	— 12 sprays ... 0 6-0 9
Caruations, 12 blms. 4 0-6 0	Pinks, various, per dozen bunches ... 2 0-4 0
Cloves, per doz. blms. 0 6-1 0	Poppies, various, per dozen bunches ... 1 0-9 0
Cornflower, 12 blms. 1 6-3 0	Primulas, double, 12 sprays ... 0 6-1 0
Delphiniums, 12 blms. 3 0-6 0	Pyrethrum, 12 blms. 2 0-3 0
Eucharis, per dozen 3 0-6 0	Ranunculus, 12 bun. 1 0-2 0
Gaillardias, 12 blms. 2 0-4 0	Roses, Tea, per dozen 1 0-3 0
Gardenia, per dozen 2 0-4 0	— coloured, doz. 2 0-4 0
Gl diolus, 12 bunches 4 0-12 0	— yellow (Maré- chal), per doz. 2 0-6 0
Heliotropes, 12 spr. 0 6-1 0	— red, per dozen ... 1 0-2 0
Iris, various, 12 blms. 4 0-12 0	— various, doz. bun 2 0-6 0
Lilium Harrisii, doz. 3 0-4 0	Spiraea, per bunch ... 0 4-0 6
Liliums, various, doz. 1 0-3 0	Stocks, per doz. blms. 3 0-6 0
Maiden Hair Fern, 12 bunches ... 1 0-9 0	Sweet Peas, 12 blms. 2 0-4 0
Marguerites, 12 blms. 3 0-6 0	Sweet Sultan, 12 bun. 3 0-4 0
Mignonette, doz. bun. 1 0-3 0	Tuberose, per dozen blossoms ... 0 6-1 0
Myosotis, 12 bunches 2 0-4 0	
Orchids:— Cattleya, 12 blms. 6 0-12 0	
Odontoglossum crispum, 12 blms. 3 0-6 0	

ORCHID-BLOOM IN VARIETY.

NEW POTATOS.—The supply of home-grown has increased during the last few days, which has a tendency to lower prices all round. Jersey Kidneys, 8s. 6d. to 9s.; Flukes, 9s. to 9s. 6d.; French, 8s. to 8s. 6d.; Kent, 12s. to 13s. Market weak.

OLD POTATOS.—Firm at last week's prices. *J. B. Thomas.*

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, each ... 0 4 0 6	Lettuces, per doz. ... 2 0 ...
Beans, French, lb. ... 1 6 2 0	Mushrooms, punnet 2 0 ...
Beet, red, per dozen 2 0-3 0	Mustard and Cress, punnet ... 0 4 ...
Carrots, per bunch ... 0 6 ...	Parsley, per bunch ... 0 4 ...
Cauliflowers, each ... 0 6 ...	Seakale, per basket, 0 9-1 0
Celery, per bundle ... 2 6-3 6	Shallots, per lb. ... 0 6 ...
Cucumbers, each ... 0 6-1 0	Spinach, per bushel 3 6 ...
Endive, per dozen ... 3 0-4 0	Tomatos, per lb. ... 1 0-1 6
Herbs, per bunch ... 0 4- ...	Turnips, per bun. new 0 9- ...

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aralia Sieboldii, per doz. ... 6 0-18 0	Foliage plants in variety, each ... 2 0-10 0
Aspidistra, per doz. 18 0-42 0	Fuchsias, per doz. 4 0-9 0
— specimen plants, each ... 7 6-10 6	Heliotrope, per doz. 4 0-8 0
Bedding plants, va- riety, per dozen ... 1 0-2 0	Hydrangea, per doz. 9 0-18 0
Bouvardia, per dozen 9 0-18 0	— paniculata, per plant ... 2 0-3 0
Cactus, per dozen ... 10 0-18 0	Ivy Pelargoniums, per dozen ... 4 0-6 0
Caladiums, per doz. 18 0-3 0	Liliums, various, per dozen ... 18 0-30 0
Calceolaria, per doz. 4 0-6 0	Lobelia, per dozen ... 3 0 6 0
Cyperus, per dozen 4 0-12 0	Marguerites, per doz. 6 0-12 0
Dracena terminalis, per dozen ... 30 0 60 0	Mignonette, per doz. 4 0-9 0
— viridis, per dozen 12 0-24 0	Musk, per dozen ... 2 0-4 0
Eucnymus, in var., per dozen ... 6 0-18 0	Myrtle, per dozen pots ... 6 0-12 0
Eriacs, various, per dozen ... 8 0-24 0	Palms in variety, each ... 2 6-21 0
Evergreens, in var., per dozen ... 6 0-24 0	Pelargoniums, doz. 9 0-15 0
Ferns, in variety, per dozen ... 4 0-18 0	— scarlet, per doz. 4 0-9 0
Ficus elastica, each 1 6-7 0	Roots for bedding, in boxes, each, from 1 0-2 0
	Spiraea, per dozen ... 6 0-9 0

SEEDS.

LONDON, July 9. — Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., write that to-day's market thinly attended, and presented no feature of interest or importance. Quotations, consequently, in the absence alike of either any speculative or consumptive demand, exhibited no alteration. Clover seeds are altogether neglected. Full prices are asked for both Mustard and Rapeseed. For bird seeds the sale is slow at former rates. Large blue Peas are exhausted. Feeding Linseed keeps steady.

FRUIT AND VEGETABLES.

SPITALFIELDS: July 7.—Quotations:—New Zealand Apples, 5s. to 7s. 6d. per box; English Tomatos, 6s. to 8s. per 12 lb.; foreign do., 1s. 3d. to 1s. 6d. per box; natural Rhubarb, 1s. to 2s. per doz. bundles; Gooseberries, 3s. to 3s. 6d. per half-sieve; white Cherries, 7s. 6d. to 9s. do.; Strawberries, 1s. 6d. to 2s. 6d. per peck; Seakale, 1s. to 1s. 6d. per punnet; Cabbages, 1s. 6d. to 3s. 6d. per tally; Greens, 1s. 2d. to 1s. 6d. per dozen bunches; Spinach, 6d. to 1s. 6d. per bushel; Turnips, 3s. to 4s. 6d. per dozen bunches; Cauliflowers, 3s. 6d. to 5s. per dozen; Peas, 3s. to 3s. 9d. per bushel; do., in sacks, 3s. to 5s. 6d. per sack; Carrots, 2s. to 3s. 6d. per dozen bunches; Endive, 1s. to 2s. 6d. per bundle; Cos Lettuce, 8d. to 1s. 2d. per score; Cabbage do., 6d. to 9d. per dozen; Onions, 3s. to 1s. 6d. per dozen bunches; Egyptian do., 7s. 9d. to 8s. per cwt.; Parsley, 1s. to 1s. 9d. per dozen bunches; Horseradish, 1s. to 1s. 2d. per bundle; frame Cucumbers, 2s. to 3s. per dozen; natural do., 1s. to 1s. 6d. do.; Mint, 2s. to 2s. 6d. dozen bundles.

STRATFORD: July 7.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 1s. to 3s. per tally; Greens, 6d. to 8d. per bag; do., 6d. to 1s. per dozen bunches; Carrots, household, 2s. 6d. to 3s. 6d. per dozen bunches; Mangels, 30s. to 35s. per ton; Onions, Egyptians, 120s. to 150s. do.; Green Peas, 3s. 9d. to 5s. 6d. per bag; Strawberries, English, 2s. 3d. to 2s. 9d. per peck.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending July 4, and for the corresponding period last year:—1891, Wheat, 38s. 9d.; Barley, 26s. 9d.; Oats, 21s. 1d. 1890, Wheat, 32s. 8d.; Barley, 22s. 6d.; Oats, 19s. 10d. Difference, Wheat, +6s. 1d.; Barley, +4s. 3d.; Oats, +1s. 3d.

POTATOS.

SPITALFIELDS: July 7.—Quotations:—New Jersey rounds, 7s. 6d. to 8s. per cwt.; do. kidneys, 9s. to 10s.; do. flukes, 9s. to 10s. 6d.; Cherbourg rounds, 7s. to 7s. 6d.; do. kidneys, 8s. 6d. to 9s.; do. flukes, 9s. to 9s. 6d.; St. Malo rounds, 6s. 6d. to 7s.; do. kidneys, 8s. to 8s. 6d. per cwt. Old: Magnums, 100s. to 110s.; Imperators, 100s. to 110s.; Bruce Magnums, 100s. to 110s. per ton.

BOROUGH: July 7.—Quotations:—New: Jerseys, 10s. to 11s.; Cherbourg flukes, 9s. to 10s.; do. rounds, 7s. to 8s.; St. Malo rounds, 7s. to 9s. per cwt. Old: Magnums, 100s. to 140s. per ton.

STRATFORD: July 8.—Quotations:—Old: Magnums, 110s. to 130s. per ton. New: Jersey flukes, 9s. 6d. to 10s. 6d.; Cherbourg, 8s. 6d. to 9s. 6d.; do. rounds, 8s. to 8s. 6d.; Bordeaux, 7s. 3d. to 7s. 9d.; St. Malo flukes, 8s. 6d. to 9s.; do. rounds, 7s. 6d. to 8s. per cwt.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80s. to 102s. 6d.; inferior do., 40s. to 75s.; hay, best, 60s. to 87s.; do., inferior, 26s. to 50s.; and straw, 29s. to 32s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 32° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.				
	Above (+) or below (−) the Mean for the week ending July 4.	ACCUMULATED.			No. of Rainy Days since Jan. 4, 1891.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 4, 1891.			
		Above 49° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 4, 1891.					Below 42°, difference from Mean since Jan. 4, 1891.		
1	+ 1	83	0	+ 165	+ 79	4	+ 110	21.3	13	31	
2	+ 2	111	0	+ 48	+ 101	3	+ 74	9.5	31	32	
3	+ 3	125	0	+ 79	+ 95	1	+ 78	8.1	37	31	
4	+ 2	135	0	+ 60	+ 128	1	+ 84	9.2	46	33	
5	aver	120	0	+ 44	+ 116	1	+ 81	11.1	36	31	
6	+ 1	132	0	+ 65	+ 149	1	+ 76	10.7	50	36	
7	aver	103	0	+ 68	+ 46	2	+ 83	14.2	27	34	
8	aver	116	0	+ 18	+ 37	0	aver	74	10.5	43	32
9	1	110	0	+ 31	+ 118	6	+ 80	14.1	35	38	
10	+ 1	112	0	+ 27	+ 28	1	+ 95	11.5	34	33	
11	0	112	0	+ 26	+ 31	6	+ 87	13.8	31	36	
12	+ 2	135	0	aver 0	+ 40	3	+ 84	12.3	55	48	

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N. 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 4, is furnished from the Meteorological Office:—

"The weather has been in an unsettled condition very generally, with frequent falls of rain and occasional thunderstorms. In most parts of the kingdom, however, and especially over the east and south of England, there were considerable intervals of fine bright weather.

"The temperature has continued a little above the mean over the greater part of England and Scotland, as well as in 'Ireland, N.,' and the 'Channel Islands.' In the 'Midland Counties,' 'England, N.W.,' 'Scotland, W.,' and 'Ireland, S.,' it has just equalled the normal, while in 'England, S.W.,' it has been 1° below. The highest of the maxima, which were recorded either on June 28 or 29, ranged from 77° in 'England, S.' (in London), and 76° in 'England, E.,' and the 'Channel Islands,' to 68° in 'Scotland, N.' The lowest of the minima were generally registered on July 4, and ranged from 40° in 'Scotland, N.,' and 42° in 'Scotland, W.,' and 'Ireland, S.,' to 47° in 'England, N.W.,' and to 54° in the 'Channel Islands.'

"The rainfall has been more than the mean over Ireland, the south-west of England, the 'Channel Islands,' and the north and east of Scotland, and equal to the mean in 'England, N.W.' In all other districts, however, there has been a slight deficit, although at some isolated stations the fall has been rather large.

"The bright sunshine shows a considerable decrease, and has been below the mean in the north and west of Scotland, as well as in the south-west of England and the greater part of Ireland. In most of the English districts it has exceeded the mean. The percentage of the possible amount of duration ranged from 55 in the 'Channel Islands,' and 50 in 'England, S.' to 27 in 'Scotland, W.,' and to 13 in 'Scotland, N.'"

NOTICES TO CORRESPONDENTS.

BEECH AND LIME: S. The leaves are swarming with insects allied to the greenfly and to the American blight—*Psylla fagi*. The Limes are attacked by the larvæ of the Brindled Beauty Moth. See *Gardeners' Chronicle*, August 2, 1890, p. 143.

BOOKS: *W. P. Composition, Price, and Mode of Application of various Manures*. Published by the Agricultural and Horticultural Association, Ltd., 3, Agar Street, Strand, and Creek Road, Deptford. — *Young Beginner. The Kitchen and Market Garden*. (London, Macmillan & Co.) — *The Forcing Garden*, by Samuel Wood. (London, Crosby Lockwood & Co.) — *J. W. C. Select Ferns and Lycopods*, by B. S. Williams, published and sold by his son, Victoria and Paradise Nurseries, Upper Holloway, London, N. — *Wildflower, British Flora*. Bentham and Hooker. (L. Reeve & Co., Henrietta Street, W.C.) — *Handy Book of the Flower Garden*. D. Thomson. (Blackwood & Sons.) — *A. G. Bower & Vine's Practical Botany* (Macmillan). — *Oliver Lessons. Masters' Botany for Beginners*. (Bradbury, & Agnew Co.),

BOUQUET-HOLDER: K. O. B. Any horticultural sundriesman. They do not cost much, price varying according to size, materials, and workmanship.

CINERARIA: J. F. L. Injured by a leaf-miner. Search for the burrowed leaves, squeeze or prick the grub, if the injury has only just commenced; but cut off and burn them if they are much traversed by the grub.

CUCUMBERS DYING OFF: W. G. The plants are doubtless suffering from eel-worms at the roots. Kindly send specimens.

CUCUMBERS: S. W. L. Eel-worms probably—there is no known cure. Rout them out and the soil as well, and commence with plants and soil from a clean source. We shall probably illustrate the eel-worm disease next week.

FUNGUS ON LILIA: W. White. *Uredo Lynchii*, B., figured in *Gardeners' Chronicle*, May 30, 1885.

FUNGUS IN MUSHROOM-BED: R. C. H. An immature state of a fungus called *Xylaria vaporaria*, often described in the *Chronicle*.

MOSS: K. O. B. If you mean *Selaginella denticulata* or *S. apoda*, peg down little bits on a thin layer of manure, loam, and sand, and keep close for ten days. Common moss may be taken up in thick layers, soil and all; but it must not be kept as a tender plant.

NAMES OF PLANTS: *Adolescens*. 1, *Sidalcea malviflora*; 2, *Lychnis viscaria*; 3, *Helenium grandiflorum*; 4, *Pentstemon ovatus*; 5, *Verbascum pbniceum*; 6, *Aquilegia vulgaris*, form of; 7, *Iris*—cannot name without flowers.—*Homestead*. *Aristolochia Siph.*—R. H. B. 1, *Ceanothus azureus*; 2, *Chenopodium album*; 3, *Veronica Buxbaumii*.—R. H. S. One of the many varieties of evergreen Oak, *Quercus Ilex*.—J. W. C. 1, Indeterminable—too young; 2 and 3, *Lastrea filix-mas*; 4, *Aspidium spinulosum*, probably, but too young; 5, *Aspidium spinulosum*; 6, *Polypodium*

vulgare var.; 7, probably *spinulosum*, but specimen too young.—L. S. *Aralia (Dimorphanthus) spinosa*. This plant is sometimes killed in very severe winters, if the root be not protected with bracken, leaf-mould, or the like.—G. H. P. *Alchemilla alpina*.—G. S. *Bupleurum rotundifolium*, an Umbellifer not an Euphorbiad.—J. S. 1, *Staphylea pinnata*; 2, *Alchemilla vulgaris*; 3, *Spiræa filipendula*, double; 4, *Polygonum persicaria*; 5, *Valeriana* sp.; 6, *Digitalis lutea*; 7, *Thalictrum flavum*; 8, *Carex*; 9, *Cratægus Crusgalli*; 10, *Centranthus ruber*.—W. T. *Galeopsis versicolor*.—C. K. G.—1, *Allium Moly*; 2, *Epilobium angustifolium*; 3, not found; 4, *Tradescantia virginica*; 5, *Iibiscus syriacus (Althæa frutex)*; 6, *Spiræa aruncus*.—A. C. H. 1, *Viburnum opulus*; 7, *Staphylea pinnata (Bladder-nut)*.—G. W. 1, *Ballota nigra*; 2, *Vicia sylvatica*; 3, *Funkia ovata*.—O. W. G. *Rose Maréchal Niel*, apparently.—W. N. *Hierangea paniculata grandiflora*. 1, *Caesia occidentalis*; 2, *Brassia verrucosa*; 3, *Gongora galeata*.—Miss F. *Cestrum aurantiacum*. X. Y. Z. 1, *Polemonium cœruleum*; 3, *Sedum Fosterianum*; 4, *Dianthus deltoides*; 5, *D. glaucus*; 6, *Sedum oppositifolium*; 7, *Gypsophila prostrata*; 8, *Lomaria alpina*.—E. W. *Saxifraga hypnoides*.—H. P. F. *Adiantum fragrans*; *Cyrtotium Fortunei*, probably.—T. B. 1, *Geranium lancastriense*; 2, *Geranium sanguineum*; 3, *Lamium maculatum*; 4, *Hieracium aurantiacum*; 5, *Asperula odorata*.—N. J. H. 1, *Scirpus silvatica*; 2, *Bromus mollis*; 3, *Festuca ovina*; 4 and 5, varieties of *Agrostis vulgaris*.

PANSIES: K. O. B. Grow the plants on a north border. It should be well manured and deeply dug. They may be seedlings or cutting-raised plants. August is rather late to have good blooms. For exhibition, the following may be employed:—Abdul, Blue Stocking, Boreas, Bon, Catulus, Hebe, Hyperbolus, Janus, Juno, Mars, Orpheus, Proteus.

POPPY: J. H. Withered when we received it; but apparently it is a seedling from the common field Poppy, *Papaver Rheas*. It would be worth fixing, if you could have patience to do so.

STRAWBERRIES: N. There is a great difference between the composition of wild and cultivated Strawberries. The amount of water is about the same in both, say about 87 per cent. of water, but while in the wild form there is 3 to 4 per cent. of sugar, in the cultivated varieties the sugar runs up to 7.5 per cent. The free acid is about the same in both, 1 per cent., or a little over. The nitrogenous substances are greater in proportion in the wild than in the cultivated forms. Hence, looked at as food, Strawberries take very low rank.

CATALOGUES RECEIVED.

VAN VELSEN FRÈRES, Haarlem, Holland—Plantes, Bulbeuses et Tuberculeuses.
J. LAING & SONS, Forest Hill, E.C.—General Plant, including Novelties, Begonias, Cliveias, &c.
T. LANTON, Seed-grower, Bedford—List of Strawberries for 1891—2.
W. & J. HULME, Moor Nook Farm, Sale, Cheshire—Socket-pipes and Open Trough Pipes.
ERNEST RIEMSCHEIDER—Altona, Hamburg—Special Trade Offer of Berlin Lily of the Valley.

COMMUNICATIONS RECEIVED.—G. Cannon.—C. A. M. C.—A. W., Bocking Place.—Captain Oliver, R.N.—H. W. W.—E. M.—W. A. C.—F. R.—C. J. W.—W. B. H.—A. D. W.—W. J. S.—G. W.—W. G.—J. J. W.—R. D.—A. G. C.—H. E.—W. D.—J. S.—J. W. Wasley (kindly send photograph for our inspection).—E. R.—J. Douglas.—J. O'B.—A. G.—R. A. R.—J. C.—T. W. L.—A. W.—H. A. B.—A. B.—T. H.—W. S.—W. H. D.—P. C.—A.—J. B.—W. B.—W. H. P.—R. M.—P. M. & Co.—J. W.—E. C.—W. White.—R. C. H.—W. J. F.—J. F.—J. D. B.—Constant Reader.—E. H.—L. F.—Graminea.—Want of space forbids our answering the last five in this week's sense.—A. Beck.—Hauery, Vienna.

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No. 73. NEW SPAN-ROOF GARDEN FRAME. CASH PRICES, CARRIAGE PAID. 4 ft. by 6 ft. ... £2 14 0 | 12 ft. by 6 ft. ... £5 14 0 8 ft. by 6 ft. ... 4 4 0 | 16 ft. by 6 ft. ... 7 4 0

No. 74. THREE-QUARTER SPAN GARDEN FRAME. CASH PRICES, CARRIAGE PAID. 4 ft. by 6 ft. ... £2 14 0 | 12 ft. by 6 ft. ... £5 17 0 8 ft. by 6 ft. ... 4 5 6 | 16 ft. by 6 ft. ... 7 8 6

No. 75. MELON AND CUCUMBER FRAME. CASH PRICES, CARRIAGE PAID. 4 ft. by 6 ft. ... £2 0 0 | 12 ft. by 6 ft. ... £4 3 0 8 ft. by 6 ft. ... 3 0 0 | 16 ft. by 6 ft. ... 5 6 0 No. 77—Smaller size Frames, 6 ft. by 4 ft. £1 15 0 similar to No. 75. 9 ft. by 4 ft. 2 7 6 12 ft. by 4 ft. 3 0 0

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Sirs,
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Thanks to your "Stott" Distributor, our Wall trees and Roses were never cleaner than at the present time. We have a long border of Roses, about 150 yards long, and one filling of the Distributor with "Killmright" will cleanse them thoroughly. I have been asked by many how the Roses are so clean, and I at once told them to get one of the "Stott" Insecticide Distributors, and join to their hose, and they will soon find the benefit. I have used it all round the walls, and it has cleansed everything. I think it a very useful invention, and shall recommend it to all my friends.—I remain, yours truly,
R. C. WILLIAMS.
Gardener to The Earl of Lisburne.

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For ORCHIDS, STOVE PLANTS,

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FOR PLANTS.

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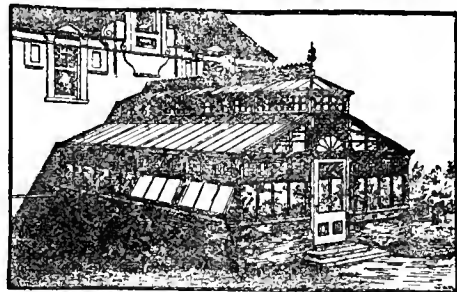
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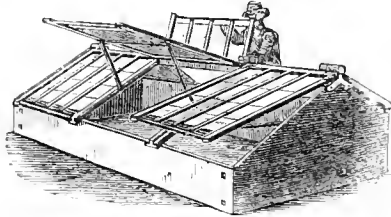
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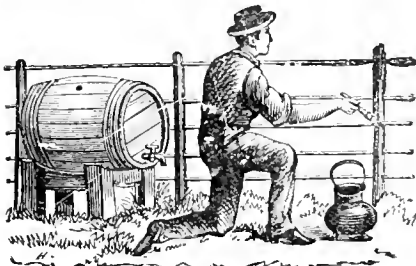
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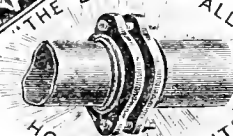
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WANTED, IMMEDIATELY, a really good and competent all-round Man as WORKING PROPAGATOR, GROWER, and HEAD GARDENER in a Private Place, where the produce is sold. Must be well up in Growing and packing for Sale, and able to produce a good quantity of Cut Blooms, Cucumbers, Tomatos, Mushrooms, &c. Private Gardeners need not apply unless they have previously held similar appointments. Preference given to a married man without encumbrance. Applicant must be a good disciplinarian with undermen, and character to bear the strictest investigation as to industry, honesty, sobriety, and regularity. Wages 30s. per week, and house.—Apply, by letter only, to HORTICULTURE, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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WANTED, a steady GARDENER, must thoroughly understand Kitchen Garden routine and Pleasure Grounds. Wages 17s. Good House and Garden.—Colonel BENVENUE, Stakeley Hall, Huntingdon.

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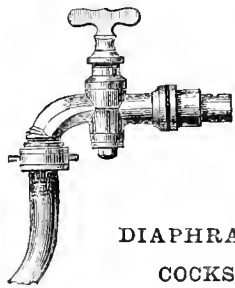
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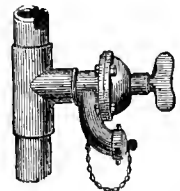
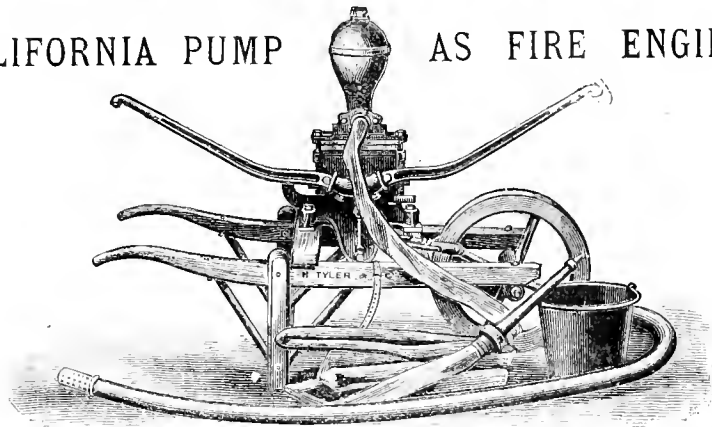
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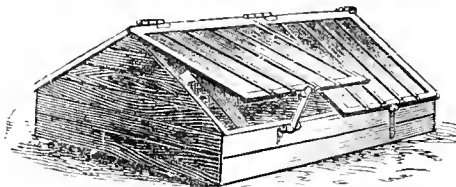
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Sow now for early flowering in Spring. **ROEMER'S SUPERB PRIZE PANSIES.** The finest strain of Pansies in the World. 蘭花. Introducer and Grower of all the leading Novelties. CATALOGUE free, on application. FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

HENRY SQUELCH, FRUIT SALESMAN AND COMMISSION AGENT, is open to receive Consignments of all kinds of HOT-HOUSE PRODUCE. All Consignments receive personal attention. Account Sales daily, and cheques weekly, or as desired. Empties and Labels supplied. North Row, Covent Garden, W.C.

J. W. BARNHAM Receives on Commission, J. GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found. Long Market, Covent Garden, W.C.

PALMS.—For Special Low Offer of PALM SEEDS and SEEDLINGS, all the leading kinds, write to H. DAMMANN, Jun., Breslau.

LILY OF THE VALLEY.—German Crowns will flower the best. Write for Trade Price of strong Forcing Pips to H. DAMMANN, Jun., Breslau.

Choice Vegetable Seeds for Autumn Sowing. **H. AND F. SHARPE'S** Special Priced LIST of Choice VEGETABLE SEEDS for Autumn Sowing, is now ready, and may be had on application. It comprises Selected Stocks of Cabbage, Onion, Lettuce, Turnip, &c. Seed Growing Establishment, Wisbech.

EAST LOTHIAN STOCKS.—Methven's Choice Strain, in five varieties—Crimson, Purple, White, Scarlet, and White Wall-leaved—in Packets, 1s., 2s. 6d., and 5s. each colour. THOMAS METHVEN AND SONS, by Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

WANTED, extra sized plants of **DIPLADENIA BOLIVIENSIS, D. BREARLEYANA, IXORA WILLIAMSTI, I. FRASERII, PIMELIA SPECIABILIS, P. NEYPERGIANA, P. HENDERSONII, PHENOCOMA PROFIFERA BARNESI, ALLAMANDA VIOLACEA, IXORA MORSEI, and CROTON MORTII.** State sizes, prices, and full particulars to—WM. CLIBRAN AND SON, Oldfield Nurseries, Altrincham.

SUTTON'S GLOXINIA. Awarded the Royal Horticultural Society's Floral Silver-gilt Medal at the Great Temple Show, 1890. Price of seed, mixed colours, 5s. and 2s. 6d. per packet, post-free.

SUTTON'S CALCEOLARIA.—The finest strain in existence. Price of seed, mixed colours, 5s. and 3s. 6d. per packet, post-free.

SUTTON'S CINERARIA.—Unsurpassed by any other strain in cultivation. Price of seed, mixed colours, 5s. and 2s. 6d. per packet, post-free.

SUTTON'S SEEDS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

Exhibition Lawn Grass. **DICKSON AND ROBINSON** offer their Superb Mixture of DWARF EVERGREEN LAWN GRASS SEED, Of the same quality as that supplied by them for the Grounds of the Royal Jubilee Exhibition, Manchester. Per lb., 1s., post-free, 1s. 3d.; per cwt., 100s. Carriage Paid. Seed Warehouse, 12, Old Millgate, Manchester.

The Best Present for a Gardener. VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published. New Edition. Price 5s., post-free, 5s. 6d. A. F. BARRON, Royal Horticultural Society, Chiswick.

Hyacinths, Tulips, Crocus, Lilies, &c. **C. G. VAN TUBERGEN, Jun., Haarlem,** Holland. Wholesale CATALOGUE now ready, and may be had free on application to—Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C. N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

Trade Offer of Large Kentias and Cocos. **W. ICETON** begs to offer some extra fine **W. BELMORIANA, FOSTERIANA, MOOREANA, and RUPICOLA,** from 8 to 15 feet high; a few extra-sized Grand Specimens, from 20 to 25 feet, with 10 to 18 leaves; large batch of **COCOS FLEXUOSA** and **FLUMOSA,** 9 to 15 feet. Prices on Application. Inspection invited. Putney Park Lane, S.W. (near Barnes Station); also 129 and 130, Covent Garden Market.

Cheap Palms! Palms!! Palms!!! **J. W. SILVER** invites inspection of his immense Stock of PALMS, the Cheapest in the Trade, of KENTIAS of all kinds; CORYPHA, SEAFORTHIA, COCOS, PHENIX, and many others. LIST of prices on application. Streatham and Norbury Nurseries, S.W.; and Marlborough Mansions, Victoria Street, Westminster, S.W.

CLEARANCE SALE OF BULBS FOR PRESENT PLANTING. Lemoine's beautiful new **GLADIOLI,** in mixture, per dozen, 4s. 6d.; **RANUNCULUS,** showy sorts, mixed, 2s. 6d. per 100; beautiful new large-flowered single **POPPY ANEMONES,** mixed, 1s. 6d. per 100; **ANEMONE FULGENS,** the beautiful scarlet Windflower of the Riviera, 4s. 6d. per 100; per 1000, 40s. Sweet-scented **PEARL TUBEROSES,** 3s. per doz.; per 100, 18s. Carriage Free on receipt of Post Office Order. BARR AND SON, King Street, Covent Garden, W.C.

VISITORS TO THE CONTINENT are cordially invited to visit the Establishment of **L'HORTICULTURE INTERNATIONALE;** Directors, Messrs. J. LINDEN and LUCIEN LINDEN, Leopold Park, Brussels. This grand Establishment contains the FINEST and LARGEST STOCK OF ORCHIDS and NEW PLANTS in Europe. Large Conservatories, &c. English CATALOGUE sent gratis.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney. W.M. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Friday Next.
CATTLEYA AUREA.
LELIA PRÆSTANS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and 213, Park Road, Clapham, S.W., to SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, July 24, at half-past 12 o'clock, a remarkable good lot of Cattleya aurea, brought home personally by the collector; the plants were collected in the same locality, whence came the plants we had the two previous years, and which turned out such an exceedingly fine lot, amongst which flowered C. aurea marmorata, C. Massiana, C. Harlyana, and other magnificent varieties. Many good things may be expected out of this importation. We can assure intending buyers the plants are well-leaved, and without doubt the finest ever offered.

Also a very healthy lot of LELIA PRÆSTANS, CATTLEYA WALKERIANA, C. SCHOPFELDIANA, ODONTOGLOSSUM POLYXANTHUM, well-grown plants, in spike; out of the same batch we have flowered some of the most beautiful varieties ever seen. ODONTOGLOSSUM RAMOSISSIMUM, a pretty winter-blooming Orchid; there are a grand lot, ONCIDIUM ROGERSI, fine plants, in unusually good condition; CATTLEYA LODDIGESII, newly imported, just received in first-class condition. HOPELLEIA Species, new, in bud, discovered recently by one of our collectors, and said to be of great beauty, the erect spike carrying eight to twelve large, well-coloured flowers. ZYGOPETALUM GRAMMIFOLIUM, a pretty dwarf species, growing on a stem of a Lomaria, flowers deep green, with chestnut and white; figured in the *Botanical Magazine*, t. 5045. COLAX JUGOSUS, well-grown plants; CATTLEYA LOBATA, ONCIDIUM WELTONI, established plants; ODONTOGLOSSUM HARRYANUM, in bud; CATTLEYA LEOPOLDI, in bud or flower; MASDEVALLIA POLYTRICHA, in flower; ONCIDIUM PHYMATOCILLIUM, O. MICROPOGON, ODONTOGLOSSUM ROEZLI, O. VEXILLARIUM, &c.

On view morning of Sale, and Catalogues had.

Friday Next.
BRASSAVOLA DIGBYANA.
CHYSIS BRACTEOSENS.

A Grand Lot. By order of Messrs. F. Horsman & Co.
MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on FRIDAY NEXT, July 24.

On view Morning of Sale, and Catalogues had.

Tuesday, July 28.

400 PHALENOPSIS GRANDIFLORA.
Best Java variety.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, July 28, at half-past 12 o'clock, an importation of 400 Plants of the best Java variety of PHALENOPSIS GRANDIFLORA, just received in excellent condition.

On view the morning of Sale, and Catalogues had.

Tuesday, July 28.—Orchids in Flower.

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS in FLOWER will take place as above, and they will be glad to RECEIVE NOTICE of ENTRIES as EARLY AS POSSIBLE.

200 EASTER BERMUDE LILIES.
LILUM HARKINSI, in magnificent Bulbs.
Just to hand from Bermuda.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, July 28, at half-past 12 o'clock, a special importation of splendid Bulbs of the true EASTER LILY of BERMUDE. To those desirous of having this beautiful Lily in flower early in the season, this importation is of special importance, the bulbs being the finest ever imported; all very heavy and plump, and sure to bloom magnificently. Also 1000 Bulbs of the bright SCARLET LILY, LILUM POMONIUM.

On view morning of Sale, and Catalogues had.

Friday, July 31.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, July 31, at half-past 12 o'clock, by order of Messrs. Seeger & Tropp, a large selection of well-established, clean, and healthy ORCHIDS, embracing

FIVE NEW ORCHIDS,
EIGHTEEN EXTREMELY RARE ORCHIDS,
and a great number of other
CHOICE SELECTED ORCHIDS.

Also

An Importation of BRAZILIAN ORCHIDS, ex s.s. "La Plata," just arrived in superb condition; together with other importations of EAST INDIAN ORCHIDS of value, the whole of which will be offered, with few exceptions, WITHOUT THE LEAST RESERVE.

On view morning of Sale, and Catalogues had.

WANTED, a small establishment for a FLORIST'S BUSINESS, where a good business can be done.—State Lease, Goodwill, and number of Houses, to the HEAD GARDENER, Henwick Grange, Worcester.

WANTED, to RENT, on LEASE, an ACRE or TWO of LAND, with Glass; also good DWELLING-HOUSE.

Address, FIELDEN, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, to RENT or PURCHASE, a small FLORIST and JOBBING BUSINESS, N. or N.W.—T., 6, Stamford Terrace, Stamford Hill, N.

FOR DISPOSAL.—A FLORIST'S and FRUITERER'S BUSINESS. High-class trade in large town, near London, with good Wreath Trade.
Address, PALMS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FRUITERERS and GREENGROCERS.—Well-established busy Market-place; taking £30 to £40 weekly, cash trade. Closed Sundays. Long lease. Low rent. Good Horse, and covered Van. Price £150, includes everything.
ALPHA, 89, Falcon Road, Battersea, S.W.

To Gardeners.

TO BE DISPOSED OF IMMEDIATELY, a good JOBBING and FLORIST BUSINESS, with Stall in public Market.

Apply, Mr. J. ASTONS, Newsagent, Chester.

To Florists, Gardeners, &c.

TO BE DISPOSED OF (in consequence of death of proprietor), the flourishing BUSINESS of a FLORIST, &c., in one of the principal streets in Tenbury. Consisting of Greenhouse, Fruit Trees, Vines, &c.

Apply to MRS. ROBERTS, Cross Street, Tenbury.

TO BE LET, or SOLD, on sixteen years'

Lease, a small COMPACT NURSERY, with six Greenhouses, Pits and Frames of 20 Lights, the Houses are heated with Hot-water, and 3-Saddle Boilers to drive the same; all being in good repair, the whole standing on about half an Acre of Land, 8 miles from London, and ten minutes walk from station Great Eastern Railway.

Apply to W. COPE, Ann's Villa, Stanley Road, South Woodford, Essex.

TO BE DISPOSED OF, a NURSERY,

SEED, and FLORIST'S BUSINESS.—About 3 Acres of Land, with 4200 feet of Glass, including large Vinery, Greenhouse, Fernery, Cucumber, Tomato, and Propagating Houses. A large dwelling-house, with a fine Shop, close to the General Post Office. Also a good MILK BUSINESS, and PUBLIC LAWN TENNIS GROUNDS (the profits of which pay the rents of the whole business). This, being in the hands of present occupier over Twenty Years, may be relied upon as a Genuine Business, and satisfactory reasons for disposing of it will be given. Incoming, including Furniture, Fixtures, Stock-in-Trade, and Goodwill, about £100.

Apply first to JUSTITIA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

London.—In a Populous and Busy Suburb.

FOR SALE, on exceptionally favourable terms. The LEASE and GOODWILL of a well-established SEED and FLORIST BUSINESS. Excellent Shop in Main Road, near two Stations. Turn over £120 to £1300 a year. Splendid chance for a beginner. Lease 24 years. Rent £80. Also SMALL NURSERY close to shop, with 6 Houses. Rent £4. Fine opening for Jobbing and Trade. Price all at £500, or offer. Apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

MIDDLESEX (7197).—A capital NURSERY, close to two Stations, and comprising 6½ acres of land, with twenty-three greenhouses, two cottages, stables, and coach house. Rent £150 per annum. Price for glass £1,200; stock optional.

Apply, PROTHEROE AND MORRIS, 67 and 68, Cheapside, S. E.

TO GARDENERS and OTHERS.—One Large CONSERVATORY, about 58 feet by 24 feet, with Fancy Tile Paving and Hot-water Pipes, to be SOLD—a BARGAIN.

Apply to FOREMAN, Burntwood House, Wandsworth Common, or to T. BLACKMORE, 1, Royal Road, Clapham.

TO LET, on Lease, or otherwise, a SMALL NURSERY, in good neighbourhood, 10 miles from London, South-Eastern Loop Line.

Apply, C. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.

Address, SECRETARY, 43, Great Tower Street, E.C.

J. WEEKS AND CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers.

King's Road, Chelsea, S.W.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

To Road Contractors, Gardeners, and Others.

THE METROPOLITAN ASYLUMS BOARD are prepared to receive TENDERS from persons willing to CONTRACT for the FORMATION of PATHS, LEVELLING of GROUND, &c., at the SOUTH EASTERN FEVER HOSPITAL, Hatfield Street, New Cross, S.E., in accordance with Plans and Specification prepared by Messrs. H. JARVIS and SON, Architects, 29, Trinity Square, Southwark, S.E. Printed Forms of Tender, with Specification and Conditions of Contract, may be obtained at the Offices of the Architects, at the aforesaid address, upon payment of a deposit of Two Guineas, which will be returned to persons sending in a bona fide Tender, where also the Plans may be inspected. Sealed Tenders, endorsed "Tender for Paths, and other works, South Eastern Hospital," are to be delivered not later than 12 o'clock noon, on Thursday, July 23, 1891, at the Chief Offices of the Board, Norfolk House, Norfolk Street, Strand, W.C. The Board do not bind themselves to accept the lowest or any Tender.

By Order,
T. DUNCOMBE MANN, Clerk to the Board.
Norfolk House, Norfolk Street, Strand, W.C., July 10, 1891.

EXHIBITIONS.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON.
GREAT SUMMER SHOW, August 1 and 3. £250 in Prizes.
Entries close July 27.
CHRYSANTHEMUM and FRUIT SHOW, October 27 and 28.
Over £100 in Prizes. Schedules and Entry Forms of C. S. FUIDGE, Secretary.
Westwood Park, Southampton.

LIVERPOOL HORTICULTURAL ASSOCIATION.
The TWELFTH ANNUAL SUMMER EXHIBITION of PLANTS, FLOWERS, FRUIT, and VEGETABLES will be held in SEFTON PARK, on SATURDAY and MONDAY, August 1 and 3, 1891. And the GREAT CHRYSANTHEMUM and FRUIT SHOW, in St. George's Hall, on TUESDAY and WEDNESDAY, November 17 and 18. SPECIAL PRIZES and CUPS for Forty-eight and Thirty-six CUT BLOOMS.
Schedules on application to the Secretary,
EDWARD BRIDGE.

Tarbock Road, Huyton, Liverpool.

NORTHAMPTONSHIRE HORTICULTURAL SOCIETY'S GREAT SUMMER SHOW, Delapre Park, Northampton, August 3 and 4.

TWO HUNDRED and FIFTY POUNDS in PRIZES.
For Best Twelve Plants ... £15, £10, £5, £2 10s.
Central Group for Conservatory Decoration ... £9, £6, £3 10s.
Collection of Fruit (8 distinct varieties) ... £4, £3, £1 10s.
Collection of Vegetables (12 varieties, selected) £3, £2, £1.
Entries close on July 24.

Schedules and full particulars from Northampton, W. B. TROUP, Secretary.

CARDIFF HORTICULTURAL SOCIETY.

President: THE MAYOR OF CARDIFF (the Most Hon. The Marquess of Bute, K.T.).

ANNUAL SHOW, August 12 and 13 next.

THREE HUNDRED POUNDS IN PRIZES.
Entries close on August 5.

Schedules Ready. Apply—
SECRETARIES, 54, Woodville Road, Cardiff.

Circle Horticole Van Houtte, Ledeborg, Ghent.
GREAT GENERAL HORTICULTURAL EXHIBITION, under the patronage of the Government and the Provincial and Town Councils. From SUNDAY, August 23, to SUNDAY, August 30, 1891. For Programmes and Schedules, address—
ERNEST DELARUYE, Secrétaire du Cercle V. H., Chaussée de Bruxelles, Ledeborg, Gand.

Rare and Valuable Orchids.

MR. RICHARD PFAU has entrusted me with the sale of the following rare and valuable ORCHIDS, collected by him in Costa Rica, all of which are now offered in perfectly established plants, viz.:

BARKERIA ELEGANS, nice plants, 5s. each.
ODONTOGLOSSUM KRAMERI.—According to Collector, this very distinct and beautiful species will always remain scarce, being very rare in its native country. Nice plants, of flowering size, 30s. each; fine strong plants, 105s. each.
ODONTOGLOSSUM OERSTEDI MAJUS.—This very distinct and fine variety has larger flowers, and several flowers on each spike, much superior to type. Fine plants, 5s. and 7s. 6d. each; 42s. per dozen.
TRICHOPILIA COCCINEA ATRO-RUBENS.—The entire lip of a deep blood-red colour, very fine variety, 7s. 6d. and 10s. 6d. each.
TRICHOPILIA TURIALBE, Rehb. f.—Very rare and most distinct species, with citron-yellow flowers; only one single plant found by Collector, 25s.
TRICHOCENTRUM PFAU, Rehb. f.—A pretty winter flowerer; flowers of long duration. Small established plants, 7s. 6d. each.
The stock being very limited, early orders respectfully solicited.

Orders will be executed in strict rotation, and forwarded Post and package free to any part of Great Britain or Continent. Terms, payment within 30 days after receipt of plants, either by Post-office Order or crossed Cheque, made payable to EDWARD ORTIGUES, Inspector of Botanic Gardens, Zurich, Switzerland.

LILIES OF THE VALLEY!

First-class Berlin Crowns,

from sandy soil; the best for early forcing; finest large flowers, any quantity.

Prices and terms on application.

NONNE & HOEPKER,
LILY OF THE VALLEY GROWERS and NURSERYMEN,
AHRENSBURG, near HAMBURG, GERMANY.

Orders should be booked now.

LOVELY TEA ROSES.

Best sorts, in pots, 18s. per dozen; stronger, 2s. 6d. and 3s. 6d. each; New and Choice Varieties, 2s. 6d., 3s. 6d., and 5s. each. See Catalogue, gratis.
WM. CLIBRAN and SON, Oldfield Nurseries, Altrincham; also 10 and 12, Market Street, Manchester.

To the Trade.

SURPLUS STOCK,
MAIDENHAIR FERNS.
Very fine plants of above, ready for Market, in 4½ inch pots at 40s. per 100.
Package free. Cash with order.
TAYLOR and CO., Timperley, Cheshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of

ESTABLISHED & SEMI-ESTABLISHED ORCHIDS,

And they are constantly receiving Importations from various parts of the world.

DESCRIPTIVE and PRICED CATALOGUES Post-free, on application to the Company,

THE VINEYARD & NURSERIES, GARSTON, near LIVERPOOL.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

"CARNATION—LIZZIE McCOWAN."

The Best Pure White Carnation ever introduced. Flowers fine and large, pure white, and beautifully fringed; the most free-flowering variety known. Very valuable for Cut Flower purposes, as the buds do not burst.

Strong small plants, now ready. Price, 3s. 6d. each; 30s. doz. Orders executed in strict rotation.

PITCHER & MANDA, The United States Nurseries, Hextable, Swanley, Kent

Trade Offer.

W. ICETON begs to offer the following

- Strong ARECA LUTESCENS, in 60's, at 60s. per 100;
- " COCOS WEDDELIANA, in thumbs, at 32s. and 50s.;
- " SEAFORTHIA ELEGANS, in thumbs, 20s. and 30s.;
- " KENTIAS, BELMOREANA and FOSTERIANA, in thumbs, 40s. and 75s.

" SEEDLINGS in Stores, at 30s. per 100. ASPARAGUS, P. NANUS, strong, in thumbs, at 45s. per 100. Extra fine PANDANUS VEITCHII, in all Sizes, Putney Park Lane, S.W.

Begonias a Specialty.

LAINGS' COLLECTION of Double and Single varieties is NULLI SECUNDUS, for pot culture, as bedding plants, or as hanging basket plants. Inspection invited. Best and most descriptive CATALOGUE ever published, post-free. Catford Bridge Railway Station.

JOHN LAING AND SONS, Begonia Growers, &c., Forest Hill, London, S.E.

NEW FERN — PTERIS VICTORIE.

Best Novelty of the Season. 10s. 6d. each; three plants for 21s. Coloured Illustration, post free, 1s. WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

THE BURGHLEY STRAWBERRY

PLANTS are acknowledged the best—not the largest collection, but the most select—all the best varieties represented. The forcers include Vicomtesse, La Grosse Sucrée, Anguste Neicise, and that excellent variety, John Ruskin. Write for CATALOGUE, free. R. GILBERT, High Park, Stamford.

SOUTH OF IRELAND GROWN DAFFODILS.—Bulbs never finer than this season.

See Article in Garden, June 6. CATALOGUES ready end of July. Bulbs now ready. Please write for Catalogues, and INSIST on August delivery. W. RAYLOR HARTLAND, F.R.H.S., Seed-man, 24, Patrick Street, Cork. Daffodil Grounds, Ard Cairn, Cork.

FERNS! FERNS!! FERNS!!!—Trade.

In 25 most saleable kinds, at 12s. per 100. Large Adiantum euneatum, fine tops, in 5-inch pots, 50s. per 100. Large Ferns, in variety, 45s. per 100, in 48's. Extra large Aralia Sieboldii, in 48-pots, 6s. per dozen, 45s. per 100. Packed free. Cash with Order.

J. SMITH, The London Fern Nurseries, Loughboro' Junction, S.W.

GARDEN.

For whatever is wanted, mentioned or not in these columns, please to write immediately to H. CANNELL AND SONS, whose Seed and Nursery Stock is very complete and extensive, and where nearly everything for the Garden is grown and supplied in large quantities, in the finest possible condition, at the lowest price, consistent with correctness and superior character. Send for CATALOGUES.

SWANLEY, KENT.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World. 30 minutes from St. Pancras.

J. W. SILVER offers the above, which have just arrived in splendid condition, and from the most trustworthy sources, of—

- KENTIA FOSTERIANA,
- BELMOREANA,
- SEAFORTHIA ELEGANS.

In large or small quantities, Streatham and Norbury Nurseries, London, S.W.

SOW NOW for SPRING FLOWERING.

- MYOSOTIS DISSITIFLORA } Forget-me-Nots
- MYOSOTIS DISSITIFLORA ALBA }
- SILENE PENDULA COMPACTA
- SILENE PENDULA COMPACTA ALBA
- WALLFLOWER, Cranford Golden Beauty
- WALLFLOWER, Graham's Blood Red
- WALLFLOWER, choice double German
- STOCKS, Brompton and East Lothian
- PAPAYER NUDICAULE } The favourite Iceland
- " " ALBUM } Poppies.
- " " MINIATUM }
- PRIMROSE, choice hybrids
- POLYANTHUS, choice mixed and gold laced
- PANSIES, choice show and fancy strains
- VIOLAS, in separate colours

Per packet 6d., 1s., and 1s. 6d., post-free; or in larger quantities. By making sowings of above now, beautiful displays may be obtained next Spring.

For all other FLOWER SEEDS see CATALOGUE, sent post-free, on application to—

DICKSONS Seed Merchants & Nurserymen CHESTER (LIMITED)

STRAWBERRIES.

For the Best Flavoured, see

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For the Best Forcing Kinds,

For the Largest Fruited, see

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For the Hardest Villa Garden Sorts,

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GEORGE BUNYARD & CO.'S

LIST of SUMMER FRUITS, Free by Post.

THE OLD NURSERIES, MAIDSTONE, KENT,

And buy the Best Sorts and Best Plants from them.

WHITE ROMAN HYACINTHS.

BENJAMIN RIMBAUD,

BULB GROWER.

Quartier du Temple, Toulon (Var), France (The largest Bulb Grower in the South of France).

Offers—

- EARLY WHITE ROMAN HYACINTHS.
- PAPER-WHITE NARCISSUS GRANDIFLORA and other NARCISSUS.
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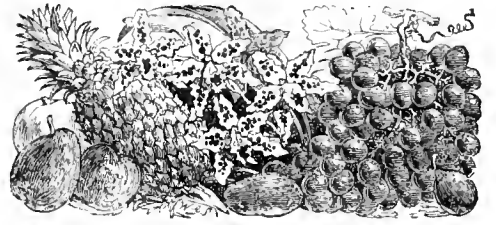
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THE
Gardeners' Chronicle.

SATURDAY, JULY 18, 1891.

DULWICH PARK.

THIS acquisition, opened by Lord Rosebery a year ago, has rapidly become attractive and popular. It will be remembered that the 72 acres which formed the site of the Park were the property of the Governors of Dulwich College, and were handed over by them to the Metropolitan Board of Works, and that it was laid out and is kept up at the expense of the successors of that body, the London County Council. An advantage of the site was, that it lay in meadows well planted with great Oaks, which seem indigenous to the stiff strong soil, and which now impart to this new site a noble aspect, such as only old parks, as a rule, can boast of. Another feature is, that the loafing population which lolls upon the grass in St. James's Park, thick as windfalls in an orchard, is here conspicuous by its absence. Dulwich Park, though open to all, is specially frequented by a superior class of visitors from the immediate neighbourhood, and their conduct, it is said, has always been, in the words of my informant, "first-rate."

In shape and outline, this new park bears some resemblance to the old one I have just mentioned, and it shares with it the ornament of water which sparkles in the bosom of some well-devised shrubberies, with winding walks, seats, and a bridge amongst them. The area of the lakelet would hardly admit of boating for a pastime, but it quite suffices for the dignity of several swans which ride proudly upon its surface, and during last winter hundreds of skaters found room for daily amusement on the ice for weeks together. Summer has come, and the lake is still the centre of attraction to hundreds who sit, or saunter, on its margin in the soft hours of evening. Most persons will allow, whether they have seen Niagara, or not, that there is something exceedingly attractive in a waterfall, and I must not omit to mention that the water quits this lake, as the St. Lawrence does Lake Erie, by a fall, below which the little stream winds through a well-kept lawn to its exit from the Park. The margins of the lake and stream are neatly set with large flints, and they will presently be made even more ornamental than they are already, by the planting, close to the water, of appropriate subjects such as Bamboos, Arundo Donax, Pampas grass, Acorus calamus, and perhaps, if it be not too big, that noble plant, denizen of Dove-side and many a mountain stream, the great Water Dock, Rumex hydrolapathum.

To give the exact position of the Park, it fills the shallow valley which stretches from Dulwich village towards Lordship Lane station. In shape the grounds are four times longer than their breadth, a fortunate disposition of the surface which adds considerably to its picturesque appearance. Standing by the handsome gateway

and the ornamental house of the superintendent, which forms a lodge at the entrance, hard by the old church in the village street, and near the picture gallery, the graceful spire of Lordship Lane church is seen as a pleasing boundary mark, a little distance beyond the long stretch of park. The Crystal Palace is within sight, a mile distant; Dulwich College is nearer at hand, and great houses, occupied by successful magnates in every branch of industry, are plentiful in the neighbourhood; and all around are handsome streets and "roads," innocent of shops, with hundreds, nay, thousands of big houses standing in their own well-kept grounds. Of all the suburbs of London this seems to me by far the pleasantest, by virtue of its position on the southern side of the Metropolis, its uneven contour, so superior to a dead level, its meadows well planted with timber, and its beautiful gardens and shrubberies, where song birds are allowed to build their nests, and never cease to show their gratitude by making delightful music. There is hardly a day in the year when the thrush does not sing, either from some sheltered nook near the door of the friend who feeds him in hard weather, or from the tree tops. To resume my special theme, the finishing touch was given to this pleasing spot by the Park, which provided for the public exactly what was wanted—wide lawns, old Oaks, cricket grounds, ample spaces for lawn tennis and football, a delightful smooth road for cyclists, and a lounge with seats for young couples who have negotiations to carry on.

I must now endeavour to describe the excellent gardening, for which this new park enjoys a fast-growing fame. As to the landscape gardening, not even St. James's Park was more skilfully laid out by J. C. Loudon than was this one under the supervision of Mr. Sexby. Flower borders, shrubberies and grass, water, and winding walks are all nicely intermixed, so as to secure the utmost variety that the space can afford, and by-and-by, when the freshly-planted clumps of shrubs and trees are further advanced in growth, the concealment of boundaries and the other arts of landscape gardening will greatly add to the apparent size of the enclosure. Rhododendrons were largely planted here last February, and although dreadful weather followed, some gorgeous masses of blossom were displayed even in the first season. A second brilliant display has been secured by a great variety of Poppies sown among the shrubs, and by masses of flowers, including many of those herbaceous plants which all who attended the Rose show at the Crystal Palace on July 4 must have very much admired—Pinks, Pyrethrums, especially *P. roseum*, a flower which has been wonderfully transformed by florists within the last few years; Gaillardias, and other perennials now very much in fashion. I should like to mention *Eryngium giganteum*, one of the Sea Hollies, growing here 6 feet and 8 feet high, and rejoicing in the deep strong soil; it is an emperor among plants, elegant in spite of its rigid aspect, and too noble to be passed without exciting admiration. Among other notable specimens in their season are the Peacock Anemone, *A. stellata fulgens*, with dazzling flowers; *Acanthus candelabrum* (?), with pink flowers, one of a stately group remarkable for beautiful foliage and numerous spikes of flowers; and many kinds of Campanula, including *C. latifolia macrantha*, a pyramidal bush 4 feet high, bearing large blue flowers, and well suited to back places in herbaceous borders. Mr. Melville is the presiding genius here, and he is backed by a good staff of intelligent men, who all share the general regret that the excellent superintendent is about to leave, having been promoted to the management of

Finsbury Park. Mr. Melville, a born gardener, as was his father before him, has enjoyed a wide experience in gardening. I found him, however, a most unassuming man, possessed of the characteristic modesty which belongs to merit. He is fond of assembling together several species of some of the more striking groups of plants, so that their contrasts and character may be displayed side by side.

There are several examples of rockwork, planted with alpinists in the Park, but the most extensive gardening of this kind is on either side by the carriage-road after passing through the Snakes' Lane entrance. The arrangement here was well conceived. The broad strip on each side of the road was laid out in the semi-wild style of gardening. In the background, under the fences on either side, might have been seen, two years ago, a bare rootery—if such a word may be used—consisting of snags and scraggs of roots, butts of trees, and many a contorted piece of timber, with rockwork in front. All these uneven surfaces are now covered with Ivies and other creepers such as gardeners employ to render ruins and rockwork ornamental—Honeysuckles, Clematis, climbing Roses, which delight in the soil, and blossom profusely; Virginia Creepers, Hops, Brambles, of the new and handsome species; and several other plants. Here and there, among the rocks, are Laburnums, Acacias, Pyruses, and Maples, trees or bushes, which are also sprinkled over the whole park in great variety, from the common and corky British Maple with small leaves, to some of the large-leaved foreign sorts. The home of the alpinists here is of course among the rocks. The Saxifrages are largely represented, and the common London Pride, which was at first freely used to cover an extensive space with economy, is now giving way to more valuable varieties. The alpinists are a ceaseless source of interest, and I therefore noted down a few names, familiar enough, no doubt, but still pleasing to the lovers of these plants, as are the names of friends whose virtues we like to hear of. *Saxifraga pyramidalis*, one of the most remarkable of the flowering type, has rosettes of leaves 6 inches in diameter, and from these spring pyramidal plumes of white flowers to a height of 18 inches to 24 inches, forming a beautiful object not to be forgotten. *S. Wallacei* is a fine large-flowered variety. *S. longifolia* is another tall one, having long silvery leaves; and contrasting with these are *S. cœsia* and *S. squarrosa*, which form lichen-like tufts, scarcely rising above the soil. I must not omit that gem of the alpine world, *S. oppositifolia*, producing sheets of showy rose-coloured flowers in spring; nor that fine, good, old-fashioned sort, *S. cordifolia*. There are others of the several sections, kidney-leaved or mossy, the latter covering their border, or rock, with wide cushions of lovely green, summer and winter. There are Sedums, Stonecrops, to which are allotted the driest and sunniest places, and *Sempervivum*, House-leeks, in several forms. A little like *Sempervivum arachnoideum*, Cobweb House-leek, is *Androsace sarmentosa*, from the Himalayas, which prefers that its downy foliage should be kept dry by resting on stones. Its larger, bright rose flowers, with white centre, are produced in umbels. It is propagated by runners, like the Strawberry, and Mr. Melville, like other growers, has found it liable to damp-off in winter, as described in a recent correspondence in the *Gardeners' Chronicle*. It does best here in the recesses and crevices of the rockwork, where it receives partial protection from the weather. *Epimedium* (Barren Wort) is a beautiful genus of dwarf-growing plants, well described

in Mr. Ware's excellent catalogue of hardy perennials, grown by him at Tottenham, as "forming neat clumps about a foot high, of long-stalked leathery leaves, and graceful panicles of lovely flowers—white, yellow, lilac, crimson, purple, and lavender." The foliage is tender and delicate in appearance, though tough; the leaves are heart-shaped, and green in colour, tinged with coppery-bronze. I must be content with merely naming such lovely but well-known things as Thrift, Heaths, *Iberis corifolia*, an evergreen Candytuft, Thymes, such as *T. coccinea* and *T. montana*; *Erodium*, several species; and scarlet, pink, white and yellow *Cistus*—true alpinists, much at home here in the rockery. *Geum montanum* is another capital rock or border perennial, with compact tufts of foliage, and showy golden-yellow flowers on stems a foot high or less. The *Drabas*, little spring flowering plants, with compact cushions of foliage covered with white and yellow flowers, are much admired here. So, of course, are the *Hepaticas*, common as air and water, but not the less excellent and ornamental on that account. Among the *Aubrietias*, which are usually blue or purple, the only pink one, *A. Leichtlinii*, attracts great attention here. The gardening world owes it, I believe, to the art which has conferred upon us so many novelties, the raiser having selected and perpetuated plants bearing flowers nearest to pink in their hue, till he succeeded in producing a pure pink strain. *A. Campbelli* is another improvement, famous for a vigorous constitution, and for large flowers of deep violet-blue colour. There are some fine varieties of *Funkias* putting up their broad Palm-like leaves, of sub-tropical aspect—though they are as hardy as common Plantains. *Stachys lanata* is here, that common white-leaved plant; and the *Mimulus*, another good old sort not yet surpassed for beauty, seems to revel in the damp soil. *Gaultheria procumbens*, with white flowers and red berries, is a cheerful little thing, easily detected in the crevices of the rocks.

The strips of border in the foreground of the rockeries, right and left of the entrance in Snakes' Lane, was bright with Daisies, the *Polyanthus*, *Crocus* and *Snowdrop* in spring, and are now fitted with the plants that follow in succession, such as Pansies, *Phlox Drummondii*, *Dianthus chinensis*, and the beautiful Spanish Iris, with specimens of a narcotic "weed" much cultivated in America, and known by the name of *Nicotiana tabacum*, a plant with fragrant flowers, and, as most people seem to think, with still more fragrant leaves. Last among the plants that must be named are the Campanulas, which are here in great force, in numerous varieties, from *C. macrantha*, one of the largest, to the small Hairbells growing in crevices like *C. pumila alba*, or *C. nitida alba*, a pure white Hairbell, about 13 inches high. The rest must be omitted. They were in great perfection at the Crystal Palace Rose show, as were *Delphiniums*, also well represented in Dulwich Park. I may add that the Pyrethrums, so much admired this summer, were all seedlings sown at the end of March last year. It should be mentioned, too, that houses for propagating and for wintering bedding plants, have just been erected. *H. E.*

NEW OR NOTEWORTHY PLANTS.

LILIUM LONGIFLORUM VAR. *CHLORASTER*,
Baker.

THE *Lilium longiflorum*, of which bulbs were brought by Dr. Henry along with *Lilium Henryi* from Western China, has now flowered at Kew for

the first time, and proves to be a well-marked variety. The stem is about 3 feet long, and very glaucous. The leaves are bright green, lanceolate, usually three-nerved, rarely five-nerved. The connivent funnel of the perianth is more open than in typical longiflorum, resembling that of *L. Brownii*, measuring about 4 inches in length by 2 inches in diameter at the throat before the segments begin to reflex, and down the back of each segment there runs a distinct green keel. The anthers are shorter than in typical longiflorum, linear-oblong, not more than a third to half an inch long, and the pollen (here again as in *Brownii*) is red-brown. *J. G. Baker, Herbarium, Kew.*

KNIPHOFIA NORTHLE, *Baker.*

This has just been flowered for the first time in this country, so far as I am aware, by Mr. W. E. Gumbleton, at his seat in county Cork, where he finds it to be perfectly hardy. It is nearly allied to *K. caulescens*, and was first introduced into notice by the late Miss North, from whose painting in the Cape ante-room in her gallery at Kew it has become well known, and who brought home a living plant and presented it to the Kew collection. I am informed by Mr. Tidmarsh, of the Botanic Garden at Grahamstown, that it was originally discovered in a wild state in that part of the colony by Mr. W. Dugmore. We, however, knew nothing about it in Europe till Miss North painted it, and introduced it. The following description is made mainly from the living plant, which Mr. Gumbleton has just kindly forwarded. It was originally named and described in Britten's *Journal of Botany*, 1889, p. 43.

Stem shortly produced, 2 to 3 inches in diameter. Leaves thirty to forty, in a dense rosette, lanceolate acuminate, glaucous, broadly channelled down the face, not acutely keeled on the back, 4 to 5 feet long, 5 to 6 inches broad low down, tapering gradually to a long point, the margin distinctly serrulate, the inner leaves of the rosette growing gradually narrower and shorter. Peduncle shorter than the leaves, an inch in diameter at the base. Raceme very dense, $\frac{1}{2}$ to 1 foot long, 3 inches in diameter; pedicels very short; bracts ovate, brown, membranous, $\frac{1}{4}$ inch long; upper flowers tinged with bright red; lower entirely yellow. Perianth cylindrical, an inch long; lobes small, ovate. Stamens and style finally half as long again as the perianth. *J. G. Baker, Herbarium, Kew.*

WADDON HOUSE, CROYDON.

PHILIP CROWLEY, Esq., the Treasurer of the Royal Horticultural Society, is well known to most plant lovers, and his priceless collection of butterflies and bird's eggs renders him equally well-known to entomologists and ornithologists. His pretty residence has on the one side, gardens, of which the main feature is an immense bed of subtropical plants, and on the other side, the house is furnished with a verandah and pillars, over which the summer climbers twine. Facing this side of the mansion is a pretty lawn-tennis ground, the corners brightened with Pelargoniums and the flower beds, and enclosed with a broad bank of herbaceous perennials in which Lilies, Campanulas, &c., make a fine show, and in which an occasional plant of the Edelweiss proves the situation not too warm or dry. Continuing the walk from the flower gardens, some rockeries planted with hardy Ferns are reached, in which, despite the rigours of the past winter, the plants are in fine health. Here, the many forms of *Lastrea*, *Polystichum* and *Athyrium* exhibit much beauty, and the large patches of *Onoclea sensibilis*, *Adiantum pedatum*, *Polypodium Dryopteris*, and *P. Phegopteris* bespeak great age. Here, too, were noted several specimens which may be deemed of more than average—indeed, of historical—interest; the one is a large tuft of *Cystopteris montana*, which was brought from southern Europe by Mrs. Crowley's father some forty-five years ago, and which has increased in bulk despite the many offsets which it has furnished from time to time. In these rockeries the

Adder's Tongue Fern and other reputedly difficult species luxuriate, and among them the tall sprays of *Campanula persicifolia alba* make a pleasing effect, and so also the graceful Foxgloves.

From the Fern Dell a noble walk runs beneath lofty Beeches, and in a sheltered angle the kitchen garden is placed, well cropped and tended by Mr. W. King. In the kitchen gardens, and in the newly-extended fruit gardens, there was a more than average crop of fruit. About 350 trees have been planted in recent years, and with very satisfactory results. The fashion of planting many sorts, fallen into by many persons, was avoided here, and judging by present appearances, Mr. Crowley would be entitled to give valuable advice to intending planters.

Everywhere in the Waddon gardens advantage is taken of sheltering corners, kitchen garden walks, and nooks, to sow quantities of showy annuals.

THE PLANT-HOUSES.

Mr. Walter King, who has for many years been gardener at Waddon, has enhanced his reputation by the excellence of his plants, which are to be found at most of the important exhibitions. The secret of success may with perfect fairness be told, for it is an open one, viz., the knowledge of the exact time when the feeding a plant, be it a specimen *Allamanda*, *Bougainvillea*, a *Caladium*, or *Anthurium*, or a Cherry, Plum, or Peach, may be begun; and what is of equal importance, a keen perception of the proper time to discontinue the feeding, and arrange for the ripening of the wood. These may at a glance seem but simple matters, but in reality they are those on which success in plant or fruit culture depends.

Starting from the mansion, the conservatory is the first structure, with its fine but not too crowded furnishing of Palms, Ferns, and flowering plants. Among these the many examples of *Spiraea palmata alba* were very effective, and the various species of *Gladiolus* showy. In the next house was an effective Fern rockery, with *Begonias* planted among the Maidenhair and other species of Ferns, and all looking very natural and very effective, in that the floor and the sides of the house consist of natural rock.

THE ORCHIDS.

These plants command fair attention, and many extraordinary specimens were observed, viz., a noble specimen of *Dendrobium moschatum*, which is trained over the roof of one of the houses, and which carried annually from eighty to a hundred spikes. The show house contained a brilliant display of *Cattleyas*, *Laelias*, *Odontoglossums*, two varieties of *Laelia purpurata*, one with pure white flower and violet lip, and the other with almost wholly crimson flowers being especially effective. Here, too, were *Odontoglossum citrosimum armeniacum*, a beautiful species with apricot-sepals and petals; also *O. c. album*, the pure white variety, and many of the ordinary form. *O. crispum* here is well represented by a score or so of plants of more than average merit, the *O. c. lilacinum* being very near to the *O. c. "Purple Emperor,"* of Burford Lodge. In this show-house were observed many very good plants of *Cattleya Mossie*, *C. Mendeli*, some grand *Miltonia vexillaria*, the noble old *Maxillaria tenuifolia*; a *Sophranitis grandiflora* which had borne over forty flowers; and some good masses of *Epidendrum vitellinum*, *Lycaste aromatica*, and showy *Masdevallias*.

In another house set apart for plants were noted grand specimen *Clerodendrons*, *Allamandas*, *Ixoras*, *Anthuriums*, *Alocasias*, and many others; the specimens of *Davallia fijiensis*, *D. f. plumosa*, *D. Moorei*, *D. hirta cristata*, Killarney Fern (*Trichomanes radicans*), and others, more than 5 feet across, were very fine. In some of the houses *Bougainvilleas*, *Stephanotis*, and the old but rare *Hoya imperialis*, were rich with bloom. In one house the roof was entirely covered with Citron, with a profusion of large fruits and flowers. In another, *Aristolochia elegans* had hundreds of flowers and flower buds, and the *Dieffenbachias*, *Crotons*, and *Dracenas* are of

marvellous size and colour. In the greenhouses were noble specimens of *Dracophyllum gracile*, *Azaleas*, *Boronias*, and the specimen of *Lomatia propinqua*, which recently produced their flowers, and caused thereby so much interest. The fruit-houses have fine crops of Grapes, Plums, Peaches, &c.

MANURES FOR THE GARDEN.

IN continuation of this subject, we may mention that it was stated by a Grape-grower, that he applied a heavy dressing of dried blood, or other animal manure, to some Isabella Grapes, and they grew as large as Black Hamburgs, but none of them ripened. The reason for this is obvious. The organic nitrogen of the manure was not converted into available plant-food till the soil was warm and the season advanced, and this conversion was continued all through the summer and autumn. It was precisely as though nitrate of soda had been sown every day on the vineyard, and thus kept the Vines growing with excessive vigour without any chance to mature either the wood or the fruit.

What Vines want is a dressing of superphosphate or bone-meal in the autumn or early spring, dug or cultivated into the soil, so as to get the manure down to the roots, and then as early in the spring as the soil will admit, a dressing of from 200 to 300 lb. of nitrate of soda to each acre of ground, or we believe that Wood & Sons' *Le Fruitier*, applied at the rate of 1 ounce to each square yard of ground, would be equally efficacious.

In the form of these concentrated manures, nitrogen is immediately available, and will be promptly taken up by the roots, and furnish a sap rich in nitrogenous matters and phosphoric acid, and thus force a healthy, vigorous growth early in the season; and, in a few weeks, there will be no nitrate left in the soil to produce an excessive growth of wood, or to retard the ripening of the Grapes.

Nurserymen, as a rule, do not believe in commercial fertilisers, but they have great faith in stable-manure. This is not surprising. Ordinary fertilisers are often disappointing, and not what they want. They do not contain enough nitrogen. Professor Snyder, of Cornell University, has analysed a two-year-old Apple tree. Assuming that a block of Apple trees in the nursery would produce a growth each year of five tons of dry wood and leaves, they remove from the soil, according to the investigations of Professor Snyder, 12 lb. of phosphoric acid, 44 lb. of potash, and 89 lb. of nitrogen. The trees are thus shown to contain over seven times as much nitrogen as they do of phosphoric acid.

There is an old saying, "Letting land lie in grass impoverishes the father but enriches the son." When an old meadow or pasture is broken up, the old grass, roots and sod all decompose, and furnish a considerable quantity of nitrates and other plant food, and double or treble the amount of produce from succeeding crops is obtained than if it had remained in grass; but, of course, this is obtained at the expense of previous accumulations of organic matter in the sod and soil. The son thus gets the benefit of his father's saving.

Nurserymen generally understand this matter, and when they rent land they prefer that which has been in grass for some years. Nurserymen cultivate their land very thoroughly between rows, and this constant stirring of the soil facilitates the decomposition of the sod and other nitrogenous organic matter. But after it has been cultivated for some years the accumulated fertility is gone, and recourse must be had to manure from external sources.

Mr. Harris does not say that a nurseryman, after he has grown a crop of Apple trees on pasture-land for four or five years can, by the use of plenty of nitrates and other plant food, continue to grow luxuriant blocks of nursery trees, but he does not see why it should not be done. All the indications warrant us in assuming that the mineral elements of plant food, such as phosphoric acid and potash,

accumulate in the soil while it is occupied by nursery trees, but there is unquestionably a considerable loss of nitrogen. Messrs. Lawes & Gilbert's summer fallow experiments at Rothamsted clearly show this to be the case. The loss has been so great that it can be detected by analysis as well as by the decreasing crops.

Improved horticulture will not enable nurserymen to grow cheaper products—but better. The judicious use of fertilisers will not enable growers to sell Apples at one shilling a bushel, but they will, combined with careful selection of varieties and good management, enable them to raise Apples better worth four shillings per bushel, than the fruit from a starved and neglected orchard is worth one shilling.

Great advances have been made in the introduction of improved varieties of fruits and vegetables, and this necessitates cleaner and richer land. Thirty or forty years ago, it was thought that Tomatos must have poor soil or they would run all to bines. Now our improved varieties will stand a liberal dressing of superphosphate and nitrate of soda, and it is not easy to determine who exhibits the greatest folly, the man who fertilises his land and then plants poor varieties, or the man who plants the best and most improved sorts and then neglects to furnish them with a liberal supply of appropriate and available plant food.

Professor Bailey of Cornell University, has shown, not only that an improved variety of Tomato will stand heavy manuring, but that it doubled the crop of fruit, and gave Tomatos that were smoother. He put 6½ tons of good stable manure per acre, containing probably not less than 600 lb. of nitrogen. On an adjoining plot, on poorer land, he applied 200 lb. of nitrate of soda alone per acre, containing 32 lb. of nitrogen, and it increased the crop of fruit from 6½ lb. per Vine on the unmanured plot to over 9 lb. per Vine. On the plot receiving this small dressing of nitrogen, the Vines had very dark foliage, which shows that they would have been all the better for a dressing of superphosphate with the nitrate of soda.

Soils vary in respect to the plant-food they supply in available forms. Phosphoric acid and nitrogen are most often deficient; next comes potash; then lime and sulphuric acid, and rarely magnesia.

But the infertility of soils is due to other causes, perhaps nearly as often as to the lack of plant-food. Soils often do not possess the proper texture—they are too compact, or too loose; or they are too shallow; or they lack absorptive powers—they cannot retain the plant-food until plants use it, but suffer it to be washed away by drainage-water; or the moisture supply is bad—they are too wet or too dry. These defects are as fatal as lack of plant-food. Many soils need amendments first and then manure. *J. J. Willis, Harpenden.*

TREES AND SHRUBS.

DIMENSIONS OF CONIFERS, &c, AT HATTON PARK.

This was a famous house at Feltham, Middlesex, in days gone by, when it was the residence of the late Chief Baron Pollock, a great lover of trees. It has numerous fine Conifers dotted about its grounds. The estate is still in the possession of the family. The genera *Abies* and *Picea* are well represented; an example of *A. grandis* has attained a height of 52 feet, with a circumference of bole of 5½ feet at a height of 2 feet from the ground; *A. Pinsapo* and *A. nobilis* each 58 feet, and a circumference of 5 feet. There are two fine specimens of Cedar of Lebanon on the south-east side of the mansion, each measuring 48 feet in height; one with a girth of 10 feet 2 inches, and the other 9½ feet at 2 feet from the ground.

Araucaria imbricata, of very symmetrical growth and in fine health, measures 38 feet in height and 4½ feet in girth of stem. *Cupressus Lawsoniana*, a really grand example, is 29 feet high; and *Cryptomeria japonica*, 45 feet. *Taxus adpressa* has a

spread of branches of 28 feet, and a height of 4 feet; *T. a. aurea*, spread of branches, 36 feet; height, 8 feet. *Thuia gigantea* is 30 feet high, a noble well-shaped tree; *Thuopsis dolabrata variegata*, 10 feet; *Juniperus virginiana*, 16 feet; and *Pinus maritima*, 45 feet high. *Biota aurea*, 18 feet in circumference of the branches.

The place does not lay claim to attractions under glass, but the well-kept old-fashioned conservatory contained a wonderfully well-bloomed plant of *Rhododendron Countess of Iladdington*; a fine and vigorous example of *Cereus* sp. covers one of the greenhouse walls; this must be an object of great beauty when in bloom. Black Hamburg Grape vines are healthy and vigorous, and they will, doubtless, give a good account of themselves in the fruiting season. Mr. W. Brittain is the gardener in charge. *B.*

CYTISUS SCOPARIUS ANDREANUS.

This seedling from the common yellow Broom, is likely to prove useful as a forced plant—that is, if it be afforded greenhouse treatment during the winter, flowering from March onwards. It is, moreover, a pretty border or shrubby plant. It is propagated with great ease by grafting on stocks of the common Broom, and the best method to adopt is wedge-grafting, the union obtained being more satisfactory than side-grafting affords, and which is best when performed in the spring, the grafted plants being plunged in cocoa-nut fibre or tan, in cases where the temperature ranges from 50° to 60°, and in three weeks' or a month's time they can be taken out of the cases and stood on the side stages of the house, and in a few weeks time they will be fit for planting in the open air.

Plants that were treated as described above (with the exception of not being planted out) were kept growing in pots all last summer fully exposed to the sun, liberally supplied with water, and placed in cold frames in the autumn, and about Christmas time were put in an ordinary greenhouse, and on March 2 they commenced to open their flowers. It will be very interesting to know whether it will reproduce itself from seeds, or run back to the original form. Last year it produced seeds very freely, which were sown in light sandy soil, and the pots placed in a temperature of 55°; some germinated in three weeks' time, while others took three months to come up. These are now being grown on for the purpose of proving whether they will come true or not, but I am inclined to think that this mode of propagation will not be a success. *H.*

THE IRISH YEW.

The original Irish Yew, which was first discovered a century or so ago at Florence Court, near Fermagh, was a female plant. Its history is given in the *Gardeners' Chronicle* for 1873, p. 1336. Being propagated mostly by cuttings, it has preserved its character, though Messrs. Veitch say that seedlings from it nearly always revert to the common type, which may be the result of its flowers being fertilised by the pollen of the common Yew.

To Mr. Tillet, of Spowston, near Norwich, we were lately indebted for the receipt of sprays of the Irish Yew, bearing unequivocal male flowers. We trust Mr. Tillet may succeed in fertilising the berry-bearing plants of the Irish Yew with the pollen. It is very possible that under such circumstances the seedlings would "come true." It must be borne in mind that it is a frequent occurrence for dioecious trees to become monoecious. The Yew occasionally does so. We would also point out that the upright form and the arrangement of the leaves on all sides of the branches—peculiarities which characterise the "fastigate" form—are really the juvenile characters, which, contrary to custom, have become persistent. The adult arrangement, from some cause or another not known, has not been assumed, so that the plant is, so to speak, an overgrown baby. Examination of seedling plants, and of strong-growing leading shoots, will illustrate the truth of these statements. A dwarf form, known as *Taxus sempiterniformis*, has its leaves similarly arranged. *M. T. M.*

COLONIAL NOTES.

"PREUM-BESJES."

(See *Gardeners' Chronicle*, p. 408, vol. ix.)

Owing to the Cape Colony being a biggish place, with very varied and very localised vegetative forms, one name does duty for several different trees, shrubs, or berries, that have some sort of rough resemblance, but grow in far distant divisions; so that it is not always easy to give an accurate name for a vernacular one. But since Mrs. Church, in her chronicles of an ostrich farm, is describing a very well-known Karoo property, one can get at the solution of your correspondent's difficulty pretty certainly. "Preum-besjes," as the word ought to be written, *i.e.*, Plum-berries, are the fruit of *Pappea capensis*, E. & Z. (*Sapindus Pappea*, *Lond. in Fl. Cap. i.*, 24.) They are about the size of the top of one's little finger, at first capsular, the thin papery shell cracking evenly, and exposing the little cherry-red fruit, which is not very much unlike a red Currant in flavour. The tree is never large, seldom reaching 20 feet, and grows mostly on the rands or ridges of low trap hills that intersect the Karoo. The seed is brown, smooth, and very oily. The Boers, who have a medicine of their own when the huisapothek, or drug-box fails, boil the crushed seeds, and collect the oil that rises to the surface of the water as a substitute for castor-oil, if little Coos, or Saonie, has eaten too many green mealies, and begins to complain. It is mildly effective, and from this use the seeds get the name of "Olie-pitten." Elsewhere the children call the fruit of *Colpoon compressum*, Brg., preum-besjes. This low bush, the *Osyris compressa*, DC., bears a pyriform red drupe, ultimately becoming deep purple. It is just eatable, a sort of African Unedo—at least, I never eat two at a time. The whole shrub, stems, twigs, and leaves, is cut up or pulled up in large quantities for the use of the tanners, who value it greatly as a substitute for Sumach. I suppose they would use the bark only, were the stems large enough for that process, and this they signify by calling the plant by a vagary of naming, "Pruim-bast, *i.e.*, Plum-bark. Then there is "Kafir-Preume," the red acid Plum of *Harphephyllum caffrum*, a most beautiful forest tree of the eastern districts. None but school boys, whose *dura ilia* can stand anything that bears the name of fruit, could eat it. The skin is tough, the pulp scanty, and the stone disproportionately large. But your correspondent must not hope to naturalise the *Pappea*. It would take a weary long while to grow to bearing age, and a pint of Red Currants would be worth the whole crop of a tree 10 feet high. *P. MacOwan.*

SINGAPORE.

Coffee Leaf Fungus.—The *Agricultural Bulletin of the Malay Peninsula*, the first number of which is before us, contains a condensed abstract of Dr. Burck's articles on the treatment of the Coffee leaf disease (*Hemileia*) in Java. Dr. Burck finds that the spores germinate in darkness only, full light being very prejudicial to them. Water and air, and more or less complete darkness, are the requisites for germination [facts which suggest the possible use of the electric light in the future. *En.*]. For the cure of the disease, Dr. Burck employs sulphuric acid (vitriol). A drop of this caustic fluid is placed on the diseased spots on the leaf by means of a bamboo needle, and causes the destruction of the fungus. Another plan is to cut out with scissors the diseased patches, which are then destroyed. It would seem that neither of these practises, however good in theory, could possibly be adopted on a large scale, but we are told of two planters who have tried them on 220,000 and on 170,000 trees respectively, and who were well pleased with the results. Various preventive remedies were also tried, but tobacco water, used in the form of spray to the under-surface of the leaves, is most efficacious, killing the fungus without injuring the Coffee leaf. Hedges are recommended to break up the plantations, and check the progress of the spores.

ABURI, GOLD COAST.

At the botanical station here, preparation for the culture of Liberian Coffee, Cacao, Egyptian Cotton, and other economic products have made satisfactory progress under the direction of Mr. Crowther. Excessive heat with little range and a saturated atmosphere for a large part of the year, are not very wholesome conditions for Europeans, though many plants thrive under such circumstances. Dr. Easton contributes to the Report before us an interesting note on the use of *Newbouldia laevis*, a Bignoniaceous plant, in the treatment of dysentery.

"THE AGRICULTURAL GAZETTE OF NEW SOUTH WALES."

This is a Government publication, issued for the purpose of disseminating cultural information to farmers and fruit growers. Thus, in the number before us, we find notes on various economic plants, illustrated articles on the grasses of New South Wales, by Mr. Turner; notes on the diseases of plants and their treatment, and so large a number of useful hints that one envies the colonial farmers.

VEGETABLES.

At Glenhurst, Esher, the gardens of which are under Mr. C. J. Waite's charge, many of the best varieties of vegetables are grown as well as anywhere in the country.



FIG. 10.—MALFORMED FLOWER OF DIGITALIS.

The gardener is a successful exhibitor at metropolitan and other shows, but he does not grow anything especially for exhibition, all being treated alike. We may say that he is a firm believer in deep cultivation of the land, perfect cleanliness amongst his crops, and in the abundant use of liquid manure, of which he never lets a drop run to waste.

It was interesting to note the earliness of the Cauliflowers sown on January 27, and planted out March 22, in an open spot away from all protection. These were almost cleared off, whilst the autumn-sown ones were still being cut, and not very good either, the winter having punished them to a certain extent, and the heads were small. The first head from the winter-sown lot was cut on June 1. Another Cauliflower of considerable earliness is Sutton's First Crop, a variety with no visible stem, few leaves, and broad flattish head. Owing to want of leaves to shelter the latter from the sun, it is not good in colour, but the variety is a decided acquisition. It should be sown in January for early cutting.

Finer Lettuces could be found nowhere than here. The varieties principally grown are Webb's Monstrous White Cos, and Sutton's All Heart. These Lettuces had been planted at 1 foot apart in the lines, which stood in the wide spaces between rows of Peas and Runner Beans; and, when large enough for use, each alternate plant was cut, and the remainder left to grow to a very large size, which of

course they did, assisted by manurial aids of one kind and another.

The transplanting of Onions has, here, the preference over sowing in the open, and very fine they were, standing at about 10 inches apart, in long lines. For early fruiting, Glenhurst Favourite Tomato is grown, and a very fine lot of plants were found in fruit in a span-house. It is a variety that sets its blossoms in the bad weather better than others, and is not injured in the least if it stand under partial shade. The red-coloured fruit is globular, and not ribbed, and has been grown up to 18 oz. in weight. Mr. Waite fruits some of his Tomatos in boxes 15 inches by 7 inches by 24 inches, two or three plants in a box. These are stood out-of-doors all the summer after setting a crop of fruits, and may be taken to any dry warm glass-houses in September, if the weather be then not favourable to growth. Peaches, Nectarines, Vines, &c., are also well-grown and fruited.

CAMPANULATE FOXGLOVES.

EVERY season we receive numerous specimens similar to that illustrated at fig. 10, and this year the examples sent to us have been more numerous than ever, whence we infer that the condition is specially frequent. The explanation is, that several flowers have, as it were, run into one, producing an erect, apparently simple but really composite, bloom at the top of the stem. In the

and Mr. Cuming has lately sent it from Manilla to Messrs. Loddiges, with whom it flowered last July" (*Bot. Reg.*, 1838, t. 11). The Philippine plant thus introduced to cultivation was afterwards figured in the *Botanical Magazine*, t. 4237, and is still cultivated under this name. It is a matter of great interest to know that after the lapse of nearly seventy years a genuine Mauritian specimen has been introduced, and is now flowering in the Orchid-house at Kew. It was sent by C. W. Bewsher, Esq., of the Oriental Bank, Mauritius, together with other native Orchids collected by him. I am inclined to think Lindley has confused two or three closely-allied species, for the one now flowering at Kew seems sufficiently distinct from that so long known in gardens under the name. Its flowers are light yellow, without spots. A second specimen from the same source is said to have red flowers. There are no dried specimens at Kew of the Mascarene plant; but the plant now flowering agrees well with the figure given by Thouars. Its appearance in cultivation is very interesting. *R. A. Rolfe.*

LYCASTE SKINNERI, PITT'S VARIETY.

This very curious Lycaste comes from Horace Pitt, Esq., of Stamford Hill, and by some persons it might be regarded as being a distinct species; its sepals are narrower and longer than those of the ordinary form, and of a peculiar greenish-white tint, merging into buff. The petals are also narrower, and not so closely folded over the column as in the type; they are white, tinged with rose at the base. The lip is also narrow, whitish with rose spots. It is a very peculiar and distinct form. *J. O'B.*

CYCNOCHES CHLOROCHILON, Klotzsch, ♂ AND ♀.

There are probably few orchidists to whom the quaint and fragrant flowers of *Cycnoches chlorochilon* are not familiar, as the species has been in cultivation for a long period, and is now pretty common. The appearance of the second sex, however, has either not hitherto been recorded, or I have failed to find it, and therefore I have great pleasure in calling attention to the following incident, which fills a blank in our knowledge of this singularly dimorphic genus. M. Houzeau de Lehaie, Member of the Chamber of Representatives, Hlyon, near Mons, Belgium, has sent to Kew a flower of each sex, which appeared in his collection on distinct plants, received from Caracas, the native home of this species. The male is the form so long known in gardens, with slender column and pollinia normally developed; while the female, which had been expanded for six weeks when forwarded, and still in good condition, presents the following characters:—The flower is distinctly larger and more fleshy than the male, and with broader sepals and petals; the lip a little larger, with broader much more obtuse crest; the ovary more than twice as thick, and more strongly grooved, and the column scarcely half as long, at least four times as thick; no pollinia, but a well-developed stigma, with a pair of large fleshy incurved wings on either side. The colour is identical in the two sexes. To those who are familiar with the great diversity between the sexes in *C. ventricosum* (♂ described as *C. Egertonianum*), *C. Warszewiczii*, *C. pentadactylon*, or *C. Rossianum*, the close resemblance in the species now under notice will appear very remarkable, if not inexplicable. To me it is specially interesting, because it clears up what I have long been unable to understand. *C. ventricosum* is well known to be the female sex of a species, but the *C. chlorochilon* so long known in gardens, and which bears so close a resemblance to it, had the pollen uloué perfect, and appeared to be a male. Had it appeared to be a female, one would have looked out for a male somewhat like *C. Egertonianum*, but not being so I was completely baffled. Could it be hermaphrodite? Well, I tried to fertilise it, taking the pollen from another flower, but all in vain. And yet all goes on calmly in Nature—and now we have the key of the situation in the present example. It is clear that we have in *Cycnoches* two very dis-

very young condition the little tubercles that are to form the flowers are close together. Some arrest of growth takes place, the flowers that should be separate, not only remain in approximation but actually unite. Disorder has begun, and when growth is renewed — as it soon is — the disorder becomes intensified in various ways. The mystery at present is, as to what is the initial cause of the disturbance.

ORCHID NOTES AND GLEANINGS.

CIRRHOPETALUM THOUARSII, Lindl.

This elegant little species, the type of the genus *Cirrhopetalum*, was first made known to science in 1822, when it was figured by Thouars (*Orch. Isles Afr.*, t. 98) as *Bulbophyllum longidorum*, with the statement that it was a native of Mauritius and Madagascar. Upon this figure Lindley based his genus *Cirrhopetalum*, calling the species *C. Thouarsii* (*Bot. Reg.*, 1824, sub t. 832). Unlike most others, this species soon got the character of being very widely diffused. In 1838, Lindley observed:—"This very curious plant is one of the most extensively diffused of all epiphytal Orchidaceae. I have specimens gathered in the Society Islands by Mr. Matthews; Reinwardt found it in Java; Thouars, in the Isles of France and Madagascar;

tinct groups, one in which the two sexes are very dissimilar in the perianth, and especially in the lip, the other in which these differences are comparatively slight. Of the former we have *C. ventricosum*, *C. Warszewiczii*, *C. pentadactylon*, *C. Rossianum* (of which both sexes are known), *C. aureum*, *C. maculatum*, and a few imperfectly known ones (of which the males only have hitherto appeared). Of the latter group we have *C. chlorochilon* and *C. Loddigesii* (of which both sexes have appeared), *C. Haagei* and *C. versicolor* (of which the females have yet to be discovered). Our knowledge of the genus is still very imperfect, but the materials are gradually accumulating, thanks to those who have kindly sent materials: of whom Messrs. Gotto, of Hampstead; Ross, of Florence; Rand, of Para, Brazil; and Houzeau, of Belgium, must be mentioned, because each have forwarded the two sexes of a species. Others have assisted, but the lucky moment has not yet arrived when they have been able to dispatch a box containing both sexes. Several of the species mention above are, I fear, not in cultivation at present, but we may hope they will reappear in time.

Respecting *C. Loddigesii*, Lindley's very interesting note will bear repeating. "In August, 1836," he remarks (*Bot. Reg.*, sub t. 1951*), "Mr. Wilmer, of Oldfield, near Birmingham, sent me a specimen of a *Cynochos*, which had broad petals, a short column, hooded and dilated at the apex, and a broad rounded lip, gibbous at the base, and with its stalk much shorter than the column. It was, however, destitute of scent, while *C. Loddigesii* has, as is well known, a delicious odour of vanilla. I had no doubt of its being a distinct species, and called it *C. cucullata*. But in the autumn of 1836, in the garden of the Horticultural Society, a plant of *Cynochos* produced from opposite sides of the same stem two racemes, those of one raceme were the well-known fragrant flowers of *C. Loddigesii*, and of the other the scentless flowers of the new *C. cucullata*." It may be added that *C. cucullata* does not appear to have been described; probably the second example appeared in time for Lindley to suppress it. It is a parallel case to the one now recorded. The flowers are a little more dissimilar than in *C. chlorochilon*, but, like it, the shape of the lip is very similar in each sex, not totally different as in the other group. *R. A. Rolfe, Herbarium, Kew.*

THE SEED TRADE.

KEEPING ONIONS.—When the Onions were harvested on the seed trial grounds of Messrs. Hurst & Son, at Chelmsford, last autumn, a number of bulbs of each variety were laid out upon shelves in a barn to test their keeping qualities. At the middle of May the best keeper was found to be the Red Wethersfield, an American variety of the Blood Red, and larger in size than the ordinary stock of the latter, and quite of the shape of Danver's Yellow. Scarcely one of these had started into growth; the bulbs were still sound and plump. Next in point of keeping quality came the Globe types. James' Long Keeping, an old and popular variety, and Bedfordshire Champion, together with the Giant Zittau, an Onion of the Nuneham Park type, with a shape midway between the globe and the flat, and, being of a pale salmon-brown colour, may be said to form a connecting link between the yellow-skinned and the pale red-skinned Onions. It will be remembered that a trial was made of this Onion a few years ago by Mr. Barron at Chiswick, and strongly recommended by him as a keeper.

As there is something akin to a prejudice against the Blood Red Onions in the London markets, owing both to colour and to the fact that they are supposed to possess a particularly strong flavour, it may be remarked that both conceptions are not altogether true in fact. The red colour of the Blood Red Onion is largely superficial, and if a bulb be severed in two it will be found that one or two of the outer coatings of flesh are highly coloured, while it pales considerably towards the centre. The flavour, too, is mild—much milder than is generally

supposed, and it is found in the case of the Blood Red Italian Tripoli Onion, which is at times brilliant in colour, that it is as mild as the White Italian Tripoli. But it is an opinion held by many that the strongest flavoured Onions are the best keepers. *R. D.*

PLANT NOTES.

LAGERSTROEMIA REGINÆ, *Roxb.*

In colour the flowers of this Asiatic tree are similar to the bracts of *Bougainvillea glabra*. During May many dozens of these trees are to be seen flowering in various parts of Port of Spain, the capital of the colony. One of the two growing in the Botanic Garden is especially deserving of notice, both for its large size and symmetrical outline; and it is made the more conspicuous, as it occupies a very prominent position on a lawn facing the east side of the Palace, the residence of the Queen's representative here, the Governor of the island. At the time of flowering, the trees become covered with panicles of light purple flowers. For planting up to form avenues, and such-like purposes, in the tropics, there is no tree more suitable than this; in habit and density of appearance it very much resembles the Horse Chestnut (*Æsculus Hippocastanum*). Being deciduous, there are times when it becomes completely bare, but the contrary is the case after the large leathery leaves are developed. The centre of the flower is yellow, due to the presence of numerous yellow anthers poised on the tips of slender filaments. The tree appears to seldom or never mature good seeds here. During the past three years, we have been unable to prove it fertile, though we have made numerous sowings of fresh seeds. *W. E. Broadway, Trinidad.*

NORANTEA GUIANENSIS, *Aubl.*

The habit of this plant, as growing in the flower-garden, is that of a shrubby, pendulous character, where it is exposed to the sun throughout the day. That it is quite at home in this position, is proved by its strong growth and constant flowering. From a horticultural point of view, the small dull violet-coloured flowers are not worth noticing, but the saccate-scarlet bracts growing singly from the base of each flower constitute the chief beauty of this plant. These grow at right-angles to the erect-growing flowers, and in shape may be compared to a powder-flask, the opening situated at the narrowed base. The flowers stand three or four deep on the upper side, and the bracts also three and four deep, but on either side of the raceme. The numerous bracts and flowers are crowded together over a length of 1 or 2 feet. The species is a native of Trinidad and the mainland of South America, where it is quite a common plant in the woodland districts, climbing to the tops of trees 50 to 60 feet in height. At a superficial glance, the red-hot-poker *Kniphofia aloides* of English gardens suggests itself. *W. E. Broadway, Trinidad.*

RUBUS DELICIOSUS.

With the exception of the Raspberry, which, on account of its fruits, is to be found in almost every garden, comparatively few members of this genus find a place in gardens, notwithstanding that several are really distinctly ornamental plants—such as the rampant-growing *R. biflorus*, with its white-washed-like stems; *R. chamamorus*, the cloud-berry, only growing a few inches high, with large white flowers, which are followed by reddish-orange fruits, of large size, when compared with the plant. Even some double-flowered forms of *R. fruticosus*, the common Bramble, are not without merit when planted in appropriate positions. In the species we are noting, *R. deliciosus*, we have an ornamental deciduous shrubby plant, producing annually, in May, a profusion of its large white flowers, from the ripened wood of the previous year, just after the manner of the ordinary Raspberry. It succeeds best if planted towards the front of a mass of shrubs—

or better still, if it can get a position in front of a wall. It throws up suckers, by which it may be increased, as well as by cuttings, both green and ripened. *F. R.*

THE HARDINESS OF JAPANESE BAMBOOS.

THE Bamboos, the noblest of all the Grasses, have not only the merit of utility, but the growth of many varieties is characterized by such grace and distinction that they are among the handsomest ornaments of gardens and plantations. Lately much attention has been given to some of the Japanese varieties, among which may be found widely distinct habits, ranging in height from 3 to 40 feet, and with foliage varying both in breadth and colour. In a small state many of these varieties are useful, grown in jars for in-door decoration—a use to which they are much put by the Japanese. Florists will find these useful additions to their stock of decorative plants, as they are not only light and graceful in effect, but they will help to break the monotony of the Palms. But their beauty is better shown when grown in large masses in the open air; where rightly placed, they have capabilities of striking effects in the landscape. *Bambusa Metake* has been long known in gardens, and is of undoubted hardiness; but there are numerous Japanese varieties which are now obtainable, and many of them will be of great value if they prove entirely hardy. Most of these are said to come from the warmer parts of Japan, but I have been much encouraged, in testing a small selection of varieties last winter, to believe that many of them are hardy in this latitude, and require scarcely any protection. The varieties tested were planted early last spring, and, while apparently well established, they made no great vertical growth. They were in rather stiff loam, where no stagnant water could remain at the roots. They remained during the winter without any protection to the stems, and with no mulch over the roots. Six of the seven varieties exposed passed the ordeal safely, and are now making vigorous growth. There was, however, an apparent difference in their resistance to severe weather, but this may have been due to less-matured growths. The past winter was not extremely cold, the thermometer only once dropping to zero, but was a fairly average one as to temperature and moisture. They having lived through this without the slightest protection, there seems no reason to think that they will not pass safely through an exceptionally severe winter if the roots are well protected by mulching. It might also be well to provide wind-breaks, though the foliage of most of the varieties could not probably be preserved during an ordinary winter under any protection in this climate. Such varieties as *B. Ragamowski* may be an exception in this regard, since they have hard, firm leaves which would be retained if protected from scorching. *B. Simoni* also has persistent foliage. In detail, the varieties tested are given in the order of apparent hardiness.

B. Simoni, leaves quite persistent, and plant untouched. *B. viridi-glaucescens* and *B. aurea* lost their leaves, but the stems were untouched. *B. Ragamowski* had its leaves scorched. *B. (Arundinaria) quilloi* lost its leaves, and its stems were slightly touched. *B. (Phyllostachys) nigra* (Koro-chiko of Japan), top killed, but now pushing from the roots. This black-stemmed variety is said to attain a height of 30 feet, which would indicate more vigour than it has shown with me.

B. angulata (variety with knotty joints) was entirely broken up, root and branch, by the frost. *B. Castelloni* (Kimmeichiku of the Japanese) was grown in the house, but is apparently as vigorous as the hardiest ones. Bamboos do not often show their distinct characteristics before the second year, and should be planted in permanent quarters. They form thickets by pushing out horizontal short-jointed stems in every direction. These emit roots, and break at every joint, so that a well-established plant soon becomes the centre of a large clump.

Of course, as these plants grow tall, conditions may arise which would prevent their being hardy in this latitude. For instance, an exceptional winter might cut the top growth severely if not matured, but the root-action is so strong that there seems little doubt that the damage would be confined to the tops even in the worst seasons. *F. N. Gerard, in Garden and Forest.*

FLORISTS' FLOWERS.

CARNATION DISEASE.

We have received several specimens this week of Carnations completely dying off from below upwards.

and attention bestowed upon them, by the pleasure to be derived from a daily survey of a rich harvest of imposing blossoms, which not only please the eye by their massive size and delicate colours, but have also that necessary addition which flowers require to make them perfect, viz., a delightful perfume. It is not often that a flower which becomes the rage of the season, and lays such hold upon the popular fancy, has the drawback of being so difficult to manage successfully, as do the various varieties of Malmaison Carnations; this fact alone seems likely to prevent the possibility of their becoming too common, for some time at least, till their cultural requirements are more generally understood. I trust, therefore,

atrive to obtain, but unfortunately do not always succeed in doing. The two-year-old plants carry from six to eight flower-stems, surmounted by one large bloom with four or five smaller side-blossoms. Standing on an elevated position near the large house in which these plants stand, a fine view is obtained of the huge pink flowers and opening buds, which present to the enthusiast a sight to be envied as well as admired.

As soon as the flowering period is over, the large plants are placed in the open air in the soil, which is naturally light and in good working order; here the plants are layered in the usual way, by first "wringing" the young shoots, and pegging them to the ground, taking care to place a little leaf-soil and sand around the layers to enable them to root quickly. This operation is performed at various times, from the end of July to the end of August, as the plants go out of flower. Some of the young plants are potted into 8-inch pots, and prove the most profitable the second year. When well rooted, which is generally about the beginning of October, the strongest layers are potted into their blooming pots, which varies from 5 to 6 inches in diameter, the weaker plants being placed in large 60's, and repotted in the spring. As the plants are potted up from the open air they are placed in their winter quarters, in light span-roofed houses, where they remain till the flowering period is over.

At all stages of their growth, Mr. Kitley considers careful watering has much to do with success, and he allows his plants to get much drier at the roots than many people would think beneficial, but that the practice suits the plants is clearly demonstrated by their robust health and their splendid blooms, a cultural achievement of which any cultivator may well be proud. Should anyone interested in the culture of these beautiful flowers happen to visit the neighbourhood of Warwick, during the next few weeks, I have no doubt Mr. Kitley will willingly show them his treasures, with his usual courtesy, and, having once seen, I am certain they will retain a vivid impression of so fine a show, an impression that will linger in the memory long after the flowers have faded. *H. Dunkin.*

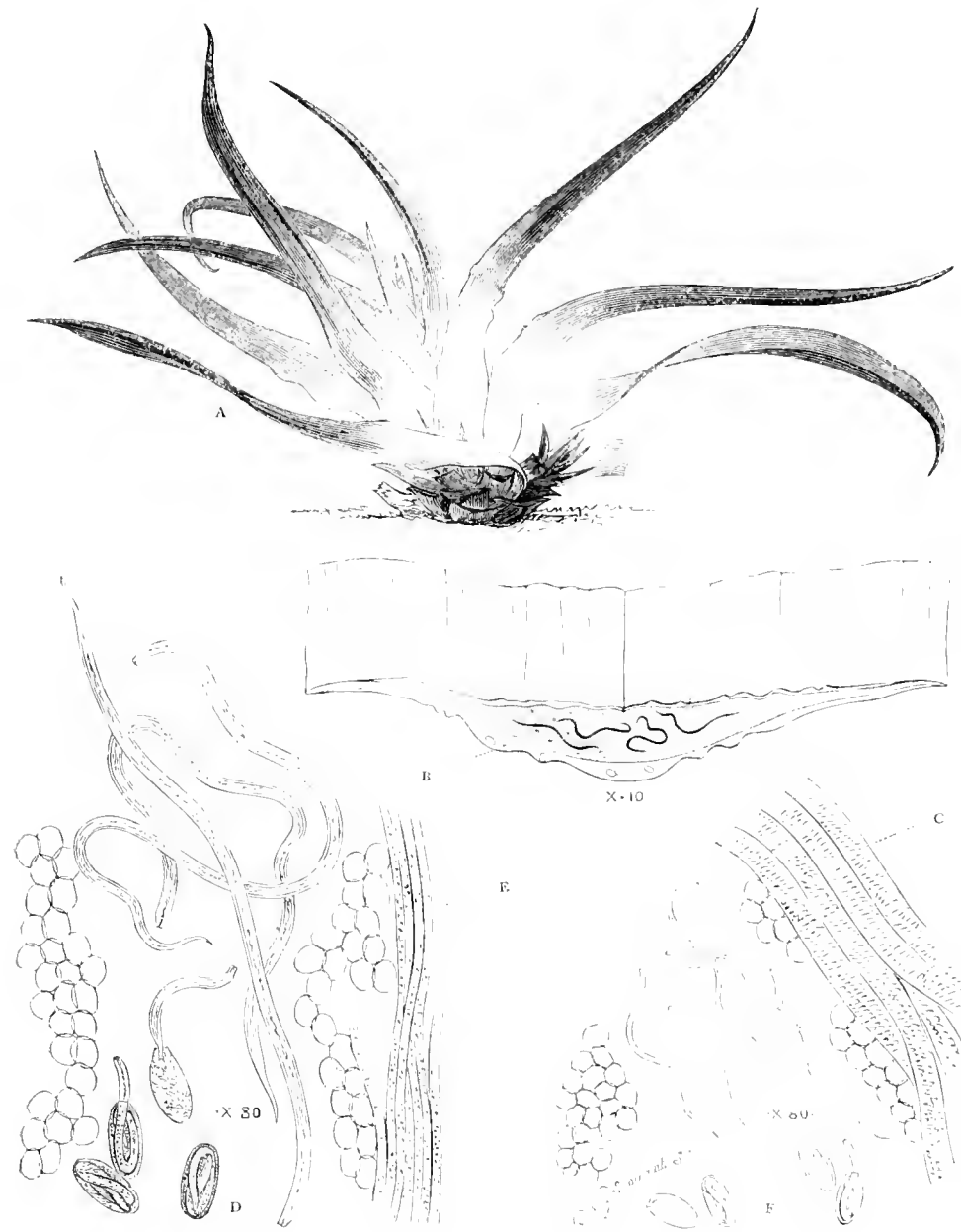


FIG. 11.—DISEASE OF CARNATIONS, CAUSED BY EEL-WORMS.

On examination, we found the stems and leaves swarming with eel-worms (see fig. 11). As these creatures find entrance by the soil, we can only counsel burning the plants, and turning out the mould. There is no application that we know of that will cure the disease, or kill the animals without also killing the plant. High manuring might enable the plants to withstand the attacks better, but of this we are very doubtful.

MALMAISON CARNATION.

Those who have been fortunate enough to secure a good stock of Malmaison Carnations will, during the next few weeks, be amply repaid for the care

that a few cultural details, gathered from a highly successful grower of these popular flowers, will prove useful to the readers of the *Gardeners' Chronicle*.

Mr. J. Kitley, whose houses are near the grounds of the Castle gardens at Warwick, cultivates 2000 plants, and devotes three large span-roofed houses to their culture; one is filled with large plants in 7 and 8-inch pots, which were potted on last season, while the other two are occupied by splendid young plants in 6-inch pots, which were layered in July and August last, and are now carrying wonderfully fine blooms. The plants themselves are strong and sturdy, and the picture of health and cleanliness, just the type of plants which all Carnation growers

FORESTRY.

SEASONABLE WORK FOR JULY.

I HAVE just been inspecting a number of plantations formed at different times within the past thirty years on marsh ground and Irish peat bog, and such is their progress that I am warranted in recommending this class of ground to be planted as a source of profit and utility to the owners. Keeping in view the vast tracts of waste land of this class to be found in Great Britain and Ireland, this forms a subject of no mean importance to all who have the welfare of the country at heart. We shall, however, not dwell upon that in the meantime; my object being rather to point out that this is the best season of the year for draining bog and marsh land, as the work can be executed in a superior manner and at a cheaper rate during the heat of summer than at any other time during the year. The size and quantity of drains required must always be settled on the spot, and in accordance as the circumstances of the case may direct, but as a general rule it is best to have the work done by contract. The larger size of leader drains should be cut as near the margins of the plantations as the circumstances of the case will admit, and in many cases they can be utilised as the boundary fence. When large drains are cut in the interior of bog plantations, they prove a source of annoyance at the time of removing timber, and in many cases bridges require to be built to facilitate the operation, and as the erection and maintenance of such are expensive, the fewer the better. These hints should all be kept in view by the planter at the time of the formation.

This is likewise a proper time to fence, drain, and otherwise prepare hilly ground for planting, and in

all cases where stones and turf can be had convenient, they should be utilised for the erection of dykes around the margins, as they not only protect the plants from the inroads of deer, sheep, and cattle, but likewise afford considerable shelter to the plants at the start, and until they become inured to the climate of the locality. Wire fencing has been used of late for this purpose in many parts of the country, but practical experience and observation forbid us to recommend its use, as it affords no shelter, and is a source of danger to deer and game. In places where the soil is of a hard impervious nature, the spots where the plants are to be placed should be loosened or broken up with a tramp-pick to admit air, rainwater, and heat, by which means the cold dormant particles of the soil will be converted into an active fertile condition as food for the roots.

In the formation of mixed plantations, capacious pits had better be dug for the hardwood trees, and the stuff excavated left on the edge of the pit, exposed to the influence of the weather till planting time. In the formation of ornamental plantations, the ground had better be trenched at once; of course this will entail a little extra expense at the outset, but the superior growth of the trees in after years will amply compensate for this. It is best to have this sort of work done by contract; the average cost of trenching ground 20 inches deep is from £8 to £10 per acre. The price, of course, varies a little according to the state of the labour market, and the texture of the soil. Prepare ground for planting that has already produced a crop of timber, and in cases where the ground is not to be trenched, pits should be dug for the reception of the plants; these should be of such a size that the roots of the trees to be planted can be spread out to their full length without crossing each other; and as the work proceeds, pick out all chips, roots, and fragments of wood that may be in the soil, as a means of preventing the growth of fungus, which is inimical to the healthy growth of the trees, and sometimes causes their premature death.

If not already done, the stumps of Pine trees left in the ground that had been felled during winter and spring should be examined, and in cases where the Pine beetle and Pine weevil are found to be using them for breeding purposes, the bark should be removed at once, as it is always between the bark and wood that these pests deposit their eggs. Gather the bark, chips, and fragments of roots into heaps here and there, and burn them; spread the ashes over the surface of the ground, as it is very valuable as a manure. *J. B. Webster.*

THE HERBACEOUS BORDER.

SHIRLEY POPPIES.

To enjoy the full beauty of these flowers, seed should be sown in the autumn for early flowering, and in succession at intervals during the spring and early summer; they are perfectly hardy if not sown too early in the autumn. We find the second and third weeks in September the best time for this locality, as those sown before this period get too large and succulent, and are killed by the first hard frost. It is best to sow them where they are to flower, as they are rather impatient of removal, and never do well after. A row we have here, in full flower at the present time, is much admired; the seed was sown on September 27, and the plants are now nearly 4 feet high, the same in diameter, the row being 25 yards long, and full of flowers of various beautiful shades of colour. We find short branching sticks on each side necessary to support them; and if they are sown in large square patches, they are not much trouble in this way, but the flowers are then not so easily gathered. It is best to cut the flowers early in the morning, before they are fully open, and they will then last several days for room decoration. The most effective way of putting them up, is to mix some unopened buds and foliage with the expanded flowers, and some grasses with good foliage, such as the wild Oat, Couch grass

in flower, Wheat, Barley, or some similar kind; they should be cut at different lengths, and must on no account be crowded, or the effect will be spoiled; neither is it well to mix any other flowers with them. The flowers look, when in the bud, better than *P. somniferum* and *P. orientale*, and last in beauty longer, as the plants give a succession of flowers. *W. H. Divers, Ketton Hall Gardens, Stamford.*

NURSERY NOTES.

LILIES AT TWICKENHAM.

A GLANCE into the nurseries of Mr. H. A. Tracy, at Amyand Park Road, proves that the specialties of Orchids and Liliums have not suffered by his taking over the establishment. The large conservatory and an adjoining house contain a very fine show of *Lilium auratum rubro-vittatum*; the varieties of *Lilium speciosum*, among which *L. s. Melpomene* seems better than *L. s. cruentum*, which is also a good variety. Among the white forms, *L. s. album novum*, which is grown in quantity, proves a better flower than *L. s. Krätzeri*; and, in addition, the light yellow anthers of the former look better with the pure white flower than the chocolate ones of *Krätzeri*.

Lilium longiflorum and *L. l. Wilsoni*, true, are here for comparison, the latter having larger flowers than the common *L. longiflorum*, and often eight or ten on a stem.

Outdoors, are large beds of *L. Leichtlinii*, *L. Batemanni*, *L. Zovitzianum*, *L. auratum rubro-vittatum*, *L. a. virginale*; the various forms of *L. speciosum*, and most of the other showy Lilies.

Among the Orchids in bloom are some fine *Cypripediums*, *Cattleya Gaskelliana*, *C. Mendeli*, and *C. gigas* of great merit; and various *Odontoglossums*, *Acerides*, *Masdevallias*, *Saccolabium cœleste*, &c.

SCOTLAND.

CALCEOLARIAS AND CINERARIAS AT BEECHHILL NURSERY, EDINBURGH.

THE strains of Calceolarias and Cinerarias so carefully selected and improved by Mr. John Downie year after year, have been exceedingly fine this season. For brilliancy and purity of colours, the uniform compactness of their habit, the size and perfect form of their flowers, and the abundance of their inflorescence, they leave nothing to be desired. They average from 18 to 24 inches high, including inflorescence, with ample leaves, in 7-inch pots, the plants in many cases being as wide as they are high. Such perfect strains can only result from the most careful selection of the seed-bearing plants. *W. S.*

TEA AND COFFEE SUBSTITUTES.

(Continued from vol. 17., p. 768.)

COMPOSITEÆ.

82. *Silybum marianum*, Gaert.—In the Kew Museum is a sample of these seeds, or rather fruits, from Asia Minor, where they are known under the name of Kenguel, or Dene Kikeni. The plant is said to grow in all parts of Asia Minor, and the so-called seeds are roasted and used as coffee. A medicinal value is also imputed to them by the Turks.

URTICACEÆ.

83. *Humulus lupulus*, L.—The application of the Hop for the production of a non-intoxicating beverage is a novelty that has attracted some attention of late. It is stated that an Assam tea planter, at the close of the last Hop season, settled down on the Medway, near Maidstone, and with drying-machines and tea-rollers, as used in Assam, succeeded in making a kind of tea, which, though it cost twice the price of excellent Indian or Chinese tea, is likely to become an important

article for mixing with the better-known beverage of that name. The infusion is said to contain all the tonic, soothing, and nutritive properties of the Hop, and when mixed with tea proper, counteracts its astringent and tanning properties. A company has been formed in London for the sale of this tea, and it is now to be obtained from any grocer. A sample is shown in the Kew Museum. *John R. Jackson, Museum, Kew.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

BEDDING PLANTS.—These have generally made satisfactory progress, and from this date, the plants from which we have hitherto kept the blooms picked off will be allowed to flower. The only attention necessary, until the time for taking cuttings arrives, is to remove all faded flowers and leaves, and weeds, and affording water at the roots, when this is considered to be necessary. Pinch the points out of extra strong growths, and peg down the shoots of trailing plants as occasion may arise, so as to promote and maintain a symmetrical surface in the floral display made by beds filled with Pelargoniums, Calceolarias, Ageratums, Verbenas, Heliotropes, &c. In the matter of mixed beds, in which standard, bushy, and trailing plants are used in variety, care must be taken not to allow the stronger growers to smother the weaker ones, but let each have ample space to develop and appear to advantage. Large beds of mixed plants of irregular heights, with the colours somewhat regularly distributed, are certainly very effective, and contrast well when viewed in proximity to masses of scarlet, pink, yellow, mauve, blue, white, &c. Geometrical or carpet-pattern beds must have the dividing lines of the design, and the filling of the panels strictly confined each to its proper space, otherwise the effect as a whole will not be good.

BUDDING ROSES.—The bark of Briars and Roses is now in capital condition for operating on. The process of budding is well understood by gardeners and amateurs generally, but, nevertheless, there are many among the numerous readers of the *Gardeners' Chronicle* who would be glad to be initiated into the way of doing it, so I will briefly detail it. Select shoots containing plump buds of the desired varieties of the Rose to be budded, cut off the leaves and half the leaf-stalk, label and stand them on their butt-ends in a can containing water, so that they may be kept fresh until used. Then make a transverse incision about 1½ inch from the main stem, on the upper side of a stout shoot, and from the middle of this a longitudinal one extending to about 1 inch in the direction of the stem. Next remove a bud from one of the shoots referred to by taking it in the left hand, and inserting the knife about half an inch below the bud, and, with a clean sloping cut, pass the knife inwards well under the bud, and then slope outwards so that the eye shall be in the centre of the shield thus removed. In doing this, the knife will necessarily cut off a thin slice of wood with the bud; this should be removed by turning the cut surface upwards, holding the piece between the forefinger and the thumb of the left hand; enter the point of the knife between the inner bark and upper extremity of the wood, which raise a little to enable it to be laid hold of between the point of the knife and the nail of the thumb, and then, with a sort of twitch, remove the wood, being careful not to remove or injure the base of the bud. This done, with the thin handle of the budding-knife raise the bark on each side of the incision, commencing at the corners immediately below the cross cut. In raising the bark sufficiently to admit of the bud (held by the petiole) being gently pushed into position, be careful not to injure the cambium with the handle of the knife. Should the bark on either side of the bud be longer than the incision in the stock, cut a piece off the top end, so that the bark and cambium of bud and stock may fit closely together; binding the bud in position with bands of soft matting or worsted, in such a manner as to exclude air, and keep the bud on the alburnum, beginning at the end of the incision, and binding round and round to the top, allowing

the bud ample room between the turns and passing the end of the tying material under the last turn so as to secure it. An expert budder would pass a large quantity through his hands in one day. *H. W. Ward, Longford Castle, Salisbury.*

THE KITCHEN GARDEN.

ONIONS.—In late districts and cold soils, it is advisable to sow the Tripoli varieties for standing the winter about this date; but in warm soils and aspects, the second week in August is soon enough to sow. To make sure of a good crop, it is wise to sow twice where conditions are not favourable. These sowings usually prove very useful ones, the bulbs ripening in the height of summer. The seed bed should be deeply dug, and, if it be poor, a good dressing of well-rotted manure afforded. Avoid the use of very rich stimulating manures, which would result in a crop of bulbs with thick necks, difficult to get ripened. Fowls' dung, pigeons' dung, or night-soil, may be used—failing well-rotted farmyard manure. These should have been mixed with fresh soil, and thrown into a heap for some few weeks before being dug in. Do not use this compost in excessive quantities. There are two substances which I find of especial value for Onions, preventing the ravages of maggots and canker—these are soot and salt, which I sow on the land when it is being prepared for sowing, in quantity only just sufficient to colour the ground. Tread the soil moderately firm, and rake it to a fine tilth. The drills should be drawn very shallow, at 9 to 12 inches apart, and the seed sown evenly and thinly if it be new seed, or the plants will soon become drawn. The following are the varieties to sow at this season, viz., Mammoth, Silver King, White Elephant, White Leviathan, all of which grow to a large size, and are of mild flavour, but not long keepers. Daniels' Golden Rocca is the best hardy keeping Onion that I have grown, which will, when well grown, reach 2½ lb. in weight, and keep sound till January.

TOMATOS.—Keep the leading shoots secured to stout sticks, or to the wall, pinching off all side-shoots not required—the plants being neatly trained from the first, and allow the leading shoots to extend until fruits in numbers likely to get ripe during the season have formed. When this point is reached, stop the shoots, and mulch the ground with mild manure or leaf-mould. Tomato plants in pots put at the foot of south walls or other warm spots should be supplied with sufficient water, and occasionally with diluted liquid manure. Give them a mulch, if sufficient space can be found for it.

LETTUCES.—Seed may be sown in drills, if possible, in a part of the garden shaded by other taller-growing crops. Sow very thinly, and thin out the seedlings early to 9 or 12 inches apart, according to the size of the variety. Supply Lettuce with water in abundance in dry weather, and occasionally with manure-water.

Take up Shallots and Garlic as soon as the tops turn yellow, and properly dry the bulbs before storing them. Bend down the tops of winter-sown Onions to induce size in the bulbs. *C. J. Waite, Glenhurst Gardens, Esher.*

THE HARDY FRUIT GARDEN.

PEACHES AND NECTARINES.—The crop generally speaking is a good one, but it will be later than usual. Leave no more fruit than one to every 9 inches square, or if the tree has borne heavily before, or is weak from any cause, one to a square foot will be advisable; and the same may be remarked of Sea Eagle, Bellegarde [This variety rarely sets too many. Ed.], Stirling Castle, &c. Growers must be guided in a great measure more by the strength, vigour, and size of the trees; and all thinning of the fruits should be done forthwith. Continue to lay in the shoots intended to carry fruit next year; and to keep the trees well furnished with shoots of this kind, repeatedly pinch the small laterals; and trim off part of or remove leaves where they shade the fruits, thereby assisting them in acquiring good colour and fine flavour. Although of late much rain has fallen in this part, the borders where coverings are used will get dry near the wall, and should have attention in the matter of watering, especially if the soil is well drained and light; manure-water is of great assistance to trees bearing well, and this should be applied in moist weather before the borders become dry and hard. Keep the engine in frequent use—every day, if there is time. Should mildew appear, dust the affected parts with flowers-of-sulphur, and

syringe the trees over every part thoroughly in a week afterwards.

NUTS.—If the summer prove favourable, the crop of Nuts will be a very heavy one in most parts of Kent. The work amongst the bushes for the present will consist of the removal of suckers, and keeping weeds in check by hoeing in sunny weather.

With regard to suckers from Nut bushes, I would remark that while the bushes should, as a general rule, be kept clear of them, many growers of Nuts reserve a good quantity for the rods for fastening down of fruit-baskets when sent to market, a purpose for which they are very useful.

STRAWBERRIES.—As soon as the fruits have been gathered from the early varieties, trim off some of the lower leaves of the plants, and clear out the weeds and strawy mulching; and if the soil be poor, another and richer mulching may be applied. Keep the beds moist and the runners in check, giving each plant the best opportunity to make fine crowns by the autumn. Oxonian and other late sorts should be secured from the blackbirds, &c., and the fruit exposed on a mulch of clean straw. Remove every alternate plant, whatever the variety, where they have been planted thickly for the first year, so soon as the fruits have been picked. *H. Markham, Mere-worth Castle, Maidstone.*

PLANTS UNDER GLASS.

THE GREENHOUSE.—Cinerarias raised from seed sown this spring, and pricked off as previously directed, will now be ready for potting in 60's. It is of great importance that the plants should gain the requisite strength and sturdiness before the short days set in; and should they not possess both, it is useless to expect fine flowers, or to have these plants in flower by the beginning of the year—therefore all necessary attention should be given them. A compost that will grow the Cineraria well may consist of two parts loam, one of leaf-soil, and one of decayed manure, with plenty of silver-sand mixed with these other ingredients. After potting, place the plants in a cold frame, so far filled with sifted coal-ashes that the plants are brought up nearly close to the glass. After the roots have taken to the fresh soil, tilt the lights at the back during the day-time, and shade with some light material in bright weather; but at night the lights may be taken off altogether, the plants being much benefited by the dew. Another small sowing of Cineraria seed may now be made, the plants from which will bloom in the spring.

CHRYSANTHEMUMS.—These, now growing fast, will require regular attention in regard to watering, the tying in of the young growth, so as to prevent their being broken by high winds, and syringing over-head every evening when the weather is bright; and should any of the young shoots be infested with aphid, dust them forthwith with tobacco-powder.

COLEUS, FUCHSIAS, BALSAMS, ETC.—If another batch of Coleus cuttings be now put in, the plants will be found very useful for decorative purposes during the autumn. Fuchsias, &c., which have filled their pots with roots may be assisted about twice each week with applications of weak and clear manure-water.

STOVE PLANTS, SPRING STRUCK.—Young plants of Dracæna, Pandanus Veitchii, Crotons, Ixora, Bougainvillea, &c., if not already done, should be potted at once, so as to give them time to make as much growth as possible before the end of the season. These plants make good progress in a very short time, if proper treatment be afforded them—that is, not stinting them of pot-room, but repotting those whose roots have reached the outside of the ball, thus avoiding any chance of a check. Nothing is worse than allowing them to remain long in the cutting-pots after they are rooted, as they soon become stunted and weakly. One great point in the successful cultivation of plants is, to give to each kind the soil it is known to succeed best in. Those who will study the requirements of the different kinds of plants in the matter of soils, will find that the progress of the plants will be much more satisfactory than if the potting be done in a haphazard manner. *R. Milner, Penrice Castle, Swansea.*

THE ORCHID HOUSES.

THE EAST INDIA-HOUSE.—Of all the Saccolabiums there is none that surpasses *S. celeste* when seen in its best form. I have had plants with as many as eleven spikes of flowers; but it should be borne in mind that the flower-spikes, if numerous,

should not be allowed to remain for a long period of time on the plants, or the latter will surely suffer. The plants succeed when grown either on a raft covered with living sphagnum moss, or in baskets hung up to the roof; for although it is a plant that suffers if it be not shaded during the hottest part of the day, yet it seems to enjoy a considerable amount of light and air; and during the warm weather the plant should have overhead syringings two or three times a day, which helps to keep the growths firm.

VANDA SANDERIANA is now sending up spikes of flowers. It is a plant which likes strong heat always, and I question if it be good practice to remove it when once a position is found to suit it. In such a position the roots will ramble apace and become attached to stages, walls, or any hard substances. It is supposed to be one of those plants which will always remain dear, and I would advise every amateur who can afford to buy it, to do so. Its varieties are variable, and out of about a dozen and a half of them, we have scarcely two that are quite alike in flower. I grow the plants in pots filled with crocks and sphagnum moss, and some coarse silver sand. I have grown the plant very well in a basket, but in watering it, many of the young roots got broken when immersing it. While the plant is growing it likes plenty of atmospheric moisture; our plants are stood in a group together, and roots and pots are syringed three or four times a day.

CALANTHE VEITCHII AND C. REGNIERI.—These plants, which are very strong growers, should now be stood wide apart, otherwise the growths will become spindly, and the foliage go yellow from want of air. From the present time, soot and guano water may be afforded them occasionally if previous calendarial notes have been followed, but it will not be advisable to give stimulants often if the plants have not been gradually brought to it. The syringing of these plants should be very carefully done, and only in the morning; on dull mornings it is better to thoroughly damp the pots and stages only, for if water run down in the hearts of the young growth at this part of the season, they may go off quickly. The maximum night temperatures may remain unaltered. *A. G. Catt, Parkfield, Hallow, Worcester.*

FRUITS UNDER GLASS.

PINE-APPLES.—The Queens, now ripening in quantity, will need less water, and no manurial aids. The bottom-heat should be kept up till the fruits are finished, for if checked in any way, the flavour will suffer deterioration, and the fruits have a shrivelled appearance; and as I advised in a previous Calendar, much may be done to prolong the fruiting period by admitting air rather freely, which will greatly increase flavour. This may be more easily done by transferring the plants at this stage to another house, where a less moist air is maintained, but where the bottom-heat is kept at a suitable pitch. The plants will not suffer in any way by this course of treatment. The night temperature for fruiting plants, at this stage, may stand at 70° to 75°. By removing fruiters, space is afforded the strong succession plants requiring it. Many of the earliest fruit will have been cut, and no delay should take place in potting up the strong suckers taken off for stock, putting them in 7-inch pots, or a size smaller for medium-sized suckers. Strong suckers are best obtained by pulling off all the small ones from the stools early—a proceeding that strengthens those which are left. Pot firmly in sound loam, and let the pots be well drained. Plunge in bottom-heat of 90°, using a pit or frame, and keeping a moist, growing atmosphere till rooted. I like frames if a good bottom-heat is obtainable to root suckers in at this season, as a short sturdy growth is made in them. The frame must be shaded at first, and water afforded with care, giving a good watering when potted, and again when the roots show at the sides of the ball. Lightly syringe the suckers on bright days, air freely, and shut up early in the afternoon. Any suckers potted early will now need a shift, which must be according to strength; in any case, do not cramp the roots in small pots. A check given to suckers at this date often causes small or badly-shaped Pines. In some gardens the strong suckers are planted out, but much will depend on the time at which fruit is wanted, pots being best if the plants are to fruit in a short space of time. Pines whilst growing should have liquid manure made from guano and soot, and this, if given in a weak state, is quite a safe stimulant. Late fruiters should be kept rather quiet for a time, so as to give them a rest. *Gro. Wythes, Syon House, Brentford.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, JULY 21. (Royal Horticultural Committee: A Paper on Early Peaches, by T. F. Rivers.

SHOWS.

TUESDAY, JULY 21. (National Carnation and Picotee Society (Southern Section); also Fruits and Vegetables, at the Drill Hall, James St., Westminster

THURSDAY, JULY 23.—Workshop.

SALE

FRIDAY, JULY 24. (Sale of Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.4.

Fruit Culture.

THE extension of hardy fruit culture in this country should certainly receive a stimulus from the meeting held at the Mansion House on Tuesday last. The meeting was large—it was influential—the speeches were void of exaggeration, and generally to the point. There will not be much difference of opinion as to the merits of Bramley's Seedling, recommended in a letter from the Dean of ROCHESTER, as most people will endorse the commendation, but the Dean's statement that a cottager had paid his rent from the produce of two Apricot trees, suggests the question, "How often?" Those who peruse our yearly fruit reports, and those of our contemporaries, will have a vivid sense of the precarious nature of the fruit crop, and of the wisdom of the Minister of Agriculture in describing it as an adjunct to, rather than as a substitute for, other crops.

MR. CHAPLIN, whose speech we report in full in another column, had evidently greater hopes from butter and eggs than from fruit; nevertheless, he quoted some astonishing figures, which certainly show that very much more might be done in this country than hitherto has been done in the matter of supplying the tables of the lower classes with wholesome fruit. Lord EGERTON OF TATTON, who followed, pointed out the necessity for careful selection and packing, and adverted to the great extension of fruit-culture under glass round Manchester, the fruits grown being the Cucumber and the Tomato, both botanically fruits, but hardly so in a market sense.

SIR JAMES WHITEHEAD, who has done so much in this matter, alluded to the rejuvenescence of the Fruiterers' Company, and to the necessity for justifying its continued existence. He recalled the splendid show inaugurated under its auspices at the Guildhall last year, and advocated the restoration of neglected orchards, and the extension of fruit-culture in cottage gardens. How all this was to be done was detailed at length, but no new idea was thrown out, nor any proposal made that has not again and again been made public. The Baroness BURDETT COURTS made a true

womanly speech, full of sympathy for the labouring classes in the agricultural districts. She deplored the dullness of their lives, and the monotony and want of interest in their surroundings, as contrasted with the energy and variety manifest in town life. Anything that could brighten the home-life, and contribute to the welfare of the cottagers, was, in her opinion, a most desirable thing to encourage. In a low but clear voice, and with well-chosen words, the Baroness pressed her points home, and when she sat down those who heard her must have felt that, whatever difficulties and doubts there may be in the matter when looked at from a strictly commercial point of view, there could be no doubt as to the soundness and applicability of the views put forth by the Baroness from a "homely" aspect.

MR. H. R. WILLIAMS, in proposing a vote of thanks to the LORD MAYOR, alluded to the large consumption of jam in this country, and to its use as an ingredient in the penny dinners supplied at some of the Board schools. He, too, had his statistics, and though he could not tell his audience exactly how much sugar was used in the preparation of jam, it was certain that a large proportion of the imports was devoted to that purpose, the total quantity of sugar imported last year amounting to 1,247,977 tons! The extension of fruit culture, and the fabrication of jam, must therefore be a benefit at once to the home producer and to the Colonial cultivator.

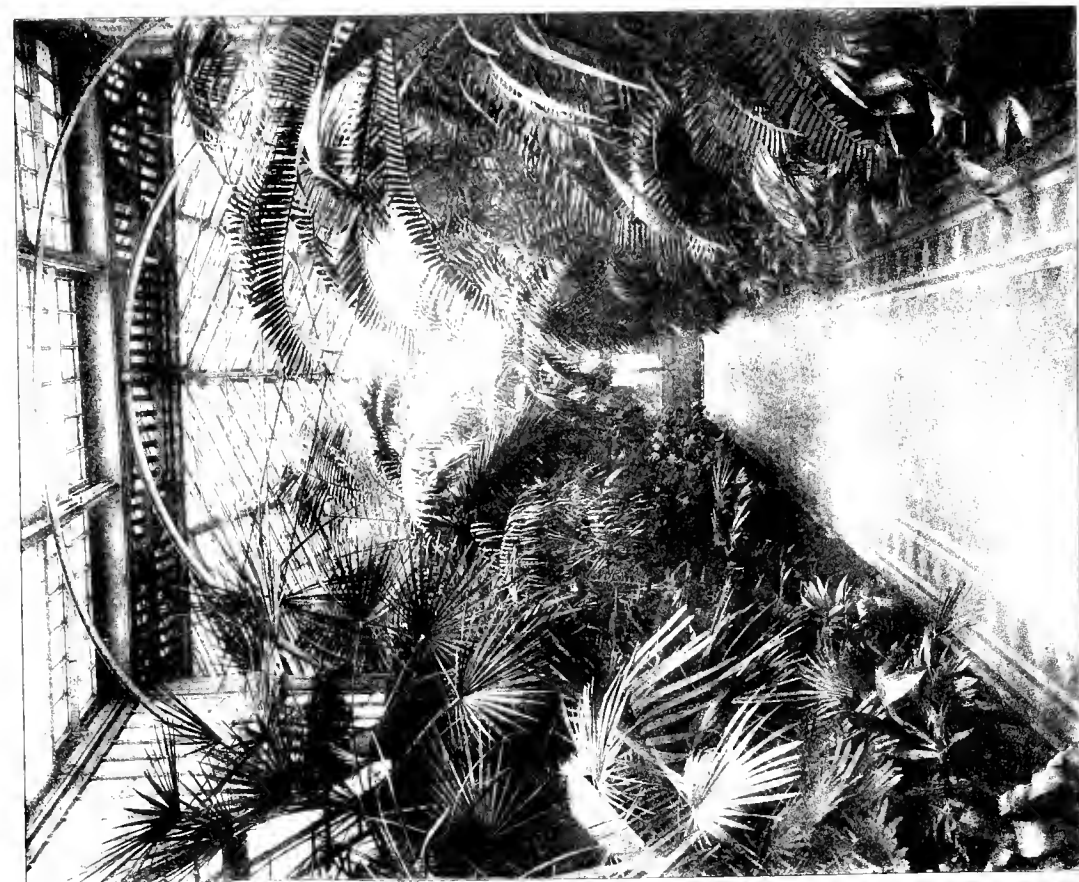
The Medals and Certificates awarded at the Guildhall Show were then distributed, our correspondent, MR. WOODWARD, obtaining the premier prize of a gold medal.

So far well, we are all agreed as to the desirability of extending fruit culture. Speaking generally, we know what to do and how to do it. There is substantially no conflict of opinion as to the methods to be followed. We know what the broth should be, and how to make it and cook it. But we may ask if there is not some risk of the broth being spoiled by a multiplicity of cooks? This most laudable effort of the Fruiterers' Company is a new thing for it, and from anything that was said at the meeting on Tuesday, it might be assumed that it was new to other people as well, that the Royal Horticultural Society did not exist, that it had not organised conferences, or instituted trials and grown the best sorts for many a long year; that it had not published the most valuable reports in existence on the very subjects under discussion. Again, who would have guessed of the existence of the British Fruit Growers' Association, inaugurated for the very purposes, and pursuing identically the same methods as those which the Fruiterers' Company proposes to adopt? Who would have thought that the Society of Arts had taken part in the promotion of fruit culture? Who would have thought that the gardening press devoted many columns to the subject, and collected and published extended reports on the subject annually for many years past? Who would have thought, when the formidable list of lords, ladies, and gentlemen proposed to constitute the committee were mentioned, that there were, even at that meeting, not a few whose knowledge on the subject might be a little more extensive, and somewhat more trustworthy than that possessed by the distinguished individuals selected as representatives of the movement? The word "experts" was, indeed, casually mentioned, but no expert, so far as we noticed, was invited to contribute his experience. This, however, in itself, is not a matter of much moment. The Fruiterers' Company is worthy of

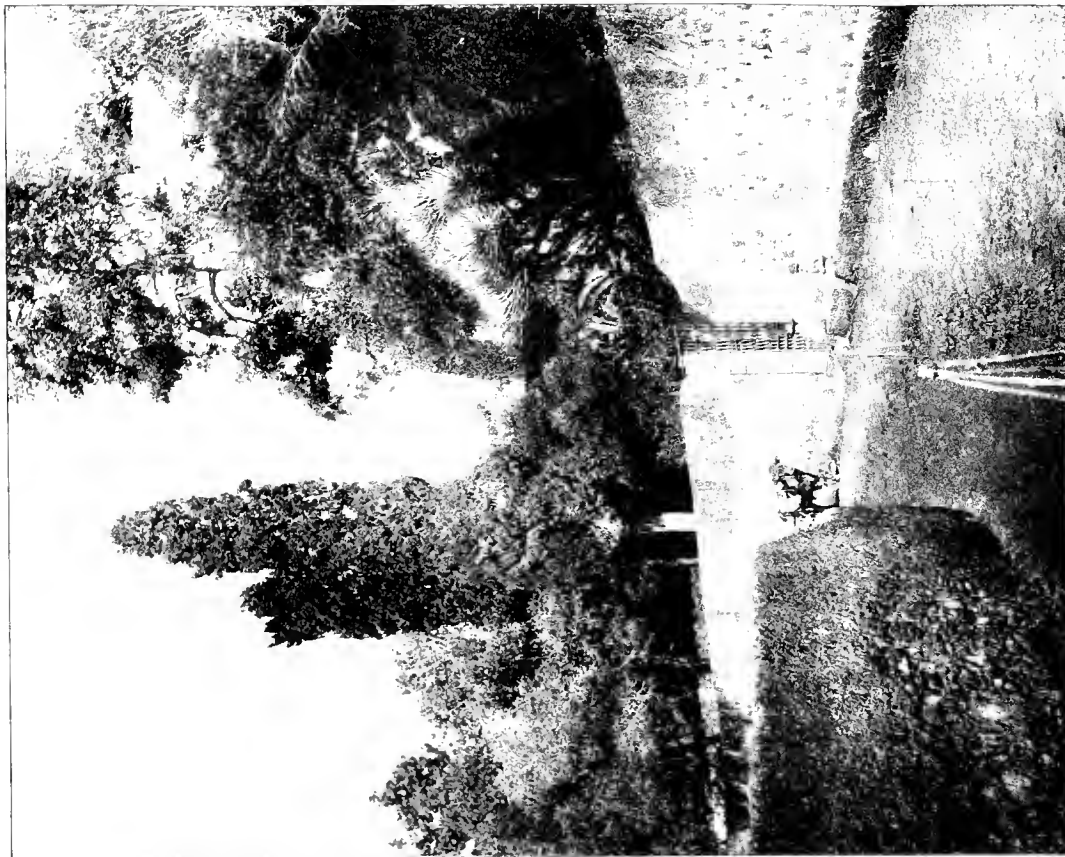
all commendation for the part it has taken. We can only recommend it not to ignore what has been done by others, but to combine its energies with those of some of the other societies, so that we may not have the waste of power engendered by half-a-dozen agencies simultaneously doing what one or two could do with greater effect.

MR. BULL'S WINTER GARDEN.—Visitors to Mr. BULL's annual exhibition of Orchids can hardly fail to note the winter garden, which forms the entrance to the brilliant show of Orchid treasures. To institute a comparison would be superfluous and irrelevant; suffice it to say, that the noble and stately Cycads and Palms, and the graceful tree Ferns give as much delight to the lovers of plants as the more highly-coloured Orchids. So majestic at all seasons are they, that it is a matter of wonder that public taste does not run more strongly in that direction. Of course, space is needed, but where that is forthcoming, no plants can be more imposing than these. Beyond strict attention to cleanliness, there is no special difficulty in the cultivation of these plants, which are far more in vogue on the continent than here. Mr. BULL's collections are very rich in interesting species, many of which have been figured from time to time in our columns, and we are glad to have the opportunity of giving a general view in our supplementary sheet, which may serve to suggest to those who scan it the stately grandeur of the plants. Intermixed as they were, when last we saw them, with Bermuda Lilies and Spiraea astilboides (one of Mr. BULL's specialties) the effect was particularly fine.

A MADEIRA GARDEN.—The Supplementary Illustration, taken from a photograph executed by one of our correspondents, MR. HARCOURT POWELL, shows the entrance to the garden of a Madeira Quinta. The tall, erect Cyresses, and the singular Dracenas, give a characteristic feature, which tells of a widely different climate from our own. To give anything like a complete list of the trees and flowering plants that adorn the gardens of Madeira would be a work of considerable labour. Let it suffice if we point out a few of the more conspicuous, such as the Camphor tree (*Laurus camphora*), the India-rubber tree (*Ficus elastica*), another *Ficus* (*F. comosa*), that grows to a large size, and puts forth handsome tressy foliage; the blue-flowered *Jacaranda mimosifolia*, the Tassel tree (*Astrapea Wallichii*), and a second *Astrapea* (*A. viscosa*), the spiny-stemmed Silk Cotton tree (*Bombax Ceiba*), the uncouth *Bella Sombra* (*Pircunia dioica*), common in Portugal; the so-called Pepper tree (*Schinus Molle*), with evergreen weeping foliage; the Coral tree (*Corallodendron Crista-galli*), and other species of the genus; two or three species of *Schotia*, many species of *Acacia*, the Papaw (*Carica papaya*), the Trumpetwood (*Cecropia peltata*), and the Screw Pine (*Pandanus odoratissimus*), the three last being strongly marked with a tropical aspect. The Papaw bears a Pear-shaped green fruit, of which no use is made. The juice has the property of making tough meat tender, and the same effect is produced by the leaves if the meat be wrapped in them. The Palms include the smooth-stemmed Cabbage Palm (*Areca oleracea*), the Date Palm, and two Fan Palms, the *Latania borbonica* and the *Chamærops humilis* of Portugal. The dwarf Cycas *revoluta*, though frequently called the Sago Palm, is not one of the true Palms. At the top of the stem, surrounded by a circle of leaves, there is often to be seen a number of red unfertilised fruit. Amongst the Coniferous trees will be seen the Norfolk Island Pine (*Araucaria excelsa*), the Brazilian Pine (*A. brasiliensis*), and two or three other species of the same genus, the graceful Canary Pine (*Pinus canariensis*), the gray Aleppo Pine (*P. halepensis*), and two New Zealand trees, the *Podocarpus nereifolia* and *Dacrydium cupressinum*. Amongst the Proteads are *Grevillea robusta*, with yellow flowers, *Banksia serrata*, and *Leucodendron argenteum*, with silvery leaves. The Myrtaceous trees include *Eucalyptus robusta*, and several other species of the genus, the



WINTER GARDEN AT MR. BULL'S, CHELSEA.



ENTRANCE TO THE QUINTA PALMEIRA, LIVADA, MADEIRA.



Gum trees and Stringy-bark trees of Australia; the Allspice (*Pimenta communis*) and the Rose Apple tree (*Jambosa vulgaris*), which bears an insipid fruit.

ROYAL HORTICULTURAL SOCIETY.—On Tuesday next, the National Carnation and Picotee Society will hold its annual show in the Drill Hall of the Royal Horticultural Society, Westminster.

THE BRITISH FRUIT GROWERS' ASSOCIATION—**FRUIT PROSPECTS.**—At a meeting of the above Association, held in the Horticultural Club, Hotel Windsor, on Thursday, July 9, at 6 P.M., the ordinary routine business was transacted, and further arrangements were made for the various Conferences. It was announced that at Cardiff, on August 12, Mr. A. PETT-GREW would read a paper on "Hardy Fruit Culture in South Wales;" also that several other valuable papers had been promised. Two Vice-Presidents were added to the already long list of influential gentlemen—namely, CYRIL FLOWER, Esq., M.P., Aston Clinton, and H. L. STEPHENS, Esq., Finchley, both of whom are especially interested in horticulture. It was also stated that at the Beddington Park Conference, on August 3, Sir JAMES WHITEHEAD, Bart., would preside, and deliver the opening address, to be followed by short papers on different aspects of fruit culture. Reports on the condition and prospects of fruit culture had been received from numbers of members, some of which were read.

PROFESSOR PLOWRIGHT.—Dr. PLOWRIGHT, whose lectures on parasitic fungi at the Royal College of Surgeons we reported early in the year, has been reappointed Professor of Comparative Anatomy and Physiology at the College. His next course of lectures will be devoted to the diseases of the reproductive organs of plants caused by fungi.

JUBILEE OF "PUNCH."—Our Jubilee brother has followed our example, in giving a brief history of the men of light and leading who were among the earlier contributors to the renowned journal. *Punch* has deservedly won the suffrages of the community—long may it retain them.

FLOWERS IN SEASON.—We have received from Mr. G. SMITH, of 61, Penrose Street, Walworth, some flowers of a kind of Pink, with a perpetual flowering habit, and of bright, pleasing colours. The flowers (single) differ from *Dianthus diadematus*, or *fimbriatus*, in having a flatish, saucer-like form, and dentate instead of fringed edges to the petals; a dark eye adds to the attractiveness of the bloom.

EXTRAORDINARY STRAWBERRIES.—At the Crystal Palace National Rose Show on Saturday, the 4th inst., E. AMES, Esq., of Ashford Road, Maidstone, exhibited a dish of twenty Strawberries, weighing collectively 2 lb. 1 oz., and varying in size from 7½ to 8½ inches in circumference—very creditable for an amateur. The variety was James Veitch.

VIOLAS AND PANSIES AT CHISWICK.—A series of beds of these, planted with good varieties, contributed by Messrs. Donnie & Co., Rothesay, are just now charming features in the gardens of the Royal Horticultural Society. It is believed, by some persons, that these flowers do not succeed as bedding plants down south, but an inspection of these beds would demonstrate the fallacy of this notion.

BAILLON'S "HISTOIRE DES PLANTES."—The last issued part of this valuable publication contains the author's revision of the Labiatae, Verbenaceae, Ericaceae, and Illicaceae. Avicennias find a place in Verbenaceae, while under Ericaceae *Empetrum* is included as well as Epacridaceae and Diapensiaceae. *Cyrtillas* are grouped with Illicaceae. These examples show that M. BAILLON holds original views which are not likely to command universal assent. This, however, is a matter of little consequence compared to the clear descriptions, useful bibliographical references and excellent illustrations with which the book abounds.

DALSTON AND DE BEAUVOIR TOWN CHRYSANTHEMUM SOCIETY.—At a recent meeting,

called for the purpose of electing a President as successor to the late Mr. W. HOLMES, Mr. C. GIBSON, Morden Park Gardens, Mitcham, and Mr. J. UDALE, Caterham, were invited to lecture upon the present requirements of the Chrysanthemum. Excellent practical addresses were delivered by both cultivators; and numerous pertinent questions were asked and answered. Unanimous votes of thanks were accorded to the lecturers, and general satisfaction was expressed with a most agreeable and profitable evening. The credit of the success is due to the admirable arrangements made by Mr. A. HILL, Chairman; Mr. W. BUTLER, Hon. Sec.; and Mr. R. BALLANTINE, Chairman of the National Chrysanthemum Society.

THE "EARLY RIVERS" CHERRY.—Of this variety, Mr. T. F. RIVERS said lately:—"I venture to predict that this Cherry will some day be as popular as the Early Rivers Plum. I have now tested it for some years as a standard in the open air; for the last three or four years it has borne abundantly. It is now fully ripe enough for the market, and therefore some days earlier than the main orchard crops, which will not be ready for some days. This precocity will enable growers to compete with foreign Cherries, than which it is infinitely better in quality. It succeeds both on the Mahaleb and on the Cherry stock, and may be grown in rows 12 feet apart as semi-standards, which is probably the most profitable manner of growing fruit."

CARDINAL HAYNALD.—It is only a short time since we had occasion to speak of this eminent and erudite prelate, since deceased. He was an enthusiastic botanist and a man who won respect in all relations of life. He took part in the Botanical Congress at Florence in 1874, and one of the memorable incidents of that gathering was the meeting of VICTOR EMMANUEL and the Cardinal in the Pitti Palace. The Cardinal's tendencies were more botanical than horticultural, but many Orchid growers will recall his name by the *Cypripedium* which the late Professor REICHENBACH named in his honour.

HORTICULTURAL EXHIBITION AT BRUGES.—This is the second exhibition which the provincial Horticultural Society of Bruges has organised this year with complete success. T.R.H. the King, Queen, and Princess CLEMENTINE honoured the exhibition with a visit. After this, MM. COPPRETERS and WALLANT (the Vice-President of the Society, and G. VINCKE-DEJARDIN (a horticulturist), obtained the Cross of a Chevalier of the Order of Leopold. M. G. VINCKE-DEJARDIN showed about 600 tropical Orchids:—1, A group of great beauty, composed of about 400 specimens; 2, a fine group of *Odontoglossum Alexandrae*; 3, fifteen *Odontoglossums*; 4, twelve *Cattleyas*; 5, fifteen *Cypripediums*; 6, *Cattleya Mendeli*, with fifteen flowers, shown as an example of good cultivation; 7, *Vanda tricolor Vinckeaana*, as a novelty. Very noteworthy were the tall Palms from M. DUMON DE MENTERG, *Cocos Yatai*, *Jubaea spectabilis* (of unusual size), *Kentia Mooreana*, *Corypha australis*, and *Rhaphis flabelliformis*. Very fine also were the Palms sent by M. GUST. BAERT, and the hybrids of *Anthurium Andreanum*, from M. G. VINCKE-DEJARDIN. The floral decorations of Mlle. VINCKE, of Ostend; and M. J. VERHAEGHE-RYS, of Bruges, were above the average.

THE EXHIBITION OF THE "CERCLE HORTICOLE LOUIS VAN HOUTTE, OF LEDEBERG," which will be opened on August 23, promises well, and will be one of the events of the horticultural year.

THE ANTWERP INTERNATIONAL EXHIBITION (August 9 to September 23), promises to be a complete success. Very interesting and curious collections of vegetable products will be there shown, and also microscopical exhibits. The permanent horticultural show (Japanese, Chinese, Californian, Australian, and Cape flowers) bids fair to be excellent. The date for the opening of the temporary horticultural exhibition is fixed for Sep-

tember 13. Programmes of both exhibitions can be obtained from M. CH. DE BOSSCHÈRE, Lierre, Belgium.

THE DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—At a meeting held on June 13, the Floral Committee awarded the following First-class Certificates for new plants:—To Messrs. De Graaff Brothers, Leiden, for *Brodiaea Hendersonii*, Iris Gatesii, and I. Boissieri; to Messrs. E. H. Krelage & Son, Haarlem, for Iris Boissieri (new plant), and *Allium Kesselringii*; to Mr. G. C. Van Meeuwen, Haarlem, for *Dodecatheon elegans* var. *albidum*, D. e. var. *Gladstone*, D. e. var. *Novelty*, and *D. Jeffrayanum* var. *Celinda*; to Messrs. Ant. Roozen & Son, Overveen, for *Pasithea cœrulea* (insufficiently-known plant), *Pyrethrum roseum* var. *Camelot* (new plant), and P. r. var. *Carl Vogel* (new plant); to the Botanical Garden, Leiden, for *Vriesia insignis* (*Vriesia Barilleti* × *Vriesia splendens*); to Mr. C. G. Van Tubergen, jun., Haarlem, for *Crinum Moorei* album. Second Class Certificates were awarded to Messrs. E. H. Krelage & Son, Haarlem, for *Pæonia Moutan*, Linn., var. *Loudonia Burdin* (insufficiently-known plant); and Botanical Certificates to Messrs. E. H. Krelage & Son, Haarlem, for *Allium Kansuense*, Rgl. (new plant); *A. schoenoprasoides*, Rgl. (new plant); *Ranunculus asiaticus*, L., var. *La Singulière*, Hort. (insufficiently-known plant); *Tristagma nivalis*, Popp & Endl. (insufficiently-known plant). Awards of Merit were made to Messrs. De Graaff, Bros., Leiden, for *Allium acuminatum*, *A. orio-phyllum*, *A. Ostrowskianum*, and *Lachenalia quadricolor*.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The quarterly meeting of this Society was held on Monday evening last, at the Caledonian Hotel, Adelphi, Mr. E. BEARY in the chair. The principal business was the election of new members, no fewer than tw elve being elected and another nominated. The list of those who have been in receipt of sick-pay is rather a heavy one, but at the present date there are but two members on the fund. It may not be generally known to new members that a convalescent fund was established last year for the purpose of assisting members to get a change of air after illness. Ten shillings per week would be allowed for three weeks. The subscriptions are not less than one shilling per year, payable in July. The fund is voluntary.

HEMEROCALLIS FULVA.—Professor HARTOG writes, "I shall be grateful to any of your readers who will write and let me know their experience as to the variability of seedlings of *Hemerocallis fulva*, or who will raise it from seed in fair quantity, and kindly communicate to me their results, which shall be duly acknowledged. My reason is the following: there is in the formation of the pollen of this plant a peculiarity which, according to WEISMANN'S views, should lead to exceptional variability in the seedlings; but so far as I know, we have no evidence on the subject. MARCUS M. HARTOG, *Royal University, Dublin, July 9, 1891.*"

READING GARDENERS' SOCIETY.—On Friday last a large party, representing the above Society, about sixty in number, visited the seed trial grounds of Messrs. SUTTON & SONS, adjacent to the Great Western Railway at Reading. They inspected the large collection of Peas, and witnessed the operation of "rogueing" Peas in order to secure purity of stock; also a trial of Lettuces. They then partook of a tea at Messrs. SUTTON & SONS, afterwards inspecting a large plantation of Potatoes; and a collection of annuals and perennials now in full bloom. The members of the Society seemed much interested by what they saw, and before leaving passed a hearty vote of thanks to Messrs. SUTTON & SONS.

CUCUMBER DISEASE.—Several subscribers have this week sent young Cucumbers arrested in their growth, distorted, and exuding gum. Some of them also send roots with the nodules showing the source of the mischief. Unfortunately, although the malady is very common, we can indicate no sufficient cure.

NEW BOOKS.—A fifth edition of PIESSE'S *Art of Perfumery* has been published at 2, New Bond Street. Under the title of the *Making of Flowers* the Rev. Professor GEORGE HENSLAW has published a clear account of the conformation of flowers, and has advanced a theoretical "reason why," to which we must allude at further length on another occasion. The new edition of the *Book of the Farm* has been completed by the issue of the sixth division. (WILLIAM BLACKWOOD & SONS, Edinburgh.)

THE SILVA OF NORTH AMERICA.—It is not long since we had occasion to announce the publication of the first volume of this highly important publication. The second volume has now been published, and we shall take an early opportunity of bringing its contents under the notice of our readers.

TREE STRUCK BY LIGHTNING AT THE ROYAL BOTANIC SOCIETY'S GARDEN.—For the first time in its history, the Royal Botanic Society has had a tree struck by lightning. A Poplar was on the 9th ult., at 4.30 p.m., during the thunderstorm, stripped in places of large pieces of its bark and timber. Some workmen, who were busy preparing for the *fête*, were close to the tree, but, sheltered beneath the wet canvas of the adjacent tents, they suffered no hurt.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The Exhibition of the above will be held in the Drill Hall, James Street, Westminster, on Tuesday, July 21. A luncheon, at which MARTIN R. SMITH, Esq., Vice-President of the Society, has kindly consented to preside, will be given at the Hotel Windsor, Victoria Street, at 1.30 p.m., for members and their friends.

MARSHALL VON BIEBERSTEIN.—Among the suite of the German Emperor lately in this country, is the Foreign Minister of that name. How familiar it sounds to the botanical ear. The *Flora Taurico-Caucasica*, indeed, will be consulted long after the present Minister's despatches are forgotten!

FLOWER-BEDS ON THE EMBANKMENT.—Among the flower-beds to be seen in this garden is one bed of a different character which is very beautiful and noteworthy. It is composed of Verbenas of various shades of colour, intermingled among which are dwarf plants of white *Palox Drummondii* and double Stocks. Similar beds under the shade of trees are not successful. Another bed of a long oval shape is planted with the dwarf-growing *Zinnia flagellata* in variety, with double flowers; purple and scarlet flowered Verbenas, and *Convolvulus tricolor*, with an effect truly kaleidoscopic. The result is very beautiful, as seen in the beds in the full sun, and in marked contrast to the atrocious carpet beds. There are people who admire these triumphs of misplaced ingenuity, and, to a certain extent, it is right that their faucies should be catered for, but the County Council has done well to show a more excellent way, and thus gradually to improve the taste of the community.

PELARGONIUM GLOIRE DE PONTHEVIN.—The beauties of this large variety as a winter, or almost perpetual bloomer, are well exemplified in the greenhouses of P. G. WALTER, Esq., Byron Villa, Harrow. Taking the best truss, enumeration proves that it has already given seventy-eight flowers, nearly 2 inches across, of a soft shade of scarlet; and yet there are plenty to come. The pretty pink *Pelargonium Beauté de Ponthévin* has also proved a very showy plant, and a profuse bloomer.

MR. A. DEAN.—"Would you kindly allow me," says our old correspondent, MR. A. DEAN, "to make known to my numerous gardening friends, through the medium of these columns, that, after nearly twenty-one years' residence at Badfont, I am leaving on July 25, and shall be residing in the Richmond Road, Kingston. I am naturally somewhat loth to leave active gardening, as practised in seed-growing, &c., but my health demands that I should rest from mercurial work, as well as from the grave anxieties which attach to seed-growing. I hope none the

less to have many more opportunities than I have here to become familiar with gardening in other branches."

PEAS.—MR. CANNELL sends us a sample of his "English Wonder" Pea, an improvement on American Wonder, and one of the best early Peas. It was sown a month later than "Lightning," but comes into use at the same time.

MONSTROUS NYMPHÆA.—From Cherkley Court we receive flowers of this curious variety of *N. Lotus*, in which the petals are replaced by leaves, the stamens are abortive, and the place of the fruit, or seed vessel, occupied by a fleshy tuber.

BARON SCHRODER.—Among the German residents selected for honourable distinction by the German Emperor, is this renowned horticulturist. Those who have the pleasure of knowing him, will rejoice in the conferment of honours fairly won.

GLASGOW FAIR HOLIDAYS AND ROYAL BOTANIC GARDENS.—We learn from the *North British Daily Mail* that the Finance Committee of the Corporation have decided to open the gardens to the public, free of charge, during two weeks beginning on Monday first.

STRAWBERRIES.—On Friday week, 33,000 pecks of Strawberries left Swanley for the north of England, and 5000 for London on the same day.

TIBETAN PLANTS.—The last number of *Le Jardin* contains an account of the plants collected by M. BONVALOT and PRINCE HENRI, of Orleans, from Tibet. Among them, a species of *Meconopsis*, one *M. henrici*, with purple flowers, like those of *M. simplicifolia*; *Thermopsis barbata*, with racemes of purple flowers, figured in the *Botanical Magazine*, t. 4868, but almost, if not quite, lost to cultivation. *Leonopodium alpinum*, and *L. himalayense*, are not likely soon to be exterminated in Tibet. Among the Lilies is a Fritillary—*F. lophophora*—with yellow flowers speckled with brown; and many other interesting plants.

CHERRIES.—A Sittingbourne correspondent writes, that "So great was the havoc wrought by the frost about May 17 last, that many trees will be years before they can recover; and to give an idea of the loss to growers, I may mention some noted orchards, the produce of which, this year, only realised £475, whereas I have known as much as £1200 obtained; and last year, 1890, £959 was paid. The prices returned to us on Tuesday last for Cherries sold at Covent Garden were—Blacks, 5s.; Ambers, finest, 8s. per half sieve, or at the rate of 2½d. and 4d. per lb. Out of this, the grower has to pay 6½d. per half sieve for expenses."

HOME CORRESPONDENCE.

CABBAGES "BOLTING."—Both "W. G. II." and "A. D." appear to have missed the drift of my note on this subject in your issue of the 13th ult., p. 740. If they care to look over that note again, they will, I think, find I was anxious rather to elicit information than to dogmatise over local conclusions as to the causes of "bolting" of Cabbages this season in Scotland or elsewhere. The several causes stated by me were distinctly given as those assigned by individual sufferers by the disaster, and my own comments thereon were intended to evoke discussion on a point of deep interest to market gardeners and to the public. There is considerable diversity of opinion among practical men as to the cause of "bolting" of spring Cabbages; and it would be desirable to have the fullest possible expression of opinion upon the subject. "Bolting" is not an annual occurrence, fortunately; it does not occur every spring. It hardly ever happens, I venture to say, to any serious extent in ordinary seasons, except from too early sowing and the selection of unsuitable varieties for autumn planting. I think, however, that there is little reason to doubt but that a severe winter has something to do with the evil. "A. D.'s" opinion to the contrary notwith-

standing. If accounts which reached us of the weather experienced in the south last winter are to be trusted, we in the Lothians escaped lightly both in respect of actual frost and snow; but it was less cold and snow—indeed, of the latter, we had unusually little—the winter was prolonged, and extremely trying to green stuffs in a peculiar way. I stated in my former note that we had a severe winter up till February, when we experienced four weeks of genial growing weather, followed by a second winter, which continued to the end of May. It would be interesting to know if your correspondents' experience was similar to ours in February in their several localities. It would, then, at least be possible to arrive at a conclusion regarding the value of my contention that much, if not all of the "bolting" which occurred in the Lothians was due to the interregnum of the Ice King's reign in February, followed as it was by extreme severity of cold in March, April, and May. The general "bolting" that took place in this district last spring is not to be satisfactorily accounted for by "A. D.'s" assumption that the "stock was at fault." The growers, as a rule, can rely on the stocks they sow being right; the seed is, indeed, in many cases saved by the growers themselves. I must correct "A. D." in the conclusion he draws from my remarks respecting the relative hardiness of Scotch stocks and English stocks of Cabbage. I did not "claim" for the former that they were harder than the latter, but stated for what it was worth, that such an opinion was entertained by practical men in these parts. The only point requiring to be noticed in "W. G. II.'s" contribution to the discussion is, that *Etampes* is a variety that succeeds with him, though further north than the Lothians. It is interesting to know this, but it does not alter the fact that the variety is not approved of by the Lothian growers, who have tested it, and found that it is not so reliable as the *McEwan*. In my former note I said, while speaking of this variety, that it was later than *Pringle's Imperial* and *Worcester Early*. This is an error; it is somewhat earlier. W. S.

WOOD-PIGEONS IN LONDON.—On June 11, I noticed to you the fact of having seen a wood-pigeon in St. James's Park, opposite Marlborough House. I was not aware till a few days ago, when I saw it in an evening paper, that there is a colony of them in the park. This morning, at 5 A.M., I was awakened by the cooing of a wood-pigeon, which was on a tree close to my window, and as there is good shelter for them in the large Plane trees in the garden, I suppose we may have them settle here in the garden between Clarendon and Lansdowne Roads, Notting Hill. Thrushes and blackbirds we have, and very welcome is their song in its season, except to one frequenter of the garden, whom I overheard complaining, "that it would be very nice living out here, but for a beastly bird which began singing so early in the morning." J. A. C.

THE PAST WINTER NEAR ABERYSTWITH.—I am now able to send you a few of the results of the late severe winter on plants which are not commonly grown, on account of the doubts which exist as to their hardiness and power of surviving such a winter as the one we have just experienced. I ought first to state that this garden lies on the slope of a steepish hill, facing south-west, and is about a mile and a half from the sea. The lowest temperature was 17° (15° of frost) at 4 feet from the ground. I will begin by enumerating the very few plants which have been killed outright:—*Cordylina australis*, all killed; *Phoenix dactylifera*, a very large plant of *Eryngium pandanifolium*, *Cytisus racemosus*, all the shrubby Veronicas, with the exception of *V. Traversi*, which was unharmed; and all the *Pentstemons*, which had stood out for some years. Those that were injured comprise the *Myrtles*, which were cut a good deal, but are rapidly being covered with new foliage, right to the tops; *Aloysia citrodora*, cut down to the ground; the largest plant, twelve years old, is now breaking at the side next the wall, where the stem, which is more than 2 inches in diameter, has a slight coating of bark left; a younger plant is breaking well; *Phormium tenax* had the centre leaf in each crown a little browned, but otherwise is unharmed; *Aralis Sieboldii* was a little blackened, but is now nearly covered with new foliage; *Ceanothus rigidus* was cut a good deal, but has now recovered; the scarlet and yellow Pomegranates were cut to the ground, but are now breaking well. At one time I was afraid that a fine plant of *Passiflora Constance Elliott*, which last year had hundreds of blooms, would not recover, but it is now nearly covered with

healthy foliage; and as it is planted in a rather exposed spot, it may be considered quite hardy. Among those that have been quite unharmed, I would first note the Bamboos, which actually seem to have enjoyed the cold; *Chamærops Fortunei*, *Ceanothus Gloire de Versailles*, which is now coming into bloom; *Bocconia cordata*, which grows 10 feet high here; *Solanum jasminoides*, *Cistus ladaniferus*, *Buddleia globosa*, now covered with golden balls; *Olearia Haastii*, *Escallonia macrantha*, *Euonymus* of sorts, *Prunus Pissardi*, *Garrya elliptica*, *Azalea amœna*, *Eulalia zebрина*, *Deutzia gracilis*, *Zauschneria californica*, the Indigo plant, *Physalis Alkekengi*, *Alstroemeria chilensis* and *braziliensis*, *Lilium speciosum* and *L. elegans*, and a clump of *Echeveria glauca*, on a rocky. Of Ferns, I see *Oncoclea sensibilis* coming up very strong; but, before finishing, I must mention a plant of *Ficus minima* repens, which four years ago was turned out of an Orchard-house, on account of small slugs harbouring under the leaves, and planted under a wall. I enclose a shoot of it, to show what an effect the change of residence has had upon the foliage, as when grown indoors the leaves were three times as large. In conclusion I would mention that none of the plants alluded to have had protection of any kind. *G. W. Cosens, Bronnpularn, Abergystwith.*

MOLES.—It is my experience this year that slugs were never before so few, and moles so abundant. I should imagine that of the latter pests there must be ten where before there had been only one. The ground seems to be literally honeycombed by the creatures, and as we walk over it the surface sinks in deeply beneath the tread. Why there should be such a number of moles this year, it is indeed difficult to understand. It is certain that hard weather had no terrors for them; but then, in spite of a long period of unusually hard frost last winter, because the ground was so long covered with snow, the frost did not penetrate so deeply as is often the case when winters are less severe. It was generally expected that the long hard winter would have destroyed both slugs and snails, and I anticipate in my district such was the case. Still, we may learn that others have not been so fortunate, and are terribly pestered with these creeping plagues. Perhaps the comparatively dry weather has something to do also with the scarcity of slugs, but at least I have never found them, even in the driest weather, at this time of the year, to be so scarce as now. As to the moles, they run so near the surface, especially in ground which has been recently moved, that it is almost impossible to trap them. Still further, when one is surrounded by extensive market gardens, now full of Peas, Beans, Potatoes, Cabbages, and similar crops, amongst which hundreds of moles run riot and undisturbed, it is obvious that any one's prospects of keeping down the moles is very poor indeed. We could do well with a good heavy rain, to assist in setting the soil, but when it is literally one vast mole burrow, there is needed some greater pressure to solidify it than the heaviest of rains can well give. *A. D.*

CAMPHOR AS AN INSECTICIDE.—To kill greenfly on *Lilium Harrisii*, I found a means worth trying in an old German gardening paper. The correspondent took a small piece of camphor, and put it between the top leaves of the affected plant, and in a short time none of the insects were to be seen. As the camphor evaporates, it has to be renewed when necessary. *A. B., Bewley Heath.*

EARLY TOMATOS.—With me Horsford's Prelude is by far the best Tomato that I have tried for early forcing; it is a remarkable free setter, of excellent flavour, and of medium size, and globular. Were I confined to three varieties, I should choose Prelude, Perfection, and Hackwood Park. *W. K., Blackmoor.*

PRUNING GOOSEBERRIES.—It is scarcely the time of year to speak about Gooseberry pruning, but I think Mr. Laxton's remarks at the Fruit Conference last week were not far wrong. How often may one notice in a cottager's garden, Gooseberry bushes loaded with fruit, whereas in the neighbouring highly-kept gardens at the mansion, where the trees are annually pruned in a scientific manner, hardly a Gooseberry is to be seen! I have these last few years simply thinned out the shoots a little where too crowded, and by scaring the bullfinches, &c., with the gun, and syringing the trees twice with unslacked lime-water, I have always secured good crops. No doubt the non-pruning system would not do for growing show fruit; but good fruit in quantity is grown on this plan. The washing with lime-water

kills moss and insects, and thus helps to keep the trees in a healthy state. A coating of rotten manure should annually be given, which will maintain bushes in vigour for a surprising number of years. *W. K., Blackmoor.*

THE WEATHER IN KENT.—Since July 7, much rain, and showers of rain and hail together, accompanied by thunder, have occurred. A storm which came up suddenly on the 8th, and lasted for an hour and a half, flooded the gardens, and it was followed by a hail-storm, the hail laying for more than an hour. Some of the hailstones measured three-quarters of an inch in diameter, but not being so icy as is usually the case. No glass was broken, but the crops were much riddled, and the flower-beds wrecked for several days; but these last are now fast recovering their beauty. The thermometer, which fell 4° on that occasion, has not been so high since. The beds of Noble and other varieties of Strawberries, covered with hexagon netting, afforded a curious contrast of large red fruits against the covering of hail which lay on the ground all around. *W. Divers, Weirton House, Maidstone.*

SOCIETIES.

ROYAL HORTICULTURAL.

STRAWBERRY CONFERENCE, JULY 8.

Silver Banksian Medals.

To Messrs. Paul & Son, for Collection of Strawberries.

To Messrs. G. Bunyard & Co., for Collection of Strawberries.

Certificates of Merit.

To Mr. T. Laxton, for Strawberry White Knight and Scarlet Queen.

To Mr. W. Allan, for Strawberry No. 2, No. 3, No. 4, Sir J. Paxton, President, and The Countess.

To Mr. Edwin Amies, for Strawberry Laxton's Latest of All.

To Messrs. Paul & Son, for Strawberry Vicomtesse Héricurt de Thury, Sir J. Paxton, Pauline, Anguste Nicaise, President, and King of the Earlies.

To Messrs. G. Bunyard & Co., for Strawberry Oxonian, Countess, Lucas, Latest of All, Elton Pine, Anguste Nicaise, British Queen, and Dr. Hogg.

To Mr. J. Watkins, for Strawberry Vicomtesse Héricurt de Thury and Sir J. Paxton.

List of Awards.

FLORAL COMMITTEE.

Awards of Merit.

To *Centaurea cyanus nanus compacta*, Mr. Herbst.

To *Godetia White Pearl*, Messrs. J. Carter.

To *Paeony Mme. Emile Galle*, Messrs. Paul & Sons.

To *Veronica anomala*, Messrs. Paul & Sons.

To *Prunella Webbiana*, Messrs. Paul & Sons.

To *Rose Reine-Blanche*, Mr. B. Ladhams.

To *Pink The Rector*, Mr. E. Turner.

To *Mimulus cupreus Prince Bismarck*, Messrs. J. Laing & Sons.

To *Escallonia lomensis*, Messrs. J. Veitch & Sons.

To *Delphinium Robin Adair*, Messrs. Kelway & Sons.

To *Double Begonia Mrs. Falkner*, Messrs. H. Cannell & Sons.

Botanical Certificates.

To *Lilium maritimum*, Mr. T. S. Ware.

Commended.

To *Gaillardias strain*, Messrs. Kelway & Sons.

Medals.

To Messrs. J. Laing & Sons, for Collection of Hardy Flowers, Silver Gilt Flora.

To Messrs. Paul & Son, for Collection of Hardy Flowers, Silver Flora.

To Mr. T. S. Ware, for Collection of Hardy Flowers, Silver Flora.

To Messrs. Kelway & Sons, for Collection of Hardy Flowers, Silver Flora.

To Messrs. J. Veitch & Sons, for Collection of Hardy Flowers, Silver Flora.

To Messrs. Barr & Sons, for Collection of Hardy Flowers, Silver Banksian.

FRUIT COMMITTEE.

To Mr. T. Coomber, for Queen Pines, Silver Medal.

To Mr. J. Watkins, for Apples, Bronze Medal.

To Mr. J. Fitt, for Banana Ladies Finger, First-class Certificate.

Scientific Committee.

JUNE 23.—Present: Mr. D. Morris, in the chair; Mr. McLachlan, Dr. Müller, Rev. W. Wilks, Sir J. D. Llewellyn, Rev. G. Haslow, Hon. Sec.; Mr. C. A. Barber, and Mr. R. A. Rolfe, visitors.

Erecrescences on Willows.—With reference to the specimens brought by Mr. Blandford to the last meeting, and referred to Professor H. Marshall Ward for an examination of the tissues, he reported that there was no evidence of any fungus growth, and Mr. McLachlan added that there was also none of insects having ever been present. Hence the true cause of the hypertrophy could not be ascertained.

Papaver pilosum (?).—This plant having been referred to Kew, was ascertained by Mr. Baker to be *Papaver rupifragum* var. *atlanticum*, and is figured in the *Bot. Mag.*, t. 7107. It is a native of Morocco, *P. rupifragum* being a native of Andalusia. Mr. Wilks observed upon the fact that there are a great number of Poppies now in cultivation which require a careful systematic treatment.

Iris, Petals Variegated.—Mr. McLachlan exhibited three petals, half white and half purple, which appeared on a single plant of *Iris florentina*. The question was raised whether the plant was a white variety of *Iris germanica* reverted. It was referred to Kew for further consideration.

Scotch Fir and Larch attacked by Chermes.—Mr. R. Maker, of Yattendale Court, Newbury, forwarded specimen branches of these trees infested with species of chermes. The only remedy is the free use of paraffin spray. At Kew, Mr. Morris observed, they were obliged to cut down some trees growing in the midst of others; as from their height and crowded condition the spray could not be used effectually, and the only alternative is to destroy the infested trees.

Ash Wood Disease.—He also sent specimens of branches having the common cankerous-like hollow places on them. They were from an old tree 18 inches in diameter and a foot from the ground. The trunk and all the branches presented a similar appearance. They were referred to Professor H. Marshall Ward for further investigation. Mr. McLachlan observed that the Weevil *Hylesius Fraxini*, or else the larva of a moth *Myelos pinguis*, which feeds beneath the bark, might possibly have been the primary cause of the injury.

Cynochos chlorochilon (Klotzsch).—Mr. Rolfe exhibited what is apparently the male flower, as the column is very slender, and the pollen normally developed. This is a well-known garden plant. In addition he showed another form, being a larger flower with a short stout column, which is believed to be hitherto unrecorded, and is supposed to be the female flower of the same species. These two flowers appeared upon separate individuals imported from Caracas as *C. chlorochilon*. They flowered in the collection of M. A. Houjean de Lehaie, Membre de la Chambre des Représentants, Hyon (Mons), Belgium. The special interest attached to the present examples is the great similarity between the two sexes, a character also observed in *C. Loddigesii*, while in *C. ventricosum*, *C. pentadactylon*, and *C. Rossianum*, the male and female flowers are very dissimilar. *C. Egertonianum*, the male of *C. ventricosum*, is a familiar example.

Elm, with Coloured Wood.—A branching specimen in full leaf was exhibited by Mr. Morris. It was received many years ago at Kew from Van Houtte, under the name of *Ulmus* sp. *libero-rubro*. This is believed to be only a form of the Scotch or Wych Elm, *Ulmus montana*. The peculiarity possessed by the specimen consists in its having the wood immediately beneath the bark of a bright pink colour, which easily distinguishes it from the type. The exact nature of the colouring substance in this instance does not appear to have been investigated.

WOODBIDGE FLOWER SHOW.

The fortieth annual flower show in connection with the Woodbridge Horticultural Society was held, in fine weather, on Thursday 9th inst., in the beautiful Abbey Grounds, which were again placed at the disposal of the Committee by Captain J. R. Carthew. In the open classes there were five collections of forty-eight distinct varieties, and the 1st prize was awarded to Mr. F. Cant, the 2nd to Mr. B. R. Cant, the 3rd to the Rev. H. Foster-Melliar, of Sproughton. The last-named gentleman beat both these strong competitors in the next class for twelve Tea-scented and Noisette Roses, and the three prizes for six varieties only were

taken respectively by Mr. O. G. Orpen, of West Bergholt; Rev. H. A. Berners, and Mr. John Woods, Woodbridge. The National Rose Society's Silver Medal, for the best Rose in the open classes, was won by Mr. F. Cant, with a well-grown bloom of Victor Hugo.

Seven classes were reserved for amateurs, and in the first of these, for eighteen distinct varieties, the Rev. A. Foster-Melliard gained the 1st award from the Rev. H. A. Berners and Mr. J. Gurney Fowler, The Glebelands, Woodford, who were 2nd and 3rd respectively. The honours for twelves and sixes were about equally divided between the same gentlemen, with a 3rd prize going to Mr. Orpen; and in Mr. Gurney Fowler's dozen was found the Rose, for which was given another Silver Medal offered by the Rose Society. This was an absolutely perfect bloom, the best in the tent, of the variety Duchesse de Morney, of a delicate rose colour, with the reverse of the petals silvery. A Bronze Medal for the best H.P.'s grown by an amateur was awarded to Miss Penrice, Whitton House, Norwich, for specimens of Prince Arthur and Ferdinand de Lesseps.

Pot Plants.—Specimen stove or greenhouse plant, 1st, Major Howey. Orchids, four, 1st, Lord Rendlesham; 2nd, Mr. C. Whitfield King, Ipswich. Specimen Orchid, Lord Rendlesham. Exotic Ferns (tree Ferns excluded), 1st, Duke of Hamilton (gr., Mr. J. Best). Specimen Fern, Mr. J. E. Burness, Melton. Hardy Ferns, six, 1st, Mrs. T. W. Grimwood. Group of stove, greenhouse, or other plants, 1st, Mr. J. A. Burness; 3rd, Major Howey.

Among the fruit, Grapes and Strawberries made the best display, and from the prize list we cull the following:—Collection for dessert, eight varieties, 1st, Hon. W. Lowther, M.P. Peaches, 1st, Mr. A. E. Studd. Nectarines, 1st, Mr. A. E. Studd. Grapes, two black and two white, 1st, Mr. C. Whitfield King; three black, 1st, Miss Walford; ditto, white, 1st, Mr. J. A. Burness. Heaviest two bunches, Lady North. Melons, 1st, Mr. W. Whitmore, Wickham Market (gr., W. Spall). Best Westley Hall Melon, Mr. R. Burrell. Strawberries, eight varieties, 1st, Mr. F. Garrett; 2nd, Hon. W. Lowther, M.P. Strawberries, thirty-six, one variety, for weight, 1st, Mr. R. Steel, Woodbridge. Strawberries, thirty-six, one variety, for flavour, 1st, Mr. James Rose, Woodbridge. The Cottagers' exhibits were numerous and good.

BOSTON HORTICULTURAL.

JUNE 30.—This was the twentieth anniversary of a Society that caters for the people in a purely agricultural district, by providing an exhibition which, in addition to horticultural produce, includes also horses, dogs, poultry, and, indeed, domestic pets of all kinds; it is not, therefore, to be wondered at that the attendance was large.

Cut Roses are always a leading feature, but owing to the lateness of the season, they were sparingly produced. Messrs. G. & W. Burch, nurserymen, Peterborough, had the best twenty-four varieties, single blooms, staging fine fresh blooms in their usual excellent style; they were also 1st with twelve varieties. The best six Roses, the competition confined to amateurs, came from Dr. Clegg, of Boston.

The best stand of twelve varieties of stove and greenhouse cut flowers—a very good lot—came from Mr. Dolby, Boston; and he was also 1st with a stand of twelve varieties of hardy flowers. The collections in both these classes were highly creditable to the exhibitors; in the latter class, Mr. Nugold was a close 2nd. The best stand of wild flowers for table decoration came from Mr. T. Allen. It was charmingly arranged. Mr. T. Martin well deserved the 2nd prize. Baskets of wild flowers were very attractive, and some very fine fancy Pansies were shown in the class for collections of twelve blooms. Excellent double Pyrethrums in bunches of three blooms were shown by Messrs. Greenfield and Dolby, who were 1st and 2nd.

Specimen plants are not grown to a large size about Boston, but what were shown were in good condition. The best six came from Mr. G. Butler, gr. to T. C. Garfit, Esq., Boston; and Mr. T. B. Dolby, nurseryman, Boston, was 2nd. One specimen was an admirably grown example of the old *Trachelium caruleum*, not so much grown as it well deserves to be. Mr. J. Oldred had the best six Fuchsias, Mr. Dolby was 2nd; and the same exhibitors were also 1st and 2nd with tuberous-rooted Begonias. Mr. Dolby had the best six zonal Pelargoniums, and Mr. Nightscales, Sleaford, was 2nd. Mr. Dolby was 1st with six large-flowering Pelargoniums, well grown and bloomed. Mr. Dolby

was 1st in both classes for six Gloxinias and four Petunias; and Mr. T. B. Dolby, with three Lilies in pots, having *L. auratum*.

Foliaged Plants.—Mr. Butler had the best six specimens of Ferns; and Mr. J. Oldred was 2nd. The best *Coleus* came from Mr. Dolby, and the 2nd prize went to Mr. Nightscales. Lycopods were a capital feature; Mr. Oldred was 1st, and Mr. Butler was 2nd; unfortunately, an excellent piece of *Burseria aurea*, shown by the latter, was somewhat damaged, or he would have been placed 1st.

Fruit, owing to the season, was somewhat sparingly shown; and the prizes being small, do not attract leading growers.

Vegetables are remarkably well-grown about Boston, Mr. J. Jarnell had the best collection of six varieties, a very good lot indeed; and Mr. Dolby was 2nd; and in the classes for different sorts of vegetables there was a very good competition.

BIRMINGHAM BOTANICAL SOCIETY.

The annual meeting of the Birmingham Botanical and Horticultural Society was held on Tuesday, June 30, at the Botanical Gardens, Edgbaston. The Mayor (Alderman Clayton) presided.—The fifty-ninth annual report stated that the number of members last year was 922, as compared with 919 in 1889, 931 in 1888, and 1,065 in 1887. The committee regretted that the number of shareholders and subscribers shows practically no increase over that of 1889; a substantial increase in this number was still necessary before a repetition of a credit balance on the year's accounts could be confidently anticipated. The general accounts showed an excess of income over expenditure of £89s 2d.

The Mayor, in moving the adoption of the report, said that the number of admissions seemed to show that those beautiful gardens were appreciated not only by the members, but by the general public. The gardens were in excellent condition, and the new corridor was an addition on which he sincerely congratulated the committee. It had added greatly to the attractions of the place, by furnishing an entrance from the road to the conservatories that was dry in all weathers. The Rose show certainly was magnificent, and the fact that it resulted in a gain instead of a loss was another subject for congratulation. As to the Sunday question, he thought that the committee had rightly interpreted the general feeling of the subscribers against the proposal.

Mr. A. H. Griffiths seconded the motion, which was carried unanimously.

The officers and committee were re-elected, and votes of thanks having been passed to them and to subscribers and donors, the proceedings closed with a vote of thanks to the Mayor.

ROSE SHOW AT BURFORD LODGE.

By the kindness of Sir Trevor Lawrence, Bart., M.P., the annual show of the Brockham Rose Association was held in the grounds of Burford Lodge, on Wednesday, July 1, a fine band and various accessories conducive to enjoyment being thoughtfully provided by the host.

For twenty-four Roses of any kind, 1st, A. Tate, Esq., Downside, Leatherhead, who won the Gold Medal of the National Rose Society with splendid blooms of Madame Gabriel Luizet, A. K. Williams, Countess of Oxford, Duchess of Bedford, &c. C. E. Cuthell, Esq., of Box Hill, was a good 2nd, with good blooms of Ulrich Brunner, A. K. Williams, Marquise de Castellane. Lady Lawrence, Burford, Dorking, highly commended for a bright and fresh-looking collection.

Twelve Teas or Noisettes, single trusses.—Mr. Tate was again 1st with a very fine even lot of blooms; Rev. A. Cheales, Brockham, was a good 2nd; Mr. Cuthell, who was close behind, was highly commended.

Six any kind, triplets.—Mr. Tate was 1st, with some fine blooms; Rev. A. Cheales, 2nd. Mr. Cuthell and R. H. M. Praed, Esq., were the other exhibitors.

Twelve, any kind, single trusses.—Mrs. Perkins, Holmwood, was 1st, with very fine and even blooms, and was awarded the other Gold Medal of the N.R.S. E. Horne, Esq., Reigate, was 2nd, Hon. Dudley Ryder 3rd, amongst whose lot was chosen the Comtesse de Nadaillac as the finest Rose in the show. Other exhibitors in this class were R. H. M. Praed, Esq., Mickleham; F. T. Wollaston, Esq., Reigate; and Mrs. Leopold Seymour, Brockham.

Teas or Noisettes, single.—Mrs. Perkins, 1st; F. T. Wollaston, Esq., 2nd.

Four, any kind, triplets.—F. T. Wollaston, Esq., 1st; Mrs. Perkins, 2nd.

Six, any kind, single trusses.—Mrs. Hatch was 1st, with all splendid blooms. Miss Dorothy Nestfield and Mrs. Poland were placed equal 2nd, with some very fine blooms.

Four Teas or Noisettes, single trusses.—Mrs. Poland, 1st.

Six one kind, Teas or Noisettes (single).—E. Cutbell, Esq., with Marie Van Houtte, 1st; W. Thompson, with Souvenir d'un Ami, 2nd.

Six same kind, not Teas or Noisettes (single).—Mr. Tate 1st with Madame Gabriel Luizet, very fine; Mr. Cutbell, 2nd, with Charles Lefebvre.

Collections of not less than eighteen and nine, in bunches of three trusses.—Rev. A. Cheales for eighteen, and Mrs. Seymour for nine.

Dinner-table decoration, any flowers.—Miss Dorothy Nestfield, 1st; Mrs. Bonecke, Box Hill, 2nd; Miss Tate, highly commended.

Baskets of Roses, with Ferns and Foliage.—Miss Blake, 1st; Miss Tate, 2nd; Miss Cladys de Cetto, Miss Dorothy Nestfield, Miss Lawrence.

Button-holes.—Miss Dorothy Nestfield, 1st; Miss De Cetto, 2nd.

Messrs. Paul & Son, Old Nurseries, Cheshunt, showed the new Bourbon Rose, Mrs. Paul, and was much admired; and some good blooms of Bruce Findlay, John D. Pawle, Souvenir de S. A. Prince, Comtesse B. de Blacas, Viscountess Folkestone, Madame Renabury, Marchioness of Lorne, and the new hybrid Tea, Progress.

Mr. Appleby, Dorking, showed a box of good blooms H.P., a very fresh lot; and twenty-four Tea Roses, also very good. He also sent a very good seedling Rose, unnamed, bright red, very near to General Jacqueminot. Mr. Appleby also supplied the decorative plants for the show, including which were some finely-grown *Caladiums*.

CHERTSEY, WALTON, AND WEYBRIDGE.

JULY 2.—The best show yet held by these combined Societies was that which took place on July 2 in Ashley Park, Walton-on-Thames. The principal feature was the plants. For eight stove or greenhouse specimens, Mr. J. Reeves, gr. to Mrs. Vachell, Outlands Park, was an easy 1st; Mr. J. W. Reed, gr. to E. Pettit, Esq., Broadwater, Outlands Park, 2nd. *The Gardeners' Magazine* gave a Silver Medal in addition to the 1st prize in this class, for cultural skill.

For six flowering plants, Mr. J. W. Reed was the only exhibitor, but well deserved the award given him of first honours; and he was also 1st for specimen flowering plants.

Mr. Cook, gr. to J. S. Sassoon, Esq., Ashley Park, Walton, was the winner in the class for six foliage plants. Mr. Reeves staged the best exotic Ferns and *Caladiums*. Mr. Millican, gr. to H. Cubbett, Esq., Walton-on-Thames, the best hardy Ferns. Tuberos Begonias were superbly shown by Mr. W. Stedman, gr. to Miss Verity, Weybridge. Fuchsias equally so by Mr. Reed, while all other kinds of plants were represented in the best condition.

Ample provision was made for groups arranged for effect. Mr. Reeves arranged the best group, Mr. Reed followed close. In the smaller class, Mr. Millican secured leading prize with one which commended itself to all lovers of choice arrangement.

Roses made a good show, so numerous were they staged. For twenty-four varieties, single trusses, Mr. J. Sparrow, gr. to the Rev. A. Bramwell, Barrow Hill, Chertsey, led with an even lot of blooms, fresh, and of good colour. Mr. A. Hunt, gr. to W. L. Cohen, Esq., Englefield Green, Egham, 2nd. Ten competed in the class for twelve blooms in as many varieties. Mr. Reed had the premier stand, Mr. Sparrow 2nd. Stove and greenhouse cut flowers, herbaceous varieties as well as Geraniums, were well shown.

Fruit, though not large in numbers, was good in quality. For six dishes, Mr. T. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey, was premier winner with an even lot, as also was he for two bunches of black Grapes. Mr. Hunt took a similar position for white Grapes in two bunches, with a splendid Foster's Seedling. Mr. Reed followed with Muscat of Alexandria. Mr. Sparrow had the best Melons, both scarlet and green flesh.

Vegetables were a very good lot. Mr. Sparrow, 1st, for eight varieties, staging choice produce. Mr. Reed had the best Tomatos—Perfection. Non-competitive exhibits added considerably to the exhibition.

Groups of plants of a miscellaneous character were sent by Messrs. B. S. Williams & Son, Paradise Nurseries, London; Messrs. J. Laing & Son, Forest Hill; and Messrs. Reed & Sons, Norwood Nursery. Roses in large numbers came from Mr. J. Jackman, Woking.

CHISWICK HORTICULTURAL.

The eleventh summer show took place on the 2nd inst. in the Royal Horticultural Society's gardens, and may be regarded as a success in every way.

Much interest centred in the introduction of a new class in this year's schedule, viz., for a group of Gloxinias, arranged with Palms and Ferns, occupying a semi-circular space on grass, not exceeding 100 square feet. This class proved to be one of the great features of the show, constituting, as it did, a most effective and pretty display. There were four competitors, and the post of honour was worthily accorded to Mr. A. Meulon, gr. to J. B. Hilditch, Esq., Argyll House, Richmond, for a really beautiful arrangement, the Gloxinias comprising some grand, freely-flowered examples. He was very closely followed by Mr. Thomas Bones, gr. to J. Donaldson, Esq., Tower House, Chiswick, who had flowers of extremely fine quality, the following seedlings of his own raising being very conspicuous, Eclipse, Robusta, Miss A. Donaldson, and Mrs. S. A. Lee; 3rd, Mr. A. Wright, gr. to E. H. Watts, Esq., Devonhurst, Chiswick, a well arranged lot—highly commended.

Messrs. W. Fromow & Sons, Sutton Court Nursery, Chiswick. This firm took 1st prize in the open class for a most effectively-arranged group of miscellaneous plants; whilst a similar distinction was bestowed upon Mr. A. Wright, for a beautiful arrangement in the gardeners' class.

Stove and greenhouse plants were also successfully shown by Mr. Wright, he having, amongst other good examples, a particularly well-flowered specimen of *Clerodendron Balfourianum*.

First honours were secured by Mr. C. J. Waite, gr. to Colonel W. P. Talbot, Gleohurst, Esher, for dinner-table plants. Gloxinias were shown in capital form by Mr. A. Jones, gr. to E. Hyde, Esq., Castle Bar Hill, Ealing.

Pelargoniums were well shown by Henry Little, Esq., Baronshalt, Twickenham; as also by Mr. J. Wiggins, manager to Mr. D. Baldwin, Hillingdon Heath, the latter collection being edged with some plants of a beautiful new golden tricolor, named Harbour Lights, a decided beat on Mr. H. Cox.

Cut Flowers.—The handsome Silver Challenge Cup, value 25 guineas, for seventy-two Roses, was won by Mr. B. R. Cant, St. John's Street Nursery, Colchester, with a superb lot of blooms; 2nd, Mr. Charles Turner, Slough; 3rd, Messrs. Paul & Son, Cheshunt.

Three Stands or Vases of Flowers and Foliage suitable for Dinner Table Decoration.—Mr. J. R. Chard, Stoke Newington, won the premier position with extremely beautiful exhibits.

In bouquets and other cut flower arrangements, Mr. E. Chadwick, gr. to E. M. Nelson, Esq., Ealing; Miss L. Hudson, Gunnersbury, Miss Prewitt, Hammersmith, and Messrs. Perkins & Sons, Coventry, successfully competed.

Fruit.—Fruit was not abundant, but it was well shown by Mr. G. Clinging, gr. to W. Greenwell, Esq., Caterham Valley; Mr. T. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey; Mr. C. J. Waite, Mr. W. Ford, gr. to W. H. Ellis, Esq., Hounslow, Mr. E. Chadwick, and others.

Mr. W. Palmer, Surrey, staged a fine pair of Sutton's Triumph Melon, not for competition.

In *Vegetables*, Mr. C. J. Waite was, as usual, well to the front. He staged a really grand dish of the Duchess of Albany Peas, with pods nearly 6 inches in length. Mr. D. White, gr. to Mrs. F. Watson, Red-lee, Is'worth, also showed successfully in this department. The cottagers made a good display of flowers, fruit, and vegetables.

Miscellaneous.—Amongst these exhibits, not for competition, specially deserving of mention are:—A fine group of hardy ornamental plants and cut Roses, from Messrs. Lee & Son, Hammersmith; herbaceous plants and cut flowers, from Messrs. W. Cutbush & Son, Highgate; a most interesting group of Cacti, from Messrs. James Carter & Co.; and attractive groups of foliage and flowering plants, from Mr. M. T. May, gr. to the Marquis of Dute, Chiswick House, and from Mr. Reynolds, gr. to the Messrs. de Rothschild, Gunnersbury Park, Acton.

GLOUCESTER ROSE SHOW.

The fourth annual exhibition of the Gloucestershire Rose Society was held on Tuesday, 7th inst., in the Corn Exchange, and considering the recent wet weather, the quality of the blooms staged was better than anything that might have been expected. There were entries from all the principal Rose-growers in the country, and the thirty-two classes were well filled. In the nurserymen's division, the principal prize winners were B. R. Cant, Colchester; G. and W. H. Burch, Peterborough; Jeffries & Son, Cirencester; G. Prince, Oxford; and J. Mattock, Oxford.

In the open classes for amateurs, Dr. S. P. Budd, of Bath, took three 1sts and the Silver Medal of the National Rose Society for the best Tea or Noisette. The Rev. J. H. Pemberton, of Havering, Essex, took a 1st, a 2nd, and the Silver Medal for the best Hybrid Perpetual. Other winners were T. Hobbs, Bristol, 2nd and 3rd; and W. Drew, Ledbury, 1st.

In the classes for Gloucestershire amateurs, W. Conway Jones, T. Thorpe, and T. A. Washbourn, of Gloucester, and T. Hobbs, of Bristol, were most successful; Mr. Washbourn also securing the two Silver Medals for the best Roses in the section.

In the open classes, the 1st were taken by G. Prince, B. R. Cant, Dr. Budd, and Cranstons Limited, Hereford.

T. Burcher, of Barnwood, Gloucester, took the Silver Medal for the best Rose in the cottagers' division.

In the class for gentlemen's gardeners of the county, J. Sowray, gardener at Ighnam Court, Gloucester, was 1st.

For arrangement of Roses for table decorations, J. Mattock, of Oxford, was 1st in the open class; and W. M. Baker, Hasfield Court, Gloucester, 1st in the amateur's class.

ENFIELD HORTICULTURAL.

JULY 8.—This society was re-formed a few years ago, and this was the fourth exhibition, and it was held in the grounds of Chase Side House, a somewhat old-fashioned but admirably-kept place, rich in old Roses trained over archways, and other features.

Miscellaneous contributions proved very attractive. Messrs. R. and G. Cutburt, nurserymen, Southgate, staged a collection of plants of a highly creditable character, and Messrs. W. Cutbush & Son, nurserymen, Highgate, the same; while Mr. William Rumsey, nurserymen, Waltham Cross, had ten boxes of excellent cut Roses, and Messrs. Paul & Son, Cheshunt, a box of twelve blooms of their new Bourbon Rose Mrs. Paul, and some plants of a new Carnation of the Malmaison type, named Triomphe de Paris, bright carmine, very distinct in colour, to both of which Certificates of Merit were awarded.

Stove and Greenhouse Plants.—The best six came from Mr. May, gr. to H. J. Adams, Esq., Roseneath, Enfield, who had *Stephanotis floribunda*, *Allamanda Hendersonii*, *Ixora Williamsii*, and *Boegainvillea glabra*. Mr. E. Ayling, gr. to A. J. Hollington, Esq., Enfield, was 2nd, his chief specimen was a good one of *Clerodendron Balfourianum*. The best specimen plant in flower was a good piece of *Stephanotis floribunda* from Mr. H. J. Adams; Mr. Hopkins, gr. to H. C. B. Bowles, Esq., Enfield, was 2nd, with *Plumbago capensis*. The best specimen Orchid was a capital piece of *Cattleya Mendeli* from Mr. Ayling; Mr. H. J. Adams was 2nd, with a capital piece of *Cypripedium Lawrenceanum*.

One of the leading features of the show was the splendid specimens of *Achimenes*, perhaps as good as any to be found in the country. Mr. Ayling was 1st, and Mr. H. J. Adams 2nd, both with admirably grown and bloomed plants. Mr. J. T. Wall, Winchmore Hill, had the best six tuberous-rooted *Begonias*, well grown and bloomed; Cockscombs were very fine also. Mr. T. King, gr. to George Spicer, Esq., was 1st; and Mr. Ayling 2nd. *Fuchsias* and zonal *Pelargoniums*, shown in sixes and threes, greatly helped the display, and so did double *Petunias*, some capital plants being staged.

Groups of plants arranged for effect made a good feature along the sides of one of the tents. Mr. Ayling had the best group, including *Orchids*, *Cattleyas*, *Oncidium macranthum*, *Miltonia vexillaria*, and other things being remarkably good. Mr. H. J. Adams had the best group, from which *Orchids* were excluded.

Mr. Ayling had the best six foliaged plants—a very good lot; Mr. Hopkins was 2nd. Foliaged *Begonias*, *Coleus*, *Caladiums*, and *Lycopersium* were all shown in good form. The best specimen was

a fine piece of *Pandanus Veitchii*, from Mr. Hopkins. Mr. Ayling coming 2nd, with *Corypha australis*. The best six stove and greenhouse Ferns came from Mr. Ayling—a very good lot; Mr. Pulling, gr. to Mr. Twells, was 2nd. Plants for table decoration were numerous, and very good.

Cut flowers included Roses. Cut flowers in twelve bunches, Mr. Ayling taking the 1st prize, with some superb *Orchids*; Mr. H. J. Adams was a capital 2nd. Bunches of zonal *Pelargoniums*, double and single, and hardy herbaceous flowers, shown in collections of twelve bunches, were capital.

Fruit was limited in quantity, and included Grapes, Cherries, Peaches, Melons, &c. Some good Strawberries were shown.

Vegetables, in the open class, as well as those shown by amateurs and cottagers, were numerous; and there was a fair competition for the special prizes offered by Messrs. Sutton & Sons, James Carter & Co., and C. Sharpe & Co.

Among the special prizes offered, was one for the best short essay on the structural and other peculiarities of any plant, a living specimen of the subject selected to accompany the paper. That from Mr. May, gr. to H. J. Adams, Esq., received the 1st prize, the subject being *Sarracenia purpurea*, a short crisp essay accompanying it. Mr. Hopkins was awarded the 2nd prize, taking the Date Palm, *Phoenix dactylifera*, as his subject.

EDINBURGH BOTANICAL.

The last meeting of the session was held at the Royal Botanic Garden, on July 9, Mr. Lindsay, President, in the chair.

W. B. Boyd, Esq., of Faldonside, Melrose, sent a large quantity of cut flowers of alpine and herbaceous plants, including fine examples of *Cypripedium spectabile*, *Delphinium grandiflorum*, *Heuchera sanguinea* (dark var.), *Lithospermum granifolium*, *Paeonies*, *Irises*, &c.

G. Potts, Esq., Fettes Mount, Lasswade, exhibited the following:—*Saxifraga coryleoides* (dwarf variety found by him in Norway); large leaf of *Rodgersia podophylla*, &c. Amongst many plants in pots from the garden may be mentioned:—*Aquilegia pyrenaica*, *Aceras anthropophora*, *Campylopus G. F. Wilson*, *Loasa lateritia*, *Silene quadrifida*, *Sibthorpia europaea variegata*, *Veronica diosmifolia*, *Saxifraga mutata*, *Inula Hookerii*, *Chrysanthemum leucanthemum* (three distinct vars.), *Geum strictum*, &c. Mr. Alexander H. Gibson contributed a paper on the Phanerogamic Flora of St. Kilda, and exhibited specimens of 130 species he had collected during a stay of five weeks on the island. In some cases, e.g., Honey-suckle, only a single plant existed. The absence of fruit on some plants was noted and attributed to the absence of insects, viz., wasps, bees, and butterflies. Mr. Thomas Berwick, St. Andrews, gave a paper on the cotyledonary glands of *Rubiaceae*. In over thirty species, representing eight genera, he had found glands at the bases of the cotyledons before germination. The genera studied were—*Asperula*, *Borreria*, *Callipeltis*, *Crucianella*, *Galium*, *Thyllis*, *Spermacoce*, and *Vaillantia*.

Dr. John H. Wilson reported the occurrence of *Geum strictum*, Ait., from the woods at Blair-Adam, where it had become naturalised in abundance. Dr. Wilson also drew attention to a remarkable instance of prolongation of the flowering period of *Tritonia* (*Montbretia*) *Wilsoni*, Baker, flowers having continued to be borne on one inflorescence for seven and a half months.

REPORT ON TEMPERATURE, &c., ROYAL BOTANIC GARDEN. BY MR. LINDSAY.

During the month of June, the principal feature of the weather was its excessive dryness; and, as the absence of rain followed a long drought, lasting throughout the whole of the past spring, the marvel is that its effects have not been more serious on vegetation. A good fall of rain took place on the 26th, after which all danger from drought was at an end. Rain fell on seven days during the month. No frost occurred; the lowest night reading of the thermometer was 37° on the 10th, and the highest 56° on the 18th; the lowest day reading was 54° on the 1st, and the highest 81° on the 29th of the month. The foliage of all forest and ornamental trees is now complete, except several North American trees, such as Tulip tree, Liquidambar, Catalpa, and deciduous Cypress, which are still far behind. Conifers are developing fine clean growths, *Piceas* and *Abies* particularly so. The different species of *Pinus* are flowering most profusely this season. The golden-coloured varietal

of Yew are very bright, and extremely well-coloured. Herbaceous plants, though late in flowering, are still very fine. The early spring-flowering bulbs, &c., have ripened a fair supply of good seeds.

The rock garden was most attractive during June; 359 species and varieties of plants came into flower, besides a large proportion of those which commenced to flower in May, and continued to flower in June. A few of the more interesting plants were:—*Aciphylla squarrosa*, *Allium M'Leanii*, *Androsace foliosa*, *Anthyllis erinacea*, *Arum palæstinum*, *Campylobasis abietina*, *Cynoglossum nervosum*, *Cypripedium parviflorum*, *Dianthus "Michael Foster,"* *Eckianthus himalaicus*, *Erigeron aurantiacus*, *Edrianthus pumilius*, *E. serpyllifolius*, *Geranium anemonefolium*, *G. armenum*, *Haberlea robusta*, *Heuchera sanguinea*, *Iris Cengialti*, *Linum acuminatum*, *Meloniopsis aculeata*, *Mimulus Bernettii*, *Nardostachys Jatamansi*, *Olearia furfuracea*, *O. macrodonta*, *Orchis foliosa*, *O. maculata superba*, *Pentstemon humile*, *P. Menziesii*, *Polemonium flavum*, *Primula reticulata*, *Ramondia pyrenaica alba*, *Rhododendron ferrugineum album*, *Saponaria ocymoides Loderii*, *Saxifraga valdensis*, *Trifolium uniflorum*, *Verbascum olympicum*, *Veronica amplicaulis*, *V. Bidwellii*, *B. anomala*, *B. luifolia*, &c.

REPORT FOR JUNE, BY MR. BULLEN, BOTANIC GARDEN, GLASGOW.

This was an unusually dry month, but nothing like summer weather was experienced until the 9th, when the temperature began to increase. Although we had a considerable duration of sunshine, the mean temperature for the month was low, owing to the continued breezy north-east winds. June 9 is recorded here as being the first day of summer, but no really hot summer weather was experienced until the 19th. From that date to and including the 25th, the sun thermometer registered from 93° to 98°, and that in the shade from 70° to 76°. No rain worthy of mention fell until the 26th, when such plants as had not been forced into premature bloom grew away vigorously. The latter days of the month were cloudy, and mostly cold. Outdoor plants are a fortnight behind their usual blooming season.

AYLESBURY HORTICULTURAL.

JULY 9.—Aylesbury can fairly claim to have one of the oldest horticultural Societies in the kingdom, for it was established in 1822, and it is said to have held an annual exhibition ever since. The one for the present year was held in the Corn Exchange, and scarcely fell behind any preceding one in point of quality.

The members of the family of Rothschild, a number of whom reside within short distances of Aylesbury, offered special prizes. Mr. Leopold de Rothschild for best collection of twelve dishes of fruit: the only exhibitor was Mr. Robins, gr. to Colonel E. D. Lee, Hartwell House—who had a very good lot indeed—Grapes, Peaches, Nectarines, Strawberries, &c. Lord Rothschild, for three bunches of black Grapes: Mr. Shrimpton, gr. to Lady A. de Rothschild, 1st, and Mr. W. Deacon, gr. to H. R. Lambton, Esq., 2nd, both with Black Hamburgh; and also for three bunches of white, and here Mr. Deacon was 1st with superb Duke of Buccleuch, Mr. Robins being 2nd with the same.

Mr. Alfred de Rothschild's special prize for the best collection of plants, arranged for effect, brought a good competition; and so did his lordship's special prizes for the best collection of plants, fruit, and flowers arranged upon a table.

The President of the Society, the Hon. Walter Rothschild, gave prizes for six double zonal Pelargoniums, which was won by Mr. John Walker, nurseryman, Thame, with some admirable specimens; and with six single-flowered varieties, Mr. Walker was also 1st. Mr. Joan Mattock, nurseryman, Headington, Oxford, was 1st, with six tricolor zonal Pelargoniums, staging some large, well-grown, and finely-coloured specimens, Mrs. H. Cox and Dolly Varden being grandly grown and coloured. The President's prize for six stove and greenhouse plants was won by Mr. Blake, gr. to H. Cazenove, Esq., who had all foliated plants. In addition, Lord Rothschild and his son offered special prizes for the best collection of stove and greenhouse plants, Mr. J. Shrimpton taking the 1st, and Mr. Smith, gr. to Earl Temple, the 2nd prizes. Special prizes for various subjects were also given by Baron Ferdinand de Rothschild, M.P., Mr. H. Cazenove, and others. Achimenes in sixes were well shown by Mr. Gulliver, Aylesbury, and Mr. Robins; and Mr. Robins had the best six Gloxinias.

The special prizes for thirty-six varieties of Roses fell to Messrs. Mattock and Walker, who were severally 1st and 2nd. Mr. Walker also had the best collection of six bunches of florists' flowers.

Vegetables were a good feature, for the district is famous for its fine growth of these. Special prizes were offered by Messrs. Sutton & Sons, E. Webb & Sons, Daniels Bros., and James Carter & Co., all of which brought a good competition.

In the cottagers' department there was a large and generally good display of vegetables.

THE FRUITERERS' COMPANY.

THE Lord Mayor presided on Monday, 13th inst., at the Mansion House over a meeting in connection with the Fruiterers' Company, for considering what further steps should be taken "For the promotion of Fruit Culture in our homesteads and cottage gardens." There was a large attendance, among those on the platform being the Baroness Biddett-Countess, Mr. Chaplin, M.P., Lord Egerton of Tatton, Alderman Sir J. Whitehead (Master of the Fruiterers' Company), and Lady Whitehead, and Colonel Sir Nigel Kingscote.

Alderman Sir J. Whitehead read letters from the Duke of Norfolk, the Duke of Westminster, Lord Derby, Lord Stanhope, Lord Ravensworth, the Dean of Rochester, Sir Trevor Lawrence (President of the Royal Horticultural Society), Sir James Paget, Mr. Charles Howard, Mr. De Laune, Lord Brougham, and Lord Coventry, all of whom wrote regretting their inability to attend the meeting, and expressing warm sympathy with its object.

The Chairman stated that the meeting was the first fruit of the movement set on foot during the renowned mayoralty of his predecessor, Sir James Whitehead—the first fruit of his energy and determination that fruit-growing in England should receive that attention which it deserved.

Mr. Chaplin, in the course of his remarks in moving the first resolution, said: We live in times when one of the great interests of this country in particular—I refer to the agricultural interest—has of late years been most sorely tried. I hope, and I believe, that at all events we have passed through the worst, and that there are happier and brighter times in store for us in the future; but this time of trial through which we have passed, I am bound to say, will not have been altogether without some compensating results, if it should have had the effect—as I think it will have, and as, indeed, I think it has had—of sharply directing our attention to the agricultural system which we have pursued in this country for so many years, and to the possibility of developing and, perhaps, to some extent diverting it into new and other channels for the future. The great staple of our agricultural industry in this country in the past has been the production—to describe it very roughly—of bread and meat, but the producers of bread and meat during the last ten or fifteen years have fallen, more or less, on evil times. They have been subjected to a sharpness of foreign competition unknown in former years, and which to the men of that generation would have been entirely unexpected; and it behoves us to consider, with all the care we can, whether there are not other means by which this great industry may be supplemented in the future. I cannot help thinking that in more than one direction, and more particularly within the domain of what is known as *la petite culture*, there are very considerable openings in which we may find, not substitutes, for that is far from my mind at the present moment, but useful adjuncts to the agricultural system of this country. Take the subject of dairy farming, there is much that still remains to be accomplished. Last year we imported dairy produce to the value of no less than £18,500,000, or more than the whole of the value of our Wheat crop, which used to be the great staple of our industry; I believe it is no exaggeration to say, that by far the greater part of these imports might be produced perfectly well in our own country. We import into this country every year eggs to the value of no less than £3,400,000; surely, it would not be a very great thing if we were to make an effort in the future which should enable us to produce this £3,400,000 worth of eggs instead of importing them. Then I turn to that branch of industry in which all of you in this hall are specially interested; and here I own that I speak with somewhat less of confidence than I have spoken up to now, because I am reminded of how greatly the success of fruit cultivation in this country depends upon climate, and climate appears to be the one thing of all others

upon which it is impossible to depend in England. Still, there remains the fact that we do import very large quantities of fruit annually from abroad, and much of it comes from countries like Canada, where, at all events, their climate is no better than our own. The total value of our imports of fruit last year was no less than £4,319,000, and that showed an increase of nearly £500,000 upon the amount which was imported in the previous year; but a very considerable part of this increase was made up of fruits which are not produced, and which are not capable of production in this country. Our imports of fruit may be classed generally speaking, under four heads. We import of Apples £800,000, of Nuts £600,000, of Oranges and Lemons no less than £1,800,000, and then we import a further £1,800,000 worth of other fruits which are classed in the returns under the name of unenumerated fruits. Of these unenumerated fruits, probably one-fourth in value consists of fruits grown in England. The others are fruits which we could not produce in this country. Adding this one-fourth to the amount for Apples, I shall probably be within the mark in saying that we import foreign fruits to the value of £1,200,000 annually which we could produce, if we chose to produce them, in this country. It is very gratifying to find already that a considerable move has taken place throughout the country in this respect, for I see from the latest return which we possess at the Board of Agriculture that in the year 1890 as against the year 1889 there has been an increase of 2408 acres in the country which are devoted to orchards and the growing of Apples and Pears. Again, I find with respect to small fruits that in 1890, compared with 1889, we have an increase of 4301 acres devoted to the growth of small fruits. Strawberry farming, also, is undoubtedly on the increase, and is becoming rapidly one of the important industries of the country. A great deal has to be done in the matter of agricultural education. The development of agricultural education requires very considerable funds, and very large funds have been recently devoted to that purpose. They have, however, been given to the County Councils of the country, and not to the Board of Agriculture; and what I want to point out is this—that it is rather to the County Councils than to the Department over which I have the honour to preside, that we must look for that development of agricultural education in the future. I am informed, though I speak with great deference in the presence of experts like my friend on this subject, that the selection of soil is a matter of the greatest importance; that the selection of plants is even of more importance; and, as I have pointed out already, climate has a great deal to do with it. Then, I am told that, with respect to orchards and the cultivation of Apples and Pears, careful attention to pruning is a matter of the very first importance. There is another point to be considered, the ravages of insects, and upon that subject I do think that we have been successful in the Agricultural Department—I hope it is the case—of conveying during the last year or two, a great deal of information to the general public which was not always forthcoming before. Part of the movement, which it has been my pleasure to chronicle to you this afternoon—part of the increase in the orchards and in fruit growing in this country—has been due to the initiation of the Fruiterers' Company. As an adjunct to the agricultural interest, I cannot doubt that it will be most useful and beneficial. It will add something also, I hope and believe, not only to the pursuits, but also to the happiness and comfort of the homes of our cottagers and working-classes. In that direction I hope it will be pressed, and that every means will be adopted of bringing home to them the information that will be useful, and which will enable them to cultivate their small gardens and allotments. This is a question which is becoming every day more and more important, because in the last two or three years there has been an enormous increase, which I hope is progressing, in small allotments of land placed at the disposal of the labouring classes. As far as I am concerned, I wish this movement God speed. I hope it will go on and prosper, as I cannot doubt that it will do, under the auspices with which it has been begun; and I venture to say this—that among all the great, useful, and beneficent works which, without number, have from time to time been inaugurated under the chief magistrate of the greatest city of the world, there are few, if any, I believe, more entirely deserving of our support than that which we are met to promote this afternoon. I now propose the following resolution:—"That in the opinion of this

meeting, vigorous efforts should be made to restore the orchards and to promote the extension of hardy-fruit cultivation in our homesteads and cottage gardens, and that the Lord Mayor be invited to open a subscription list with the object of maintaining the necessary funds to enable the company to carry out their purpose."

Lord Egerton of Tatton seconded the motion. As an economical question, he regarded the subject as of importance in these days.

GARDENERS' ORPHAN FUND.

THE Rose Fair and Floral Fête, in aid of the Gardeners' Orphan Fund, which was held at the Crystal Palace on Wednesday last, instead of the show formerly held in the Flower Market was, we are pleased to learn, very satisfactory in all respects. The attendance was large, and the Floral display extensive, groups of plants and cut flowers &c., being arranged by many of the leading nurserymen, while Roses in profusion were offered for sale. A rectangular bank of many thousands of cut blooms surrounding a group of Palms, &c., was arranged in the centre transept, the flowers being the gift of the following growers:—Messrs. J. Carter & Co., Forest Hill; H. Cannell & Sons, Swanley; F. Cant, Colchester; H. B. May, Edmonon; Wm. Paul & Son, Waltham Cross; J. Cheal & Sons, Crawley; J. Laing & Sons, Forest Hill; W. Fromow & Sons, Chiswick; Dickson & Sons, Belfast; E. F. Such, Maidenhead; G. Prince, Oxford; W. B. Smale, Torquay; Maurice Young, Godalming; C. Turner, Slough; W. Rumsey, Waltham Cross; Dicksons, Limited, Chester; G. W. Piper & Sons, Maresfield; Keynes, Williams & Co., Salisbury; J. Peed & Sons, Norwood; J. Jellies & Sons, Cirencester; Messrs. J. Smith, Mentmore Gardens, Leighton Buzzard; W. H. Divers, Ketton Hall Garden, Stamford; Rose, Lockinge Park Gardens; Cummins, Carshalton, and G. Wythes, of Sion Gardens, Brentford, were also contributors in this section, and it must be a source of gratification to these gentlemen to know that their Roses found a ready sale in the evening, and that the Fund will benefit accordingly.

There were, moreover, other stalls and stands where plants, fruit, and flowers were on exhibition or sale. Mr. H. B. May sent an extensive collection of Ferns, which made a very pleasing relief to the colours of the Roses. Messrs. J. Peed & Sons had arranged an effectual collection of finely grown foliage plants; while Caladiums, &c., came from Mr. J. R. Box, of Croydon. Messrs. B. S. Williams & Sons, Holloway, sent a large lot of miscellaneous plants. A collection of Cacti and finely flowered Petunias from Messrs. Carter attracted notice.

Messrs. Barr & Sons sent a large lot of cut herbaceous flowers, as did also Messrs. J. Cheal & Sons, and Messrs. Veitch, of Chelsea, who also had fine show blooms of Roses. Mr. Chard, Stoke Newington, arranged effective table decorations, using his arches which were covered with Roses chiefly. Messrs. J. Laing & Sons had a brilliant display of Begonias, and from Messrs. Reid & Bornemann, Sydenham, came a stall of fruit and flowers for sale, some decorative arrangements of Roses being very fine; goods for sale were also sent by Mr. Williams, of Lewisham, while Strawberries were the gift of Messrs. H. Cannell & Sons, G. Bunyard & Co., and others.

The receipts for cut flowers amounted to about fifty pounds.

Among the special attractions of the day, one of the most popular was the cricket match—The Seedsmen v. Gardeners of England (playing fourteen on each side)—which resulted in a victory for the latter after some close play. The game was commenced at 10 o'clock by the Seedsmen, under Mr. C. H. Sharman; the gardeners being captained by Mr. E. Molyneux. The scores were as follows:—

Gardeners.

Battell, c. Sampson, b. E. Pollard, 11; Cripps, c. F. Pollard, b. Hurst, 2; Hathaway, l. b. w., b. Hurst, 3; Cawer, run out, 0; Do, b. Pugh, 14; Agate, l. b. w., b. Ellis, 2; Record, b. Pugh, 5; Rowbottom, c. H. Young, b. Sampson, 11; Floyd, c. Cannell, b. F. Pollard, 20; Allan, c. Sampson, b. F. Pollard, 28; Rose, c. Sampson, b. C. H. Sharman, 1; Fassum, not out, 9; Dines, b. F. Pollard, 0; Molyneux, b. F. Pollard, 11; extras, 13. Total 130.

Seedsmen.

1st Innings:—Pugh, D. (Carter & Co.), b. Agate, 0; Pollard, E. (F. Slocock), b. Agate, 17; Sampson, S. N. (Hurst & Son), b. Floyd, 16; Cannell, E. (Cannell & Son), c. Rowbottom, b. Agate, 10; Hurst, C. E. (of Burbidge), b. Agate, 3; Young, A. S. (Milford Nurseries), st. Rose, b. Agate, 19; Ainsworth, S. (Carter & Co.), b. Floyd, 0; Pollard, F. (Carter & Co.), b. Floyd, 15; Ellis (Cheal & Son), b. Agate, 1; Sharman, C. H., Jun. (Carter & Co.), b. Floyd, 1; Young, H. (Milford Nurseries), b. Floyd, 0; Parr (Cooper, Taber & Co., Limited), c. Agate, b. Floyd, 0; Pearson, C. (Carter & Co.), b. Floyd, 2; Sharman, C. H. (Carter & Co.), not out, 3. Extras 5; total, 92. In the second innings of the Seedsmen, D. Pugh scored 25, E. Pollard 12, while S. N. Sampson and E. Cannell were 23 and 5, respectively, not out. Extras, 3; total 68.

Obituary.

FRANK MILES.—We regret to have to record the death, on July 15, of Mr. Frank Miles. The deceased gentleman was a clever artist, who was best known to the horticultural world by his many pretty sketches and drawings of garden scenes and plants, &c. He had for some years suffered from a mental disorder, and died at an early age. His father, the Rector of Bingham, is celebrated for his collection of hardy perennial plants.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Table with columns: DISTRICTS, TEMPERATURE (ACCUMULATED), RAINFALL, BRIGHT SUN. Rows list districts like 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 with corresponding weather data.

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. Principal Grazing, Ac., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 11, is furnished from the Meteorological Office:—

"The weather was unsettled and showery during the early part of the week, with thunderstorms and heavy falls of rain in many places. Towards the close of the period, however, the weather improved considerably, and was mostly fair and dry.

"The temperature was a little below the mean in all districts, excepting 'Scotland, E.,' the deficit ranging from 1° in 'Scotland, N.' and 'England, N.E.,' to 3° in most other parts of the Kingdom. The highest readings were observed mostly on the 10th, but at some of the extreme western and northern stations they occurred earlier in the week. With the exception of 'England, N.E.' and 'England, S.,' there was no district in which the thermometer reached 75°, and in the majority of

'grazing' districts, with the addition of 'Scotland N.,' the readings were in all cases below 70°. The lowest readings were observed on varying dates, the thermometer falling below 45° in most parts of the country, and reaching a minimum of 40° in 'Scotland, E.' (at Ochtertyre).

"The rainfall amounted to a little more than the mean in most of the Wheat-producing districts, and to a little less than the normal in most of the 'grazing' districts. In 'England, N.W.,' however, there was a slight excess, while in 'England, N.E.' the average amount was just reached.

"The bright sunshine was very deficient, the percentage of the possible amount ranging from only 12 in 'Ireland, N.,' 13 in 'Scotland, N.,' and 18 in 'Ireland, S.,' to 35 in 'England, S.,' and 44 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, July 16.

OUT-DOOR fruit in fair supply, with trade dull and prices lower. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table listing fruit prices: Apples, 1/2 sieve, s.d. s.d.; Lemons, per case, s.d. s.d.; Melons, per dozen, s.d. s.d.; Peaches, per dozen, s.d. s.d.; etc.

NOTE.—Bananas and Apricots differ in price so greatly, according to quality and quantity on sale, that no trustworthy quotations can be afforded. Peas also vary in price every hour.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table listing cut flower prices: Arum Lilies, 12 blms, s.d. s.d.; Orchids; Asters, French; Cattleya, 12 blms, s.d. s.d.; etc.

ORCHID-BLOOM in variety.

NEW POTATOES.—Home-grown supply fairly heavy. Price from 6s. to 9s. for Kidneys, and 4s. 6d. to 5s. 6d. for Beauties. JERSEYS, 6s. to 6s. 6d.; French, 4s. to 6s. OLD POTATOES.—Close this week, at 47; supply exhausted. NEW ZEALAND.—Consignment of 50 tons of Blues this week, although the condition is fair, the venture is a failure.—J. B. Thomas.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing vegetable prices: Artichokes, Globe, s.d. s.d.; Lettuces, per doz, s.d. s.d.; Mushrooms, punnet, s.d. s.d.; etc.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing potted plant prices: Aralia Sieboldi, per doz, s.d. s.d.; Foliage plants in variety, each, s.d. s.d.; etc.

NOTICES TO CORRESPONDENTS.

ACACIA: *C. T. & Co.* Probably an Acacia, but it is not possible to say which one.

CARNATION DISEASE: *Nemus, S. W. L.*, and other correspondents. Your plants are suffering from an attack of eel-worms. See fig. 11, and paragraph in p. 71.

CATTELEYS: *E. B.* Excellent samples, giving evidence of good cultivation.

COLEWORTS: *Miss F.* It is now too late to sow Cabbage seed for producing small open-hearted Cabbages—Coleworts—in late autumn and early winter. The proper time for your district would be early in May. You may sow seed of any good hardy variety between July 25 and August 10, and plant the seedlings, when large enough, at 15 inches apart, on well-manured land. Every alternate row and alternate plant in the rows left, should be drawn, not cut, for winter and spring use, and those that remain will form the principal crop of the summer season. The plants drawn early in the year would be what are generally understood by Coleworts. If the Rosette Colewort be chosen for sowing in May, and the plants put out at 1 foot apart, nice hard little Cabbages form in autumn and early winter.

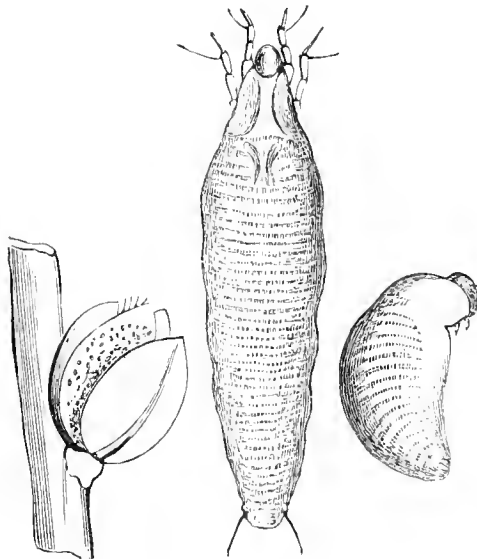


FIG. 12.—CURRANT BUD MITE MAGNIFIED.

CUCUMBER: *G. S.* Your Cucumber roots are badly affected with eel-worms, often figured and described in these columns. Destroy the plants, turn out the soil, and start afresh.

CURRANT SHOOTS DYING: *Chas. Kershaw, Oakwood*, and others. The injury is caused by the Currant-bud mite, *Phytoptus ribis*. Cut off and burn all affected shoots, dress the soil with quick-lime or gas-lime, stirring the surface, and use such washes as are usually employed against red-spider (see fig. 12).

DISEASED VINES: *Francforto*. It is hardly possible to get out the fungus from the tomentum of the dried leaf, as the latter is so brittle, but from the spores seen, we believe it to be the American *Peronospora viticola*, a most destructive pest. All affected leaves should be burnt at once, and every precaution taken to slay the pest by spraying with Bordeaux Mixture.

DOUBLE-FLOWERED BEGONIA: *Austin, Glasgow*. A very beautiful and large rose-pink coloured blossom. A variety that is certainly worthy of being perpetuated.

FRUIT GROWING UNDER GLASS: *A. B. Handy Book of Fruit Culture under Glass*, by David Thomson (Blackwood & Sons). Price, probably, 5s.

FUNGUS: *A. J.* Next week. The larger Saxifrage appears to be Wallacei, the smaller a form of hypnoides, but the specimens are insufficient.

GRAPES: *J. D. B.* See our answer to "Peaches: Constant Reader." In any case, many of the Grapes will be spoiled, as you have allowed the mildew to develop so much before seeking advice.

Steps should be taken to arrest the spread of the pest on the very slightest appearance of it on leaf or berry.

INSECT: *Woolfey*. A weevil; most destructive. Trap them with slices of Carrot at night, and destroy them.

MELON LEAVES DISEASED: *J. F.* The plants are attacked by a species of mildew, probably *Sphaerotheca castagnei*. Apply flowers-of-sulphur in fine powder, by means of a *boite à houppes* or a sprayer. It was well to send full particulars of soil, management, &c.; but these moulds or mildews baffle the best modes of culture at times.

NAMES OF PLANTS: *R. W. H.* 1, *Polemonium ceruleum*; 2, *Sedum rupestre*; 3, *Dianthus Armeria*; 4, *Dianthus*, not known; 5, *Sedum spurium*; 6, Looks like *Blechnum boreale*, but very small.—*Geo. E.* 1, *Oxalis corniculata*; 2 and 3, species of *Oxalis*, which are not recognisable as sent. The plant that passes for Shamrock is *Trifolium repens* (white Clover), or sometimes *Oxalis acetosella*.—*G. B. Heythrop*. 1, *Galium verum*; 2, *Ajuga reptans*; 3, *Polygonum Persicaria*; 4, *Ononis arvensis*; 5, *Geum urbanum*.—*T. T. & S.* 1, *Agrostemma coronaria*; 2, *Hippophae rhamnoides*; 3, *Heuchera Richardsoni*; 4, *Rosa polyantha*.—*H. J. Ross*, *Orchis ustulata* (not a variety of *O. incarnata*), *Gymnadenia conopsea*, *Nigritella angustifolia*, *Nigritella suaveolens* (yes, a natural hybrid between the two latter).—*F. B.*, *Campanula*. You send a flower only, which we take to be a variety of *C. persicifolia*. The coloration of the calyx is not unusual in these plants.—*A. J. A. B.* *Begonia*, one of the hybrids from *metallica*.—*H. M. M.* 1, *Davallia canariensis*; 2, *Asplenium fragrans*; 3, *Lastrea filix-mas*; 4, *Athyrium filix-femina*; 5, *Blechnum occidentale*; 6, *Polypodium cambricum*.—*Bellis*. 1, *Fuchsia Riccartoni*; 2, *Campanula Trachelium*; 3, *Cistus* sp.; 4, *Thalictrum majus*; 5, *Spiraea palmata*; 6, *Veronica longifolia*, probably; 7, *Phalaris arundinacea variegata*; 8, *Agrostemma coronaria*.—*C. E.* 1, *Helianthemum* sp.; 2, *Lychnis chalconica*; 3, *Potentilla grandiflora*, garden form; 5, *Adiantum capillus veneris*; 6, *Polypodium plumosum*.—*J. H.* 1, *Aloe veruocosa*; 2, *Oenothera macrocarpa*; 3, *Davallia pyxidata*; 4, *Asplenium praemorsum*.

PANSY: *J. M.* A curiosity, interesting to botanists, but which would not find favour with the florists. The sepals of the calyx are unusually large and leaf-like, and the petals undulate.

PEACHES: *Constant Reader*. The fruits are badly mildewed. You must dress the trees with some of the recognised mildew remedies; but, we fear these will scarcely save the fruit this season. Use a little warmth in the pipes night and day, and avoid a close cool atmosphere. You might smear the pipes with sulphur in whitewash, and put pans of the same about the house.

RHODODENDRONS NOT OPENING THEIR BUDS: *C. Mansfield*. The results of the severe winter. It is very common this year.

ROSE GIBB: *W. M.* Next week.

STRAWBERRIES: *Crollmus*. The strongest runners should be layered in pots, all others being cut off. Lose no time in getting the job done.—*W. B.* Entirely smashed on arrival.

CATALOGUES RECEIVED.

OSMAN & Co., Horticultural Sundriesmen, Commercial Street, London, E.—Cross Cases.

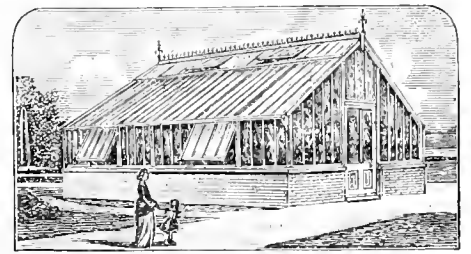
T. METHVEN & SONS, 15, Princes Street, Edinburgh—Dutch Flower Roots, &c.

PITCHER & MANDA, The United States Nurseries, Short Hills, New Jersey, U.S.A., and Hextable, Swanley, Kent—General Plant Catalogue.

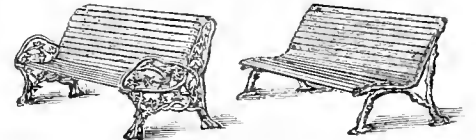
ROOZEN BROTHERS, Overveen, Haarlem, Holland—Dutch and Cape Bulbs, and Plants.

COMMUNICATIONS RECEIVED.—Joseph Shaw.—*J. W.*—*J. S.*—*V. C.*—*W. S.* (many thanks).—*H. C. & Sons.*—*Sir T. L.*—*Messrs. Sander.*—*J. R. J.*—*C. de B.*, Antwerp.—*J. H.*—*J. P. & Sons.*—*L. C.*—*H. G.*, Haarlem.—*A. W.*—*J. E.*—*G. B.*—*Cap. E. O. Feuzi*, Florence.—*S. P.*—*O.*—*W. G. S.*—*M. H.*—*A. P.*—*R. D.*—*T. Hare.*—*J. B.*—*R. Ruffitt.*—*W. D.*—*A. P.*—*W. K. W.*—*J. Robson & Son.*—*W. Clark.*—*J. G. Baker.*—*W. A. C.*—*C. H.*—*T. S.*—*E. C.*—*W. G.*—*C. De B.*—*R. D.*

DIED.—On July 13, at Chilwell House, Notts, ELIZABETH, widow of the late JOHN ROYSTON PEARSON, and daughter of the late Henry Hetley, of Orton, Longueville, Hunts. No cards.



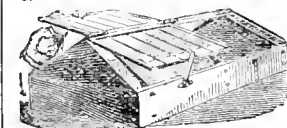
THIS GREENHOUSE erected and heated complete, in any part of the country, best materials only, workmanship guaranteed, 25 ft. by 12 ft., £50; 30 ft. by 15 ft., £70. Brick-work excepted. For particulars, see our Catalogue, post-free.



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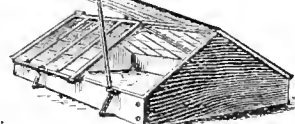
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GARDEN FRAMES in great VARIETY.



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NEW SPAN-ROOF GARDEN FRAME.



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THREE-QUARTER SPAN GARDEN FRAME.

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No. 75.
MELON AND CUCUMBER FRAME.

CASH PRICES. CARRIAGE PAID.
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No. 77.—Smaller size Frames, similar to No. 75.
6 ft. by 4 ft. £1 15 0
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All Frames made of Selected Red Deal, painted three times, and Lights glazed with 21-oz. sheet glass.

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Carriage paid on Orders of 40s. value.

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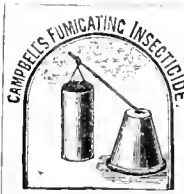
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CAMPBELL'S FUMIGATING INSECTICIDE

Big Facts:—
Mr. WILLIAMS, Gardener to Earl Lisburne:—"I have given your New Fumigating Material a thorough trial. Nothing could be more simple to use, nor more effective in its work."



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A truly valuable remedy. Has saved thousands of Bulbs.

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Mr. B. CROMWELL, Cleveley Gardens, says:—"The result of using your EUCHARIS MITE KILLER is, that our stock of Eucharis is now furnished with dark-green leathery foliage, and pots full of strong fleshy roots."

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NEW IMPORTATION of
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300,000 of every description, in Black and White.

SPECIAL OFFER. TEN DAYS ONLY!

3 ft., 2s. 9d.; 4 ft., 3s.; 5 ft., 7s.; 6 ft., 8s.; 7 ft., 9s. 8 ft., 14s. per 100.

In Quantities at a Reduction.

SAVE 20 PER CENT. in Labour by using
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*We Guarantee Extermination
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Carriage Paid on 10 Gallons and upwards.

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One Success has many Imitators.

The Best and Cheapest Preparation for Destroying Weeds, &c., on Garden Walks and Carriage Drives, is

**SMITH'S Celebrated
WEED KILLER**

Leaves no stain nor smell, makes the gravel equal to new. A great saving of labour. 4 Gallons, sufficient to make 100 Gallons when mixed, 7s. 6d., Carriage Paid.

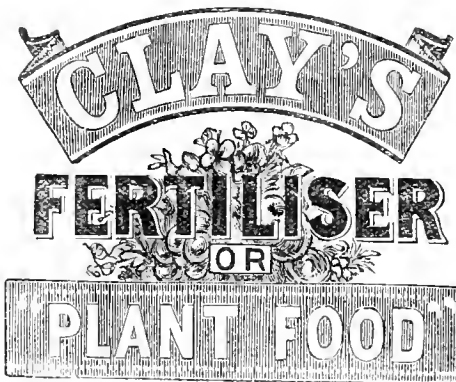
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SLUGICIDE (Registered).—CERTAIN DEATH to SLUGS. Harmless to Plant, Vegetable, and Animal Life. Delicate seedlings are absolutely secure when sprinkled with "Slugicide." 1s. 6d. per box. All Seedsmen wholesale.

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TO NURSERYMEN AND AMATEUR GARDENERS.

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Made from the Waste of the Lobster Tinning Factories in Newfoundland and Nova Scotia.

The most beneficial and the cheapest Fertiliser in the Market for Nursery, Vegetable, and Flower Gardens, and for Conservatories, producing the highest results with the smallest outlay. Ask your Seedsman for a shilling 1 lb. Tin, with printed directions for use, and see that you get none other.

For Wholesale Quantities address:—

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BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

GISHURST COMPOUND used since 1859 for Red Spider, Mildew, Thrips, Greenfly and other blight, 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supercede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

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For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

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SAFE—ECONOMICAL—EFFECTUAL.

15, PRINCES STREET, EDINBURGH, July 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, January 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

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Prepared only by

DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.

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PATENT DISTRIBUTOR,
PATENT SPRAYER,
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KILLMRIGHT,

BEST Insecticide for Destruction of Caterpillar and all Insect Pests, and Prevention of Mildew.

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Sir,—I have tried your Simplex Manure and Insecticide Distributor, and find them to answer very well, but especially the Insecticide Machine. I charged it with "Killmright," and found it very effective on insect life.

Extract from D. Deal, "Rose Notes," in the *Journal of Horticulture*, of June 18.

"If growers begin to complain of 'fly,' syringing must be resorted to. And here let me say that there can be nothing so effectual as Stott's Distributor and their powder, Killmright."

Retail from Ironmongers and Seedsmen; Wholesale and Retail from the Stott Distributor Co., Ltd., Barton House, Manchester.

THE CHEAPEST & BEST OF ALL. FIR-TREE OIL INSECTICIDE (soluble)

FOR PLANTS.—To make a solution for washing or cleansing purposes.—Half-a-Pint of Fir-Tree Oil to ten gallons of water.

For Green and Black Fly, Thrip, American Blight, Woolly Aphis, &c.—Half-a-Pint of the Fir-Tree Oil to two or four gallons of water, or two or three table-spoonfuls to the pint.

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For Mealy Bug, Brown or White Scale.—Half-a-Pint of the Fir-Tree Oil to four or six quarts of water, four to eight table-spoonfuls to the pint.

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For Ants, Grubs, Worms, Wood Lice, &c., in the Soil.—Half-a-Pint of the Fir-Tree Oil to two gallons of water.

The most efficacious way to use Fir-Tree Oil in small quantities is to apply it with one of HUNTER'S AMERICAS.

When applied to the roots of delicate plants the soil should be drenched with clean water immediately afterwards, in all other cases washing is not necessary. Used with Warm Water it is quicker in its action than when cold is used.

Soft or rain water is necessary, and Applied in Wood, Tin, or Pot Vessels.—Galvanized Iron Vessels must not be used.

FOR NITS IN CHILDREN'S HAIR.—Mix one part of Fir-Tree Oil with three parts of Warm Water and apply with a Comb or Brush, the Hair can be washed shortly after.

FOR WASHING FLANNELS & UNDERCLOTHING.—Put a wine-glass full in ten gallons of water for steeping; the same may be put into the boiler. Common Soap may be used but no other preparations.

Sold in Bottles, half-pints, 1/6; pints, 2/6; quarts 4/6;

half-gallons 7/6; gallons 12/6 each.

Drums, 5 and 10 gallons each, at 11/ per gallon.

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WEED KILLER

Is Double the strength of any other.

Destroys all weeds on Garden Walks, &c., &c.
Improves the colour of the Gravel—has no smell.
Saves many times its cost in labour alone. One application will keep the walks clear of weeds for a whole season at least. Can be applied with an ordinary watering-can.

Note the strength, & compare the price with others.

1 Gallon makes 51 Gallons for use.

PRICE IN TINS:—1 gallon, 3s.; 5 gallons, 2s. 6d. per gallon; 10 gallons, 2s. 3d. per gallon; 40 gallon casks, 2s. per gallon. Tins and Casks free.

Carriage paid on all orders of 10 gallons and upwards. Sample gallons sent Carriage paid on receipt of Postal Order.

Prepared solely by the BOUNDARY CHEMICAL CO., Luton Street, Liverpool.

Can be had through all Seedsmen, or direct. Ask for the "CLIMAX," and take no other.

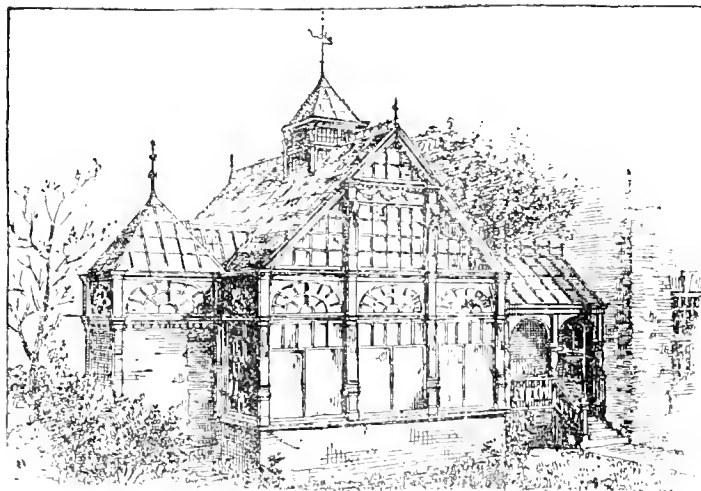
THE "CLIMAX"

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Is Guaranteed to effectually Destroy all Moss on Lawns, &c. while at the same time it will stimulate and increase the Growth of the Grass.

1 Gallon as sold will make 15 Gallons for use, and is sufficient to do 110 square yards. Can be applied with an ordinary watering-can. Saves many times its cost, and insures a perfect Sward.

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Post-free on application.



For Destroying Weeds on Garden Walks, Carriage Drives, Roads, Stable Yards, &c., also for Killing Plantain on Lawns. Saves more than twice its cost in Labour. No Smell. Does not stain the Gravel.

One application will keep the Walks clear of Weeds for at least Eighteen months.

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Used in the proportion of one gallon to twenty-five gallons of water.

ANTI-FUNGI POWDER, THE ONLY EFFECTUAL REMEDY FOR TOMATO DISEASE, MOULD AND MILDEW ON ROSES, VINES, &c.

It can be applied with an ordinary Powder Distributor, has no smell, and is harmless to the plants or fruit. Recommended by Mr. W. HILLS, Gardener to Viscount Gort, East Cowes Castle; Mr. W. CHILD, Gardener to the Rev. W. WILKS, Secretary to the Royal Horticultural Society; Mr. CHAS. ROSS, Welford Park Gardens, Newbury, and others.

Prices: 1 lb. 1s., 3 lb. 2s. 9d., 7 lb. 5s. 6d., 14 lb. 10s., 28 lb. 18s., 56 lb. 35s. Carriage paid on 28 lb. and upwards.

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VERY FINEST QUALITY.

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All Sacks included. Send Postal Order for SAMPLE SACK. Special Terms to the Trade. GARDEN STICKS of all descriptions For PRICE LIST, and Special Quotations for larger quantities, apply to—**The Forester,**

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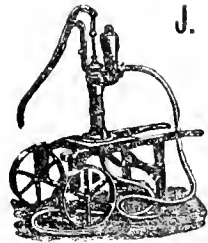
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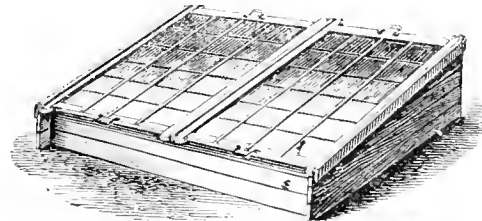
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1-light, 4 ft. by 6 ft.	CASH	2	0	0
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4 " 16 ft. by 6 ft.	CARRIAGE	5	5	0
5 " 20 ft. by 6 ft.		6	7	6
6 " 24 ft. by 6 ft.	PAID.	7	10	0

Larger sizes at proportionate prices.

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GARDEN POTTERIES
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IMPROVED EXPANSION JOINT REVISED PRICES FREE
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"ADIES" LAWN EDGER OR AUTOMATIC SHEARS,

Patented. Awarded (after trial) Bankian Medal and Certificate of Merit of the Royal Horticultural Society.

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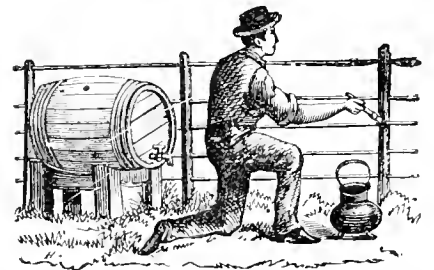


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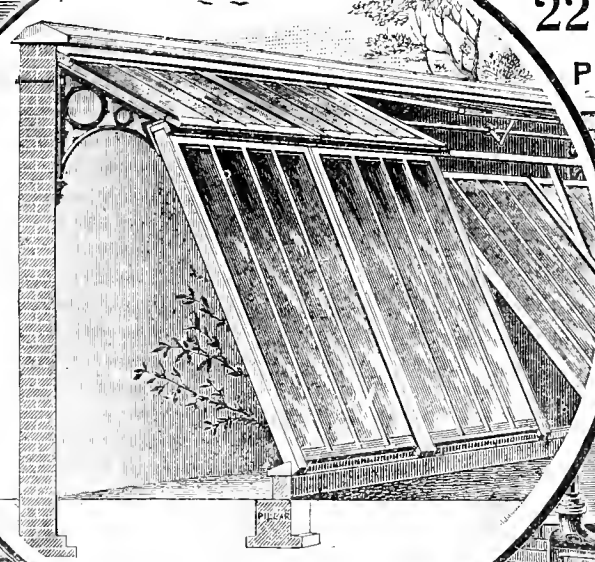
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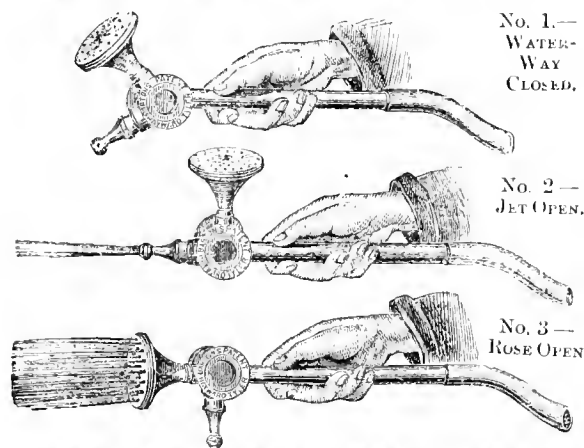
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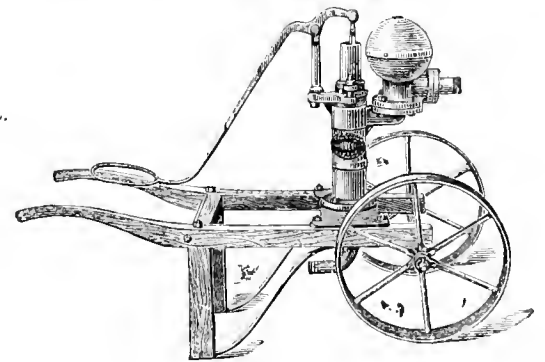
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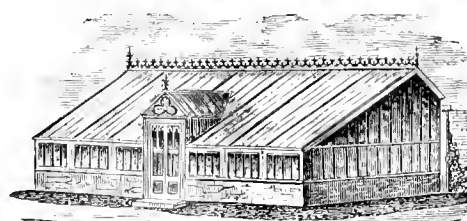
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No. 239.—VOL. X. {THIRD SERIES.}

SATURDAY, JULY 25, 1891.

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N.B.—Trade terms on application.

Rare and Valuable Orchids.

MR. RICHARD PFAU has entrusted me with the sale of the following rare and valuable ORCHIDS, collected by him in Costa Rica, all of which are now offered in perfectly established plants, viz.:

BARKERIA ELEGANS, nice plants, 5s. each.

ODONTOGLOSSUM KRAMERI.—According to Collector, this very distinct and beautiful species will always remain scarce, being very rare in its native country. Nice plants, of flowering size, 30s. each; fine strong plants, 105s. each. ODONTOGLOSSUM OERSTEDI MAJUS.—This very distinct and fine variety has larger flowers, and several flowers on each spike, much superior to type. Fine plants, 5s. and 7s. 6d. each, and 42s. per dozen.

TRICHOPIA COCCINEA ATROBUBENS.—The entire lip of a deep blood-red colour, very fine variety, 7s. 6d. and 10s. 6d. each.

TRICHOPIA TURIALYÆ, Rehb. f.—Very rare and most distinct species, with citron-yellow flowers; only one single plant found by Collector, 25s.

TRICHOCESTRUM PFAUI, Rehb. f.—A pretty winter flower; flowers of long duration. Small established plants, 7s. 6d. each.

The stock being very limited, early orders respectfully solicited.

Orders will be executed in strict rotation, and forwarded Post and package free to any part of Great Britain or Continent. Terms, payment within 30 days after receipt of plants, either by Post-office Order or crossed Cheque, made payable to EDWARD ORTIGIES, Inspector of Botanic Gardens, Zurich, Switzerland.

EXHIBITIONS.

LIVERPOOL HORTICULTURAL ASSOCIATION.
 The TWELFTH ANNUAL SUMMER EXHIBITION of PLANTS, FLOWERS, FRUIT, and VEGETABLES will be held in SEFTON PARK, on SATURDAY and MONDAY, August 1 and 2, 1891. And the GREAT CHRYSANTHEMUM and FRUIT SHOW, in St. George's Hall, on TUESDAY and WEDNESDAY, November 17 and 18. SPECIAL PRIZES and CUPS for Forty-eight and Thirty-six CUT BLOOMS. Schedules on application to the Secretary,
 EDWARD BRIDGE.

Tarbock Road, Huyton, Liverpool.
ABB EY PARK, LEICESTER.
 The SIXTH ANNUAL FLOWER SHOW will be held on TUESDAY, August 4, 1891. Schedules are now ready, and may be had by applying to Mr. JOHN BURN, Secretary. Entries close August 1.

WILTS HORTICULTURAL SOCIETY'S SHOW, at SALISBURY, on AUGUST 12. PRIZES to the VALUE of £150 are OFFERED. Schedules and all information may be obtained of W. H. WILLIAMS, Hon. Secretary. The Nurseries, Salisbury.

MAIDENHEAD HORTICULTURAL SOCIETY.
 ANNUAL SHOW at Curtisfield, Maidenhead, on THURSDAY, August 13, 1891. Entries close August 6. Schedules and particulars from— O. KING, Hon. Sec., Ray Park Cottage.

CARDIFF HORTICULTURAL SOCIETY.
 President: THE MAYOR OF CARDIFF (the Most Hon. The Marquess of Bute, K.T.).
 ANNUAL SHOW, August 12 and 13 next. THREE HUNDRED POUNDS IN PRIZES. Entries close on August 5. Schedules Ready. Apply— SECRETARIES, 54, Woodville Road, Cardiff.



SIXTH NATIONAL CO-OPERATIVE FLOWER SHOW, Crystal Palace, AUGUST 15, 1891.
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 EDWARD OWEN GREENING, Hon. Secretary.

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THE TWENTY-SEVENTH ANNUAL EXHIBITION of the CALNE HORTICULTURAL SOCIETY will be held on TUESDAY, August 18, 1891, in Bowwood Park. ONE HUNDRED and TWENTY POUNDS offered in PRIZES, and a FIVE-POUND CUP for 35 varieties of ROSES. Schedule and particulars of
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 Strong ARECA LUTESCENS, in 60's, at 60s. per 100;
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 ASPARAGUS, P. NANUS, strong, in thimbles, at 45s. per 100.
 Extra fine PANDANUS VEITCHII, in all Sizes.
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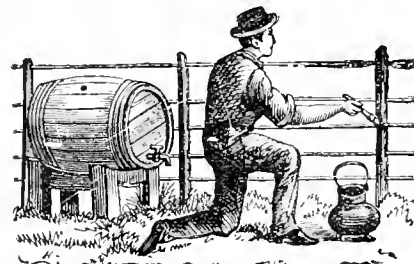
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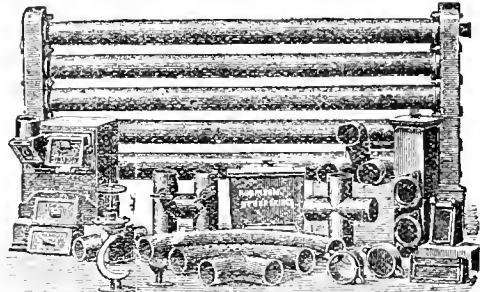
Best quality and workmanship, 2 inches thick, 6 ft. by 4 ft., iron bar across and very strong, 4s. each; free on rail in London. Cash or reference with order.

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THE EARLIEST AND BEST.
6d. and 1s. per packet,
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"I have grown a good many varieties of Cabbage, but I consider Webbs' Emperor the best of them all. I planted out a bed of 850 plants last autumn, and not one went to seed, but all turned out splendidly, and were admired by all who saw them."

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BULB GROWER,

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(The largest Bulb Grower in the South of France).

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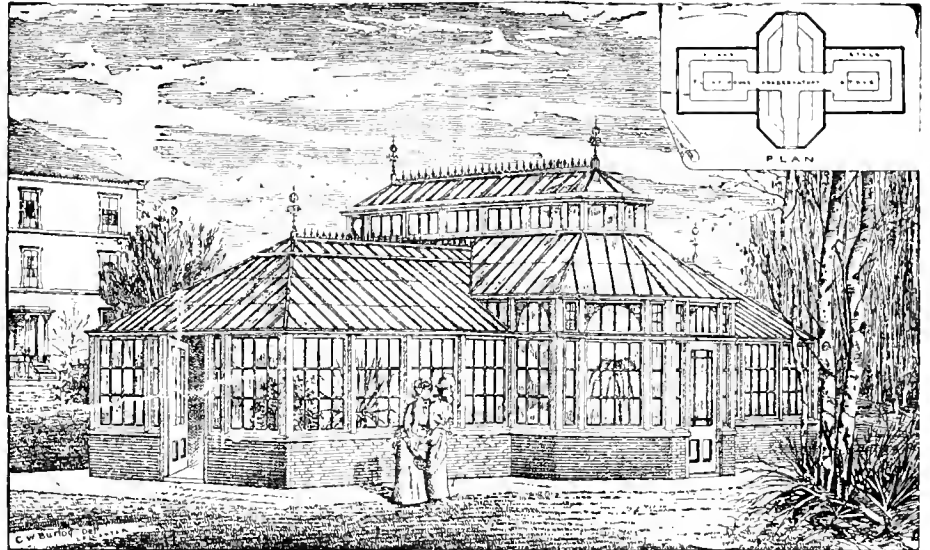
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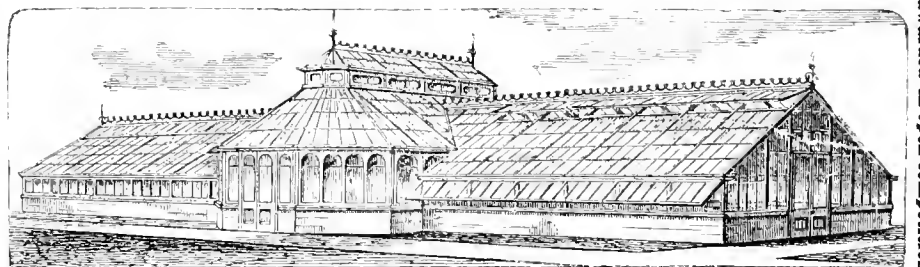
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Please send me "THE GARDENERS' CHRONICLE" for _____ Months,
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G. C.
July 25, 1891.

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A PURE WHITE BEDDING CLEMATIS, and the FERN which has lately received so many of the highest awards and proofs of admiration.

**CLEMATIS, SMITH'S SNOW-WHITE
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The flowers are paper-white, about the same size as those of the old purple Jackmanii, but produced in even greater profusion. It is unrivalled for beds, and also for climbing. Ready in August. 7s. 6d. each.

PTERIS TREMULA SMITHIANA.

This is a very valuable and distinct Fern. No Collection should be without it. Illustration and description free. 5s. to 10s. 6d. each.

We now have a very fine lot of the best varieties of CLEMATIS ready for planting out, also BEDDING PLANTS, and shall be pleased to send particulars.

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GARDEN.

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SWANLEY, KENT.

1891.

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For ONIONS.

(OPEN to the UNITED KINGDOM)

FIFTEEN POUNDS

Will be awarded, at Banbury, Sept. 3.

Entries close August 26.
Particulars on application.

The object in giving these Premiums is to Promote the Cultivation of Pedigree Stocks of Onions, and the Inspection of the same will only be open to Exhibitors, Gardeners, the Trade, Seed Growers, and Gentlemen interested in Horticulture.

GREAT INTERNATIONAL SHOW

EDINBURGH, Sept. 9, 10, and 11.

IN ADDITION to the 1st, 2nd, and 3rd Prizes, in Class X, 242, offered by H. DEVERILL, for the Best Twelve Onions, of any variety, H. D. has arranged, with the permission of the Council, to present a **GOLD MEDAL** to the Winner of the 1st Prize.

H. DEVERILL,

SEED GROWER AND MERCHANT,
ROYAL SEED ESTABLISHMENT,
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Orchids. Orchids.

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AN INSPECTION OF OUR STOCK INVITED.

We received the Highest Award (SILVER CUP and SILVER FLORA MEDAL) for our groups of Orchids and other Plants exhibited at the Temple Show of the R.H.S. held on the 28th and 29th of May.

B. S. WILLIAMS & SON

Victoria and Paradise Nurseries,

UPPER HOLLOWAY,
LONDON, N.

THE GERMAN EMPRESS.

In our Next Issue,

We shall Present to our Readers an Illustration

OF THE

LARGE ORCHID TROPHY,

Presented to the German Empress,

BY

Messrs. SANDER & CO.

THE

Gardeners' Chronicle.

SATURDAY, JULY 25, 1891.

SEEDING OF THE BAMBOO.

THE harder species of Bamboo are becoming deservedly more popular year by year for the adornment of English pleasure-grounds. One thing, however, seems not unlikely to be lost sight of by many, viz., the fact that the culms of the Bamboo flower but once, the plant perishing immediately after the ripening of the seed. The usefulness of the many species of Bamboo now introduced into England in the embellishment of our gardens cannot be questioned, at the same time there is yet to be considered the eventuality of the flowering, seeding, and consequent death of the plants—which no art of the gardener can stay—after they have reached the climax of their grace and beauty. It would be, I imagine, almost impossible to determine the age at which these hardy Bamboos will produce flowers when grown in this country; most probably the term of years will differ with the various species.

With regard to the great Bamboo of tropical India, *Bambusa arundinacea*, it is a well ascertained fact, that the coming to maturity of this gigantic grass only occurs after a growth of some fifty years' duration; and as the phenomenon of its flowering, seeding, and subsequent death in India and other climes—where it covers with its huge and picturesque clumps many square miles of country—can have been seen but by few Englishmen of the present generation, some account of the extraordinary spectacle by an eye-witness may prove of some little interest to the readers of this journal.

It is unnecessary, of course, to give any lengthy description of the plant; suffice it to say, that in the locality in India where I had the rare fortune of witnessing the flowering and seeding of this gigantic member of the grass family on a large scale, the culms frequently attain a height of from 60 to 70 feet, and a diameter at their thickest part of from 8 to 10 inches. These culms are furnished with lateral branches, throughout their whole length adorned with a profusion of light green leaves. The plant is deciduous, shedding its leaves in India during the dry season, which are again renewed on the approach of the spring showers. The clumps present the appearance of colossal plumes of feathers, and when seen in full leaf are beautiful beyond description.

The soil of the tracts of country the Bamboo affects in South India is mostly of a shallow nature, with a gritty, ferruginous subsoil, and it is not found where the rainfall is excessive. When the clumps are in full vigour, the culms are produced of the above dimensions with amazing rapidity.

It was during the years 1863—64,⁷ while engaged in Coffee planting in the district of Wynaad, in the province of Malabar, that I witnessed the phenomenon of the seeding of *Bambusa arundinacea*. The plantation I had charge of at the time was situated in the midst of an extensive Bamboo jungle within but a short distance of the frontier of Mysore, and on the main road from the Malabar coast to Seringapatam and Bangalore. At the time of my arrival in the district, the magnificent Bamboo forest, interspersed with such deciduous hardwooded trees as Teak, Kino, Rose, and Sandal woods, and others of an equally valuable description, was, although unknown to me at the time, upon the eve of a sudden and wonderful transformation. Hundreds of square miles thickly covered with the exquisitely graceful clumps of the Bamboo, giving to the landscape as far as the eye could reach a beauty difficult to describe, were to be changed in the brief period of a little over a year by fire into a charred and blackened wilderness, the myriads of nodding plumes that for half a century had graced the woodlands were, at the call of Nature to blossom, yield their seed, and disappear from the face of the earth as by the breath of a destroying angel.

The south-west monsoon rains of 1863 had ceased about the middle of September, leaving the jungle tracts of Malabar in the very heyday of their glorious greenery, the Bamboo plumes waving to and fro by the gentle breezes still prevailing from the westward, glistening in the light of a tropical sun, and, as yet, showing no trace of the change they were so soon to undergo. As the season advanced, hot parching winds from the east began to take the place of the more kindly breezes from the west, and by Christmas, the leaves of the Bamboo thickly covered the ground. Simultaneously with the disappearance of the leaves from the laterals, the inflorescence began to appear, and the aspect of the country in every direction changed as if by magic. No one was prepared for such an eventuality, and the English planters in the district were struck with something akin to alarm when the fact dawned upon them that, in the course of a very brief period, not a living Bamboo would be left in the forest. A few there were who refused to believe that the culms would perish after ripening their seeds, and were only persuaded by the actual realisation of the fact. As nearly as I can remember, the seed was matured by the middle of May, the panicles of grain weighing down the culms to a third of their length, and giving them withal a graceful as well as fruitful appearance. When the seed, which was about the size and had much the appearance of small Oats, had fully matured, it fell to the ground in showers by every passing breeze, and then came a happy season for both man and bird. Sea-fowl, spur-fowl, partridge, jungle-fowl, and quail, with which the jungles abounded, revelled in, and got fat upon, the plentiful supply of good food so suddenly bestowed upon them by the hand of Nature, and man himself was not slow to take advantage of the offering. The coolies from Mysore employed on the Coffee plantations could with difficulty be induced to remain steadily at work during this Bamboo harvest, and the jungle tribes could not be persuaded to work at all, but subsisted solely on the fallen grain of the Bamboo, so long as any could be gathered from the ground. This seed they appeared to highly value, and, judging from appearances, it seemed to be very nutritious. The grain was ground into meal by the aid of small hand-mills, and two modes were employed in its cooking—the one by

baking in the form of cakes, and the other in boiling it into a kind of thick porridge. I myself ate the cakes on several occasions, and found them fairly palatable. These jungle tribes, although perfectly aware of the value of the vast granary thus laid at their feet, were, notwithstanding, improvident to a degree. They ate abundantly of the fruit whilst it lay on the ground, but made no provision against the approaching destruction of the whole by jungle fires. So, after these had licked the ground, they had, perforce, to return to work on the Coffee plantations. At the height of the dry season, and when the earth was thickly covered with a coating of Bamboo leaves and seed, these fires began to do their work, and, apparently, so completely that it was hard to believe that a single Bamboo seed could have escaped destruction, and that in the course of a decade or so, another such magnificent Bamboo forest could be produced; but Nature, in some mysterious way, was equal to the occasion, and before I left India in 1877, the Bamboo zone of Malabar and Mysore was clothed with another jungle, consisting of clumps approaching in size and grandeur those that perished in 1863.

From the date of the seeding of the Bamboo, the clumps stood throughout the following monsoon leafless and dead, but intact; and it was not till nearly a year after that their complete destruction by fire began. When the dead and sapless clumps caught light, the whole country was filled with flame and smoke for weeks together; loud reports were heard night and day without intermission, resulting from the pent-up gases within the hollow culms, and the whole Bamboo zone so picturesque and beautiful but a twelvemonth before was quickly reduced to a scene of desolation. The total destruction of the clumps, however, was not accomplished in one season, many escaping the fires till the second, and some till the third.

The young seedlings soon began to appear, but made but slow progress for several years. As time went on, the annual growth of culms waxed stouter and stouter, till at last a thick undergrowth of low Bamboo tufts covered the ground, which, in the fullness of time began to send up gigantic canes, till the forest was restored to its former strength and beauty.

With reference to the period of time required for the maturation of *Bambusa arundinacea*, I was at some little trouble, while in India, to ascertain from the native tribes inhabiting the jungles of the district the approximate duration of its existence, and was told by several men, apparently about sixty years of age, living widely apart, that they remembered a similar phenomenon of the seeding of the whole of the Bamboos of the district when they were boys. From this I concluded that about fifty years was the limit to the life of this giant species of *Bambusa*.

About three months before the flowering of the Bamboo, I had occasion to clear some 30 or 40 acres of land for the purpose of Coffee planting, the culms of the Bamboo being cut close to the ground. I waited patiently, curious to know the result of such an operation. When the monsoon rains began, the huge stools left in the ground began at once to send up numerous small culms of from 8 to 10 feet in height, and furnished with laterals. On the cessation of the rains these immediately flowered and seeded, after which the old stools perished absolutely, so that the act of cutting down the original culms had only the effect of delaying, not frustrating, Nature in her efforts at reproduction. *J. Lourie.*

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM INSIGNE.*

THIS is a native of Nepal, so it was surprising to me to obtain from a native collector a large quantity of a species closely resembling it from so far south as Siam. It is very distinct as a variety, both in form and colouring. The leaves are shorter and more crowded; the scape shorter, the flower rather smaller than that of the typical form. The general colouring is similar to that of the Nepal plant, but the white margin of the standard is broader, and runs right down to the base; the purple spots are crowded into the middle of the bright apple-green centre. The petals and lip resemble much those of the Indian forms, but the lip is more yellow. The shield is different in shape: instead of being cordate, with a notch in the apex, it is almost ovate, with, at the most, a depression at the top.

It is decidedly a charming plant, of very neat habit, and appears to be very floriferous. It will, I think, be welcomed by the lovers of *Cypripedia*. A considerable quantity was brought into Singapore, and a number of plants have ere this found their way to England. *H. Ridley, Singapore.*

A NEW HYBRID LILY, LILIUM MARTAGON × HANSONI.

Hybrid Lilies are so rare, that to get a new one is a matter of much interest. The only clear and undoubted instance known at present is *Lilium testaceum*, the Nankeen Lily, which is evidently a cross between *candidum* and *chalcedonicum*. I believe that some of the forms of the *bulbiferum* series (specially *umbellatum* and *fulgens*), will prove to be garden crosses, and very likely some of the forms between *speciosum* and *auratum*. The plant I am writing about at present has been raised by Mr. C. G. van Tubergen, of Haarlem, by fertilising *Lilium Martagon album* with the pollen of *L. Hansonii*. The cross was made in 1886, and the plants have just flowered for the first time. The flower is so manifestly intermediate between the two dissimilar original types, that I cannot doubt that a real cross has been effected. Mr. van Tubergen has only a small stock of plants at present, but is multiplying them for distribution. The following description is made from his notes and the specimens of the leaf and flower he has kindly forwarded:—

Bulb like that of *L. Hansonii*, white, not yellow, like that of *L. Martagon*, globose, 2 inches in diameter. Stem 4 feet high, dark green, smooth. Leaves in whorls, two or four according to the strength of the plant, eight or twelve leaves in a whorl, oblong, acute, thin, bright green, 5 or 6 inches long. Flowers at present 5 to 8 on a plant; pedicels very cernuous. Perianth-segments spreading from the base, oblong, acute, 1½ inch long, ¾ inch broad at the middle, dull yellow in the lower half, with copious small brown spots, passing in the upper half into unspotted claret-brown, flushed a little with dull yellow, dull claret-brown on the outside. Stamens equally recurved, an inch long; filaments yellow; anthers linear, brownish, ½ inch long. Ovary cylindrical, green, ½ inch long; style curved, green,

* *Cypripedium insigne* var. *exul.*, Ridley nov. var.—Herba caespitosa, folia linearia atroviridibus rigida pauca, 5—6; 9 pollicem longa, pollicem lata vel paulo minor, carina distincta, apice minute biloba, mucronulata. Scaapus brevis circiter 6—8 uncias longus, purpureus pubescens vel viridis, pubescentia purpurea. Bractea 2 uncias longa, lanceolata viridis glabra. Ovarium triquetrum rostratum pubescens. Sepalum posticum dorso pubescens oblongum ovatum 1½ pollicem longum, ferme 1 pollicem latum; basi et centro late viridi maculis purpureis margine et apice late albo. Sepala lateralibus connata herbaceo viridia dorso pubescente oblonga ovata cymbiformia. Petala 1½ pollicem lata, 1½ uncia longa, lorata subrotunda flavo-virentia linea mediana brunneo-cente ad basin, maculis paucis purpureis margine ciliato. Labelium 1½ pollicem longum, flavescens venosum marginibus involutis extus politum, intus pubescens, pubescentia purpurea. Columna ½ pollicis longa, subtus pubescens; clypeus ovatus politus ad basin pubescens, imbrone medio ocreo paulo elevato, subtus carinatus omnino pubescens. Capsula purpurea pubescens rostrata, rostro curvulo 1½ uncias longa.—Siam, Tonka.

as long as the ovary. The claret-red of the flower is like that of *L. Martagon* var. *dalmaticum*. *J. G. Baker, Herbarium, Kew.*

FRANÇOIS LEGUAT AND HIS PLANTS.

(Continued from p. 644, Vol. ix.)

CONTINUING the Abbé Pingré's observations on the flora of Rodriguez, as illustrating and commenting on Leguat's former description, his hitherto unpublished notes proceed as follow:—

Its cabbage is also said to be very delicate, but they take care of this useful tree, lest the extraction of its wine should weaken it, and lest the extirpation of the cabbage might cause its death. It is permissible to reckon the species of Palms, of which I have made mention previously, among the number of fruit trees. It is not altogether the same with the *Vacoua*. François Leguat, not knowing its name, gave it that of *Pavillon** or *Pavilion* tree. I have not observed either young Palm trees or *Latanias* sprouting, but I have seen plenty of young *Vacoua* (*Pandanus*) plants springing from the ground, which leads me to believe that this Palm-like plant, the most useless of all, is at the same time the most prolific. Meantime, I confess that amongst all the Palm-allies the *Vacoua* merits the prize for beauty. It is not entirely useless; its thick canopy of branches has often sheltered me from the heat of the sun, and from the violence of the rain. The *Vacoua*, when young, might be taken for a species of *Aloe*; its leaves are then 3 or 4 feet high, or, I should say, long, and are armed with sharp points, whose pricks I have several times experienced when trying to get through the obstacle which these young plants put in my way. The tree then shows neither trunk, branches, nor roots. One and all of these appear by degrees as the tree grows higher. When the tree is formed, at about 1½ foot from the ground; the trunk, descending from it, is divided into some twenty smaller trunks, which form a regular cone, reaching the ground, and there is divided, probably, into many other stems. At 10, 12, or 15 feet from the ground according to the size and age of the tree, the trunk divides still into many more trees and branches, which subdivide into yet smaller ones, and all this with a symmetry so constant as always to form a hemisphere whose convexity is turned towards the sky. The extremity of each small branch bears a sort of tuft of leaves; these tufts again resemble those of the *Aloe*, but less than when the plant was still young. The leaves are smaller, and the blunted points have not the same force. In the middle of each tuft sprouts a sort of cluster (*grappe*), which contains the fruit of the tree; it resembles somewhat that of the *Pine-apple*; the grains which compose it are extremely close. On opening it, one is struck by an odour which is precisely that of a very ripe *Quince*, but the taste is not the same. The fruit of the *Vacoua* is acrid, and absolutely worth nothing.

Besides these trees, which can be regarded as fruit trees, excepting the *Vacoua*, the Isle of Rodriguez also produces an infinity of others of different species. The following are the principal ones:—*Bois d'Olive*,† has nothing in common with our *Olive* trees, it only bears a fruit which has something of the shape of our *Olives*, but nothing of its uses, nor indeed in size even, for it is very much smaller. The *Bois d'Olive* grows very high, and forms a fine tree—it is good for carpentry; the planking of our boat, of which I shall speak presently, was made of this wood. The trunk generally resembles a number of trunks bound together under the same bark; but

on sawing the timber, it is perceived that it is really but one trunk, not cylindrical. The leaves of this tree present a singular phenomenon: when the tree is young, its leaves are very long and very narrow; as it grows up its leaves become short and broad. The difference was so striking, that I have hardly been able to persuade myself that these young trees and the old ones were of the same species. I at last met with one of these trees which had just put forth a branch or new shoot (*branche gourmande*). The leaves of the shoot were 4, 5, or even 6 inches long, and six lines or more in breadth; those of the old branches were 2 or 3 inches long, their breadth was from eighteen lines to 2 inches. The leaf of the old *Bois d'Olive* is not unlike that of the *Bay Cherry* (*Laurier-cerise*) not so long perhaps, less thick, and not so rounded at the point.

I have also seen a very singular *Bois d'Olive*. It might be said that its trunk was 30 feet thick, in one sense. The fact is, that these trees have their roots at the level of the ground, and that from these roots sometimes spring young *Olive* trees, in the same way that young suckers spring from the trunk of our European trees; thus, where three of these trees have so interlaced their roots, the horizontal trunk of these roots appears one, or the trunk of the primitive tree, when springing from the ground, is obliged by some strange cause to extend itself horizontally along a distance of 30 feet, and produces at last three branches, which grow as three distinct trees. Be that as it may, if one can imagine a trunk of a tree, 30 feet long, lying horizontally, from beneath having an infinity of roots, and above three trees lifting themselves perpendicularly from the two extremities, and from the middle of the prostrate trunk, one will have an idea of the tree, or of these three trees, of which I speak, for I leave to others to decide if this tree should be regarded as one or as three.

The *Benjoin*,* according to M. l'Abbé de la Caille (*Journal Historique*, p. 227), is a fine tree, which has no relation with the *Benjoin* of the Indies; it is thus called in place of "*Bien-joint*," because it is the most pliant wood of the country—it never breaks; it is excellent for wheelwrights. I am strongly inclined to think the same. Nevertheless M. Preodet, officer of the Company's troops, who is studying the botany of Bourbon, and who appears to do so with taste and intelligence, is persuaded that the *Benjoin* of Bourbon is the veritable *Benjoin*, although of a species different to the *Benjoin* of the Moluccas. The *Benjoin* of Rodriguez, which is certainly the same as that of Bourbon, exudes a gum which has no relation with that of the *Benjoin* of India.

The *Ebony* † is not rare at Rodriguez, I have only seen the black, I do not doubt that there is also the white and the veined. The young *Ebonies* have only soft sap-wood; the *Ebony* which is the heart of the tree, does not appear until several years have elapsed.

The *Bois Puant* ‡ is a fine full-sized timber tree; its wood is handsome, firm, well veined, excellent for carpentry, and for the construction of ships; it has one inconvenience, to which it owes its name; when newly cut it gives forth a foul odour, to which it is difficult to accustom oneself.

The *Corallodendrum* § is thus called because its wood nearly resembles branches of coral, by the sort of articulations from which the branches spring. It has this peculiarity, that it loses its leaves in a country where the other trees are always green. When I have seen it, on August 10, it had not any

leaves; it was laden with flowers and fruit. This tree is nearly the size of a large *Apple* tree, although with less spread of branches; the branches are bristling with thorns. The flower is produced in a cluster or bouquet, like the *Lilac*, excepting that the clusters are not divided into small bunches, all the blossoms springing direct from the same stalk. Each stalk bears from 100 to even 200 blossoms; the flower is about 2 inches long by 8 or 10 lines broad. It is of the genus of the *Pea-blossom*, the *Balsams*, the *Gucule-de-loup*; its colour is a fine flame-coloured red; its pistil is surrounded with ten stamens. The blossoms are in such great numbers, and so compact, that they crowd one another. Those nearest the branches were old and faded, the next were in full bloom; the last, at the extremity of the bunch, were awaiting apparently their turn to open. I could not find a single one whose fruit was ripe; without doubt the last ones alone become so. The fruit is enclosed within a pod which, besides the exterior membrane, is composed of three other rather tough membranes. This fruit is something like our *Beans*, it is more round, and of a rather deep red colour. The *Corallodendron* is easily multiplied by cuttings. The *Pignon d'Inde* * equally sheds its leaves when it is about to blossom. This tree is rather small. The tallest which I have seen at Rodriguez does not attain more than 9 feet, including its branches. The blossom of the *Pignon d'Inde* is small; it is sustained like the *Rose*, on five leaves, round, and disposed in the form of a star. It is composed of five petals of light yellow, verging on green; within it there are six small leaves, which I have recognised by a magnifying glass to be the stamens of the flower. I have searched in vain for a pistil, until having dissected one of the flowers, I discovered that the foot of the petals is surrounded by five small globules of a very bright orange colour, and of rather soft consistence. I looked upon these globules as taking the place of the pistil. (In that I was deceived; according to M. Adanson, the flowers are some male and others female, and these last are situated below the first.) The fruit of the *Pignon d'Inde* is enclosed in a capsule of an ellipsoidal figure. All the capsules which I have opened were divided into three cells; each cell had its seed of a similar ellipsoidal form, covered with a dark grey skin, but with a white flesh, and of an agreeable taste; but it is necessary to beware of it. This fruit purges violently; it is composed of two lobes, separated by a skin or white membrane, which one might easily mistake for a flower. This pellicule appears to be the germ, and it is in this germ alone, they say, that the purgative quality of this nut belongs. By removing this skin, the nut can be eaten without risk. I went up to a tree, which I regarded as living, notwithstanding its colour, which appeared different to that of the other trees; when beneath the tree, I thought it was dead. This tree is the *Gayac*; its leaves from beneath are absolutely the colour of dead leaves; above they are green. The *Gayac* † forms a very lofty and fine tree. I have seen other trees which have several trunks from their branches; they throw down to the ground their fibres or filaments; these fibres having reached the ground, there take root, and form new trunks of which the branches multiply in the same way, so that one alone of these trees can at last form a forest. One of the officers who was with me at Rodriguez, gave to this tree the name of *Bauge*. ‡ François Leguat confounds it with the *Paretuvier* or *Paletuvier*, of Rochefort, to which he gives also the name of *Mangle*, or *Manglier*—*Mangrove*. I believe that it is one of the species of *Indian Figs* or *Malabar Figs*, of which *John Ray* gives a description in the 2d vol. of his *History of Plants*, Liv. 27, Chap. III., p. 1436. I have remarked also a *Creepier*, or *Liane* (*Liane* § is a name generical to express

* *Terminalia Benzoin*, commonly called "*Bois Charron*" (*Balf.*, 340). The Abbé de la Caille visited Mauritius in 1733, and Bourbon in 1751.

† *Diospyros diversifolia*. Professor Balfour says:—"One seldom meets with a large tree. In all the large oes I met with, the dark heart-wood was quite decayed, leaving a shell of newer wood outside. I was told by inhabitants that this rotting of the centre always takes place in this species after it attain a certain height." (*l. c.*, p. 355.)

‡ *Bois Puant*.—*Fœtidia mauritiana*, or *Clerodendron lanciatum*—perhaps, more probably, the latter, now named *Foix Cabri*.

§ *Corallodendron*.—*Erythria indica*? *Schotia* sp.?

* *Pignon d'Inde*, or *Physio-nut*—*Jatropha curcas*.

† *Gayac*? *Dombeya ferruginea* or *Bois pipe*?

‡ *Bauge*. *Ficus* sp.

§ *Liane sans fin*. *Cassytha filiformis*, or *Liane calé* = *Sarcostemma viminalis*.

* See *Gardeners' Chronicle*, April 25, 1891, vol. ix., No. 234, p. 520.

† *Bois d'Olive* = *Elæodendron orientale*. Pingré's observations are confirmed by Professor Balfour, who states that the leaves are heteromorphic. "The young ones are linear and acute; . . . from this we trace a succession of forms to the most mature, which are obovate . . ." (*Philos. Trans., Botany of Rodriguez*, p. 334)

every plant which binds itself to another—like the Vine, Pea, Nasturtium, &c.), which grows generally in some holes or cracks of the trunks of trees, and thence sends down filaments which having touched the earth, becoming trunks, envelop with their branches and sometimes entirely cover the trunk of the tree where this Creeper was produced. *S. P. Oliver.*

(To be continued.)

BERLIN BOTANIC GARDEN.

WE referred at p. 368, vol. ix., to the great transformations in the Berlin Botanic Garden on the basis of plant distribution, and we now propose reproducing the principal facts concerning the plantations, illustrating the vegetation of various parts of Europe, as given by Dr. Pax in the *Gartenflora*. He begins by saying that probably no other garden possesses plantations exemplifying the flora of Europe to the extent and exactitude that the Berlin garden does. Emerging from the eastern North American plantation, one enters the mixed forest of the plains, much as it is developed in central Germany. Tall-stemmed Elms, Oaks, and Horn-beams, interspersed with black Poplars, wild Pear and Apple trees, and common Maple, form a sheltering roof, under the shade of which flourish such plants as *Convallaria majalis*, *Circea lutetiana*, *Stachys sylvatica*, *Scrophularia nodosa*, *Paris quadrifolia*, *Campanula latifolia*, *Melica nutans*, and *Epipactis latifolia*; whilst in the more open spots *Anemone*, *Corydalis*, *Galanthus nivalis*, *Lathyrus vernus*, *Myosotis sylvatica*, *Viola sylvatica*, *Listera ovata*, and many other pretty spring flowers carpet the ground. The border of this mixed forest consists of shrubby Elms and Maples, *Prunus padus*, *P. spinosa*, *Salix cinerea*, *Viburnum opulus*, *Roses* and *Rhamnus*, with a few scattered herbaceous plants.

In striking contrast to the mixed forest is the contiguous Beech wood, consisting entirely of Beech trees, with an undergrowth of *Daphne Mezereum*, *Ribes rubrum*, *R. nigrum*, *Euonymus verrucosus*, and *Lonicera xylosteum*; and amongst the herbaceous plants almost constantly found in Beech woods planted here are *Tridentaria europæa*, *Vicia dumetorum*, *V. cassubica*, *Vinca minor*, *Asperula odorata*, *Hepatica triloba*, *Ranunculus lanuginosus*, *Rubus saxatilis*, *Astrantia major*, *Lilium Martagon*, *Carex digitata*, *C. montana*, *Thalictrum aquilegifolium*, *Corydalis cava*, *Lamium Galeobdolon*, *Milium effusum*, *Asarum europæum*, *Hypericum montanum*, *Phegopteris*, *Dryopteris*, and *Euphorbia dulcis*.

The Pine and Birch woods to the right of the Beech wood stand out conspicuously on account of their greater uniformity of composition. Few herbaceous plants grow under either Pines or Birches. Characteristic among plants that flourish under the former are: *Viola arenaria*, *Potentilla rubens*, *Scorzonera humilis*, *Anthericum ramosum*, *Gypsophila fastigiata*, *Dianthus cæsius*, *Astragalus arenarius*, and *Luzula pilosa*. The Pine forest passes gradually into the open heath, where Pines and Birches, and Juniper bushes are scattered singly over the Heather the herbaceous element, including patches of glaucous grasses, such as *Festuca*, *Aira*, and *Molinia*, interspersed with *Anemone Pulsatilla*, *Arnoseris minima*, *Helichrysum arenarium*, *Antennaria dioica*, *Jasione montana*, *Dianthus deltoides*, and the *Artemisia campestris*.

A small area close by is utilised to exhibit the characteristic features of the vegetation of a boggy moor, with such woody inhabitants as *Pinus uliginosa*, *Betula nana*, *Oxycoccus*, *Vaccinium*, *Andromeda*, and *Ledum*; and *Rhynchospora alba*, *Sedum villosum*, *Viola palustris*, *Lysimachia thyrsiflora*, *Drosera*, *Pedicularis*, and *Potentilla palustris*, are among the herbaceous plants.

Passing from the geographical formations described—from the mixed forest, the Beech forest, the Pine and Birch forest, the heath, and the moor, by a narrow and winding walk, which several times crosses an artificial brook, we ascend to the moun-

tain plantations. These are on a large scale, rising from 5 to 6 yards above the general level of the garden, and covering a considerable area. Thus, the part representing the alpine flora is nearly 45 yards long, and consists of three chains; the central one of granite, and the lateral ones of chalk. This rock garden, with steep declivities and variously coloured rocks, sheltering in their fissures the characteristic flowers, is a great attraction to visitors.

Before reaching the alpine quarter, the path leading from the plain leads through moist meadows, and then the vegetation of the lower hills, which gradually passes into that of the higher hills. First of all one crosses a meadow of the lower hills with its characteristic representatives, *Trollius*, *Geranium sylvaticum*, *Myrrhis odorata*, *Valeriana dioica*, *Cirsium rivulare*, *C. heterophyllum*, *Crepis præmorsa*, *Hieracium pratense*, *Colchicum*, *Orchis*, *Gymnadenia conopsea*, *Polygonum Bistorta*, *Senecio crispatus*, and *Veratrum*; and in drier places, *Arnica*, *Centaurea*, *Phrygia*, *Arabis Halleri*, *Primula elatior*, and many other species. The forest of the lower hills consists of Silver Fir, Spruce Fir, and Beech. The characteristic shrubs, which form part of the underwood in the tall forests, comprises *Lonicera nigra*, *Ribes Grossularia*, and others; whilst *Staphylea pinnata*, *Euonymus verrucosus*, *Pyrus terminalis*, *P. aucuparia*, *Acer pseudo-platanus*, *Sambucus racemosa* prefer, or are exclusively confined to the Beech forests. Characteristic herbaceous plants include *Saxifraga decipiens*, *Lamium maculatum*, *L. galeobdolon* var. *montanum*, *Dentaria bulbifera*, *Digitalis ambigua*, *D. purpurea*, *Calamagrostis arundinacea*, *Luzula angustifolia*, *Carex pendula*, *C. digitata*, &c. Here, too, is evident the greater richness of the Beech forest as against the coniferous forest, the former sheltering such plants as *Cypripedium calceolus*, *Thalictrum aquilegifolium*, *Aconitum variegatum*, *Salvia glutinosa*, *Euphorbia amygdaloides*, *E. dulcis*, *Asperula odorata*, and *Blechnum*, which are not found in the latter. Above the forests of the lower hills succeeds a shrubby of sub-alpine Willows (*Salix cæsia*, *S. arbuscula*, and others), and *Rhododendron hirsutum*, mostly near the streamlet. Here and there bushes of *Rosa alpina* appear, and in the shelter of the shrubs, or along the stream, grow *Aconitum Napellus*, *Rumex alpinus*, *R. arifolius*, *Epilobium trigonum*, *Saxifraga rotundifolia*, *Hieracium flavescens*, *Senecio crispatus*, *Streptopus*, *Mulgedium alpinum*; and among smaller plants, *Viola biflora*, species of *Androsace*, and many others. Clumps of the dwarf *Pinus montana* are likewise characteristic of this region.

At the foot of the alpine chain, and above the shrubby vegetation of the subalpine zone, are alpine meadows, in the short grass of which appear the beautiful flowers of various species of *Pedicularis*, *Gentiana*, *Viola lutea*, *Pulsatilla alpina*, *Geum montanum*, *Bartsia*, *Euphrasia Salisburgensis*, *Meum mutellina*, and *Polygonum viviparum*.

The real alpine flora of the European Alps is arranged on three parallel ranges of rocks, whereof the central granitic range represents the Central Alps and its peculiar flora, and the range, rising from the alpine meadows, consisting of chalk, contains the flora of the Northern Alps; whilst the range on the other side of the Central Alps, formed of limestone, supports the vegetation of the Southern Alps.

It would occupy too much of our space to enter into full particulars of the plants of these three ranges; but the differences in the floras of the granitic and limestone mountains are specially interesting. There are further subdivisions, too, illustrating the peculiarities of the vegetation of more restricted districts.

The principal other mountain chains of Europe are reproduced in relation to the Alps as near as possible in accordance with their actual positions. At one end are the Pyrenees, and at the other, abutting on the eastern Alps, are the Balkan and Carpathian mountains; beyond which rises the mountains of Asia, beginning with the Bithynian Olympus, succeeded by the West and East Caucasus,

the Pontic and Armenian Mountains, the Lebanon and Taurus.

The question now arises, how far such a scheme of illustrating the geographical distribution of plants can be successfully carried out in so small an area as the Berlin Botanic Garden, of which, of course, the geographical plantations only occupy a portion, though a tolerably large portion. Our own idea is, that accurate as the scientific arrangement may be, and attractive as the grouping may be, in the early years of its existence, while the trees are still small, it would be impossible for them to become grown-up forests, or fully developed pictures of the vegetation of the various regions. Therefore the aim at instruction fails to a very great extent, and the plants and their labels are not so accessible to the public as they would be in mixed plantations and beds. Even in grounds so extensive as Kew Gardens, we should be sorry to see any strictly geographical arrangement adopted, because we think the necessarily artificial aspect of it would destroy the charm of the place. As it is, there are many beautiful and adequately representative groups of plants at Kew; and although the rock garden is doubtless susceptible of improvement, it is admirably adapted for a large number of persons being able to see a large number of plants without discomfort. In the Berlin plantations, we understand that the paths are, many of them, so narrow that the public is shut out from them altogether, and the plants are so far off that their beauties are not easily perceptible, and the labels so distant as to be illegible. *H.*

THE APIARY.

EXTRACTING HONEY.

As soon as frames in hives arranged for extracting are full of honey and capped, they should be taken out, passed through the extractor and returned to the bees to be refilled. A greater yield is the result. It is important to wait till sealing has taken place, as honey extracted from uncapped combs is thin and not properly ripened. It also has not the full aroma, and is liable to fermentation. Some amount of preparation is required before commencing extracting, and it should be done some distance from the apiary, preferably in an outhouse or other building containing a window, so that any bees brought in on the combs can escape, and at the same time robbers be prevented from gaining an entrance. It is necessary to have two uncapping knives, so that one can be getting hot while the other is being used. A lamp with boiler attached in which to place the knives, is sold for this purpose, but it is easy to improvise something of the kind that will answer the purpose almost equally well. The knives should be very sharp, and a cloth must be in readiness to wipe them on when taken out of the water. It is also advisable to wear an apron to protect the clothes, as honey is as bad, or worse, than grease to get rid of. A tray or large dish is required to stand the frame on whilst uncapping, and it is almost as well to make a wooden tray for the purpose, on which two pieces of wood can be tacked to form the shape of the letter L, against which the lug of the frame can be held, and so prevented from slipping. As the cappings are taken off, they should be put at once into a strainer, as a lot of honey drains from them. Whilst cutting, the frame should be inclined towards the hand holding the knife, and it is possible after a little practice to slice off nearly all the cappings on one side at one operation, if the surface is fairly even. When the extracting is finished, the honey must be strained, and the best thing for the purpose is a properly constructed honey-strainer and ripener. If this is not on hand, the next best thing is to tie a piece of coarse flannel over the mouth of a large earthenware vessel, into which slowly run the honey from the extractor. When the latter has emptied itself, it should be cleaned and the cage taken out, and the strained honey put back, and it is well to let it remain for some days before commencing to bottle it. *Expert.*

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1891.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

. Fuller details will be given in the following number. See also Leading Article on page 104.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.	
SCOTLAND.											
ABERDEEN.....	Under average; good Average	Average; good Very good	Average; good Good	Under average; good Bad	Not grown outdoors	Not grown Very good	Much under average; good Very good	Over Average; very good Average	Not grown	John Forrest, Haddo House, Aberdeen Simon Campbell, The Gardens, Fyvie Castle, Aberdeen	
ARGYLL.....	Much under	Under	Under	Average; good	Not grown outside	Under	Average; good	Average; good	.....	G. Taylor, Castle Gardens, Inverary
AYR.....	Under Average; good	Under Under average; bad	Under Average; good	Under Average; good	Under	Under	Under Average; good	Under Average; good	.....	N. McKinnon, Dumfries House Gardens, Cunnock William Priest, Eglinton Gardens, Irvine
CLACKMANNAN.....	Average	Under	Average	Average	Not much grown here	Not much grown here	Average	Average	Under	Thomas Ormiston, Alloa House Gardens, Alloa	
DUMBARTON.....	Good crop	Under; good	Under; good	Over; good	None outside, good in houses	Not grown here	Over; good	Over; good	.....	James Mitchell, Camis Estean, Helensburgh
EAST LOTHIAN.....	Under Under average	Average Average	Over; good Average	Average; good Average	Under; good Under average	Under; good Under average	Average Over average	Average Average	..... Under average	James Morrison, Archfield Gardens, Drem L. Dow, Newbyth Gardens, Prestonkirk
FIFE.....	Under; good Average	Average; good Average	Average; good Over average	Average; good Average	Average; good Average	Under; good Below average	Average; good Very good	Average; good Below average	.....	R. P. Brotherston, Tynninghame Robert Gossip, Crawford Priory, Cupar
FORFAR.....	Under Average; good Average	Under Under; bad Average	Average Average; bad Average	Average; very good Average; bad Average; good	..... Average; good .....	..... Over; very good .....	..... Average; good Over; very good	..... Average; very good Over; very good	.....	George Ramsay, Fordell Gardens, Inverkeithing Jas. Whitton, Glunis Castle Gardens, Forfarshire James Mitchell, Panmure Gardens, Carnoustie
INVERNESS.....	Bad	Under	Under	Bad	.....	.....	Average	Average	.....	William McDowall, Brechin Castle Gardens, Brechin James Manson, Killavock, Fort George Station
KINCARDINE.....	Under	Average	Average	Over	.....	.....	Average	Average	.....	J. M. Gairns, Arbutnott Gardens, Ffordoun
KINROSS.....	Under; good	Under; good	Under; bad	Average; very good	.....	.....	Under; good	Over; very good	.....	John Fortune, Blair Adam, Kinross
MIDLOTHIAN.....	Average; very good	Average; very good	Average; very good	Average; very good	Under; good	Average; very good	Over; very good	Heavy crop; very good	Average; good	Malcolm Dunn, Dalkeith Palace Gardens, Dalkeith	
MORAYSHIRE.....	Average; good Under	Average; very good Under	Average; good Over	Under average; bad Under	Under; very good Average	Average; very good Over	..... Average; good	..... Average; good	.....	Chas. Webster, Gordon Castle, Fochabers Donald Cunningham, Darnaway Castle Gardens, Forres
NAIRN.....	Under	Under	Under	Under	Under	Under	Average; good	Average; good	.....	James Muirland, Cawdor Castle
ORKNEY.....	Under average	Under average	.....	Average; good	Over average	.....	Under average	Average	.....	Thos. MacDonald, Balfour Castle Gardens, Kirkwall
PEEBLES.....	Abundant; good	.....	Under	Under	.....	Under	Poor crop	Over; good	.....	Malcolm McIntyre, The Glen, Innerleithen
PERTH.....	Under Under average Average; good Good Over; very good Very good	Average Average; full average on walls Average Good Average; good Average; good	Over Average on walls, none on standards Average Very good	Average Average Average; good Over; very good Good Average; Gooseberries under Average; good Very good Over; good Average Average; late; very good Very good Over; good Very good George Croucher, The Gardens, Ochtertyre, Crieff John Robb, Drummond Castle Gardens, Crieff P. W. Fairgrieve, Dunkeld Gardens, Dunkeld G. Goodfellow, The Gardens, Kinfauns Castle Henry Maxwell, Balston Gardens, Paisley
RENFREW.....	Over average Average; good Average; over	Average Under Average	Under Average Average; good	Average Under Average Average; under Average; under Average; good Average; good; very good
ROXBURGH.....	Under	Average	Average	Under	Under	Under	Average	Average	.....	R. G. Milne, The Gardens, Minto, Hawick
STIRLING.....	Average	Under	Under	Average	Under glass, over average; very good	Under	Over average	Average	.....	M. Temple, Carron House, Falkirk
SUTHERLAND.....	Average	Average	Under	Under	.....	.....	Good	Very good	.....	M. Fitzgerald, Dunmore Park, Stirling
WIGTON.....	Under	Under	Under	Average	.....	.....	Under	Average	Average	D. Melville, Duorobin Castle Gardens
WIGTON.....	Over; very good	Average; good	Average; good	Average; good	.....	.....	Over; very good	Over; very good	.....	W. Cruick, Castle Kennedy
ENGLAND—NORTHERN COUNTIES.											
NORTHUMBERLAND.....	Over; good Average	Over; good Average; good	Over; very good Average	Over; good Very good	Over; good Good	Average; good Under; good	Over; good Over; very good	Over; good Average; good Under
WESTMORELAND.....	Under; bad	Under	Under; bad	Morellos good	Under	Average; good
DURHAM.....	Under Average Average; good Bad	Under Under Under; good Bad	Under Under Under; good Bad	Under Average; good	Under	Under	Under Under; bad Under; very good Bad, except red Currants	Under Under; bad Average; good Very good Under Bad
YORK.....	Under	Average	Under; bad	Average	Not grown outdoors Under; bad	Under	Average	Average

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
NORTHERN COUNTIES.										
YORK.....	Under; good	Under; good	.....	Under; bad	Under; good	Under; good	Under; good	Average; good	.....	Thomas Jones, Ribston Hall Gardens, Wetherby
	Under	Under	Under	Under	Under	Under	Average	Over	Under	Robert C. Kingston, Brantinghamthorpe
	Average	Under average	Under average	.....	Average	Average	Under average	Under average	.....	Robert Cock, Edenthorpe, Doncaster
	Under	Under	Under	Under	Under	Under	Under	Average	Under	Wm. Chnck, Brodsworth Hall, Doncaster
	Average	Good	Average	Bad	Average	Bad	Good	Good	Bad	William Culverwell, The Gardens, Thorpe Perrow, Bedale
	Under	Under	Under	Average	Under	Under	Under, except Raspberries, above average	Average	Under	Thos. Lambert, Burton Constable, Hull
LANCASHIRE.....	Average	Average; early sorts over average	Bad	Morellos average	.....	.....	.....	Average	Bad	William Barber Upjohn, Worley Hall, Worsley, Manchester
	Average; good	Under; bad	Average; good	Under; bad	.....	.....	Average; very good	Average; very good	.....	W. P. Roberts, The Gardens, Cuerdon Hall, Prestoo
	Average	Under	Under	Morellos good	.....	.....	Average	Good	.....	S. McMaster, Gawthorpe Hall, Burnley
	Under; good	Over; very good	Under	Average	Average; good	.....	Over; very good	Over; very good	.....	J. Hathaway, The Gardens, Latham House, Ormskirk.
EASTERN COUNTIES.										
LINCOLN.....	Average; good	Over; good	Over; good	Average; good	Under	Average; good	Over; good	Over; good	Under	James Seth, Florist, Thirby, Bourne
	Over; good	Over; good	Under; bad	Under; bad	Average; good	Over average; good	Under	Under	Under	David Lumsden, Bloxholm Hall
	Over average	Average	Average	Average	Not grown cut doors	Under	Under average	Average; good	Under	John Rowlands, Eardney Manor Gardens
	Average	Under	Under	Average	Average	Under	Under	Average	.....	Thomas Vinden, Harlaxton Manor, Grantham
	Under	Average; good	Over	.....	Average	Under	Average	Over; very good	.....	—, Casewick, Stamford
CAMBRIDGE.....	Under	Under	Under	Under	.....	.....	Under; bad	Over; good	.....	Andrew Grant, The Vineries, Willingham
NORFOLK.....	Average	Over average	Over	Under	Average	Under	Average	Over average; good	Under	H. Batchelor, Catton Park, Norwich
	Under	Over	Over	Under	Average	Over	Average, except Gooseberries	Average	Average	J. Reeves, Shotesham Park, Norwich
	Under	Under	Under	Under	.....	Very good	Under	Average; but small	Under	F. Lee, Lyoford Hall, Mundford
SUFFOLK.....	Average	Average	Average	Under	Under	Average	Average	Average	Under	John Wallis, Orwell Park, Ipswich
	Average	Average	Over	Under	Average	Over	Under	Average	Under	D. T. Fish, Hardwicke, Bury St. Edmunds
	Under	Over	Under	Under	Under	Average	Over	Average	Under	J. Sheppard, Woolverstone Park, Ipswich
	Average; good	Average; good	Over; good	Under; bad	Average; very good	Average; good	Over; very good	Over; very good	Average; good	H. Rogers, Rendlesham Gardens, Woodbridge
ESSEX.....	Average; good	Under; good	Under; bad	Average; bad	Average; good	Under; good	Average; good	Under; good	Average	Geo. Eden, Henham Gardens, Wangford
	Average; good	Average; good	Average; good	Under; bad	Over; very good	Average; very good	Average; very good	Over; very good	.....	Arthur Coock, Havering Park Gardens, Romford
	Average; good	Average; good	Over; bad	Over; good	Over; good	Average; very good	Average; good	Over; good	Average; good	James Douglas, Great Gearies, Ilford
	Over	Over	Over; very good	Average	Average	Over	Over	Average	Under	William Earley, Double House, Ilford
	Average; good	Average; good	Over; very good	Over; very good; Morellos over; good	Over; good	Under; good	Under; good	Average; very good	Under	James Vert, Audley End Gardens, Saffron Walden
	Average; good	Under average; good	Over average; good	Average; good	Average; good	Average; good	Average; good	Over average; good	.....	Chas. Butler, Parndon Hall Gardens, Harlow
MIDLAND COUNTIES.										
DERBY.....	Average	Average	Average	Average; good	.....	Average	Average; black Currants over	Average; good	Under	Thos. Keetley, The Gardens, Darley Abbey
	Average	Average	Over; good	Average	.....	Average	Under	Under	Under	I. H. Goodacre, Elvastou Castle Gardens
	Average; very good	Average; good	Average; very good	Under; bad	.....	Under; bad	Average; good	Average; good	Average; good	F. F. Jeal, Willersley, Cromford
NOTTINGHAMSHIRE.....	Over; good	Over; very good	Under	Average	.....	.....	Average	Average	Under	John Horton, Welbeck Gardens, Worksop, Notts
	Under; good	Under; good	Average; good	Under; good	Under; good	Under; good	Average; very good	Average; very good	Under; bad	Amos Parr, Holme Pierrepont, Nottingham
	Average	Under	Average	Average	Average	Under	Under	Average	Under	J. A. Woods, Osberton Gardens, Worksop
	Under	Under	Under	Average	.....	Under	Under	Average	Under	A. Heederson, Thoresby, Ollerton
	Under; good	Under; bad	Under; bad	Under; bad	.....	Under; good	Under; good	Over; good	.....	A. Young, Anoesley Park, Nottingham
LEICESTERSHIRE.....	Average; good	Average; good	Over; good	Average; good	Average; good	Average	Average	Over; good	Under	Alfred Hamshere, Beaumanor Gardens, Loughborough
	Under	Over; good	Over; good	Morellos over	Average	Under; good	Under	Over	Under	William Ingram, Belvoir Gardens, Grantham
RUTLAND.....	Over; very good	Over; very good	Over; good	Average; good	Average; very good	Over; very good	Average	Over; very good	Average	W. H. Divers, Ketton Hall Gardens, Stamford
	Average	Under	Average; good	Average; good	Under	Under	Under	Average	Under	Henry Mason, Bi-brook Hall Gardens, Uppingham
	Average; good	Average; good	Average; good	Under; bad	Average; good	Average; good	.....	Over; good	Under; good	W. Dudge, Barleythorpe Gardens, Oakham
WARWICK.....	Bad	Bad	Under	Under	.....	Under	Under	Under	Under	William Miller, Combe Abbey, near Coventry
	Average	Over; good	Over; good	Average; good	Average	Over; very good	Average	Average; good	Under	James Rodger, The Gardens, Charlecote Park
	Average	Good	Very good	Very good	.....	Average	Very good	Average	Average	John Bower, Culdecote Gardens, Nuneaton
	Average	Over	Average	Average	Under	Under	Average	Good	.....	F. Ballard, Stoleleigh Abbey, Kenilworth
	Under	Good	Good	Average	Under	Under	Average	Under	.....	James Campbell, Biddulph Grange Gardens, Congleton
STAFFORD.....	Average	Under	Over; very good	Average	Over	Average; good	Over; very good	Over; good	Average	Henry G. Wilks, Sandon Hall, Staffs

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
MIDLAND COUNTIES.										
STAFFORD	Under; good	Under; good	Under	Average; good	.....	Under; good	Average; good	Average; good	.....	J. Wallis, Keele Gardens, Newcastle-under-Lyne
	Average	.....	Over	Average	Over	Over	Over	.....	Bad	T. H. Ribone, Alton Towers, Cheddle, Stoke-on-Trent
	Under	Under	Under	Average	.....	Under	Over	Over; very good	Average	William Ward, Little Aston Gardens, Sutton Colfield
NORTHAMPTON	Under	Average	Under	Under	Under	Under	Average; good	Average; good	Under	J. Trigger, Milton Gardens, Peterborough
	Average	Over	Under	Average	Over	.....	Average; good	Average; good	.....	W. S. Miller, Whittlebury, Towcester
	Average; good	Average; good	Average; good	Under; bad	Over; good	Average; good	Average; good	Over; very good	Average; good	H. Turner, Fineshade Abbey Gardens, Stamford
BEDFORD	Under; good	Average; good	Over; good	Average; good	Over; good	Over; good	Under; good	Under; good	Under; good	George Ford, West Park, Amphill
	Average	Average	Average	Morellos under	.....	Average	Under	Average	Under	Alexander McKay, Woburn
	Average; under	Average	Average	Under	Average; good	Average; very good	Over; very good	Over; good	Under	Charles Turner, Cranfield Court, Newport Pagnell
BUCKINGHAMSHIRE ..	Average; good	Under	Under	Under	Average; good	Average; good	Average; good	Over	Under	I. Smith, Montmore, Loughton Buzzard
	Under	.....	Under	.....	.....	.....	Under	Under	Over	L. W. Shrimpton, Aston Clinton, Tring
	Average	Average; very good	Under	.....	.....	Bad	Under	Over; good	Under	J. Bloxham, Brookhall Manor, Blechley
	Average	Under	Over	Average	Over; very good	Over; very good	Average	Average	Average; good	James Thomas, Shardloes Gardens, Amersham
	Under	Under	Over; good	Average; good	Average	Over; good	Average; good	Average; good	Under	Chas. Herrin, Dropmore, Maidenhead
	Under	Under	Very good	Good	Average	Average	Good	Very good	Average	W. Waters, Bulstrode Gardens, Gerard's Cross, Slough
	Over average	Over average	Average	Over average	Over average	Over average	Over average	Average; except black Currants	Average	Under average	Geo. Thos. Miles, Wycombe Abbey Gardens, High Wycombe
HERTFORD	Under	Over	Average; good	Over	Average; good	Over; good	Over; good	Over; good	Under	Joseph Fitt, Panshanger Gardens, Herford
	Under	Average	Over	Under	.....	.....	Average	Average; good	.....	Floos. Bodley, The Gardens, Puttbridge Park, Luton
	Under	Over; good	Over; very good	Average; good	Average; good	Over; very good	Over; good	Average	Under	James C. Mandell, Moor Park Gardens, Beckmansworth
	Under; good	Over; good	Over; good	Average; good	.....	Over; good	Over; good	Under; good	Over; good	Joseph Thompson, Gorbamby Gardens, St. Albans
	Over; good	Over; good	Over; good	Average; good	Over; good	Under	Over; very good	Over; very good	Over	J. Kipling, Knebworth House, Stevenage
	Average	Good	Average	Good	Average	Very good	Raspberries and red Currants; average; black; under; good	Average; good	Good	E. Martin, The Hoo Gardens, Welwyn
	WESTERN COUNTIES.									
GLOUCESTERSHIRE	Average	Average	Under	Under; bad	Average; good	Over; very good	Average	Average	Under	William Nash, Bidminton Gardens
	Average; good	Over; good	Over; good	Under	Over; good	Over; good	Under	Average; good	Average	Alexander Scott, Sherborne Gardens, Northleach
	Over	Average	Average	Under	Average	Average	Over	Average	Under	W. Greenaway, Dodington, Chipping Sodbury
	Average	Over	Average	Average	Average; good	Average; good	Average	Over	Under	John Sowray, Highnam Court Gardens
	Average	Average; good	Average; good	Average	Average; very good	Average; very good	Average; good	Average; good	Under	Arthur Chapman, Weston Birt Gardens, Tetbury
MONMOUTH	Average	Under	Under	Under	.....	Under	Average	Average	Under	Thomas Coomber, The Hendre Gardens, Monmouth
HEREFORD	Average; good	Average; good	Under	Over; very good	Under; good	Average; good	Average; good	Average; good	.....	A. Ward, Stoke Edith Gardens, Hereford
	Under	Under	Under	Under	Average	Average	Over	Over	Under	Kenneth McKenzie, Allensmore Court, Hereford
WORCESTER	Under; good	Average; good	Over; good	Under; bad	Average; good	Over; very good	Average; good	Over; very good	Under	W. Crump, Madresfield Court, Malvern
	Under; very good	Under; very good	Over; good	Under; good	Over; good	Average; good	Average; good	Average; good	Average; good	John Austen, Witely Court, Stourport
	Average	Under	Over	Under; good	Average	Average	Average; good	Average; good	Average	James Aston, Cotheridge Court, near Worcester
SHROPSHIRE	Over; good	Average; very good	Over; good	Average; good	Under	Average; good	Over; very good	Average; good	Under	Walter Child, Croome Court, Severn Stoke
	Average; good	Over; very good	Average; good	Average; good	Average; good	Under	Average; good	Over average; bad	Under	A. S. Kemp, Houghton Gardens, Shifnal
	Average; good	Under; bad	Over; good	Under; bad	Under; bad	Under; bad	Under; bad	Over; very good	Over; good	Neil Sinclair, The Gardens, Park Hall, Oswestry
CHESHIRE	Average	Average	Under	Under	Average	Average	Under	Average	.....	James Louisa, The Quinta, Chirk
	Over	Average	Under	Under	.....	.....	Average	Average	.....	Robert Mackellar, Arley Hall, Cheshire
	Average; good	Under; good	Under; good	Average	Under; bad	Under; bad	Under	Over; very good	.....	Jno. V. Smith, Arley Hall Gardens, Northwich
SURREY	Over	Over	Over	Average	Average	Under	Average	Average	Under	Wm. Whitaker, Crewe Hall, Crewe
	Under	Average	Over; good	Under	.....	.....	Over; good	Average; good	.....	James Dale, Rode Hall Gardens, Scholar Green
	Over; good	Over; good	Over; good	Average; good	.....	Over; very good	Average; very good	Over; good	Over; good	James Gold, High Ashurst, Dorking
SOUTHERN COUNTIES.										
MIDDLESEX	Under; good	Under; good	Under; good	Over; good	Over; very good	Over; very good	Average; except black Currants	Average; good	.....	George Wythes, Syon House Gardens, Brentford
	Under	Average; good	Average; good	Average	Average; good	Average	Average; good	Under	.....	John W. O'lell, The Grove, Stanmore
	Average	Average	Average; good	Average	Average	Under	Average	Average; good	.....	William Bates, Poulett Lodge, Twickenham
SURREY	Under	Average; good	Over; good	Under	Over; good	Over	Over; good	Over; very good	Over	A. Evans, Lythe Hill, Haslemere
	Under	Average; good	Over; good	Under	Average; good	Average; good	Over; very good	Over; good	Average; good	J. Tauer, The Gardens, Tandridge Court, Godstone
	Over; good	Over; good	Over; good	Average; good	.....	Over; very good	Average; very good	Over; good	Over; good	James Gold, High Ashurst, Dorking

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
SOUTHERN COUNTIES.										
KENT (See Leader Page.)	Over; very good Average; good	Over; good Over; very good	Average; good Over; very good	Under; bad Average; good	Over; good Over; very good	Over; good Average	Under; bad Average	Over; bad Over; very good	..... Average	F. Moore, The Gardens, Blendon Hall, Bexley Wm. Craik, Hothfield Place Gardens, Ashford
SUSSEX	Average; good Over; good Average; very good Average; good Under	Average; good Over; good Very good; over Average; good Average	Over; good Over; good Under Average; good Over average	Under; good Over; good Under Average Average	Under; good Average Average; good Average; good Average	Over; good Under Over; good Over average	Average; good Over Under Under Average; very good	Average; good Over; good Average; good Under; good Average; very good	Average; good Average Average; good Under Under average	G. A. Don, Bedgebury Park, Hawkhurst J. Rust, Bridge Castle, Tunbridge Wells Alex. Reed, jun., Cross-in-Hand, Hawkhurst Fredk. Greson, Cowdray Park, Midhurst Frederick Rutland, Goodwood, Chichester
HANTS	Over; good Average; good Average; good Under	Over; very good Over; very good Average; good Average	Average; good Over; very good Average; good Over average	Over; good Over; very good Under Average	Over; very good Over; very good Average; good Over; very good	Over; very good Average; good Average; good Under	Average Over; good Over; good Average; very good Average	Average Average; good Average; good Average; very good Average; not large	..... Average Under	A. Maxim, Heckfield Place, Winchfield E. Molyneux, Swanmore Park gardens, Bishop's Waltham William Smythe, The Gardens, Basing Park, Alton George Rea, Heron Court, Christchurch
BERKS.	Average Average; bad Good Under Over	Over; good Over; good Average Over; very good Average	Over; good Over; good Over Over; very good Over	Average Average; good Average Over; very good Average	Average; good Average Average; very good Average; good Average	Under Over; very good Average; very good Over; good Under	Average Under Average Over; very good Average	Average Under Average; not large Average; good Average; very good	..... ..... Under Under Under	James Tegg, Bearwood, Wokingham J. Rose, Lockinge Gardens, Wantage Robert Fenn, Sulhamstead, near Reading George Stanton, Park Place Gardens, Henley-on-Thames James Strachan, Rosehill House Gardens, Henley-on-Thames
WILTS.	Average Under; good	Under Under; good	Average Average; good	Under; bad Average; good	..... Over; good	Under Average; good	Average Over; good	Average Over; good	Under; bad Average	Thomas King, The Castle Gardens, Devizes H. W. Ward, Longford Castle, Salisbury
SOUTH WESTERN COUNTIES.										
SOMERSETSHIRE	Under	Under	Average	Average	Average	Under	Average	Average	Under	W. Hallett, Cossington House Farm, Bridgwater
DORSETSHIRE	Average Average	Over; very good Average	Over; very good Average; over	Average; good Average; good	Average; good Average	Over; very good Average	Over; good Average; over	Average Average; good	Average Average	T. H. Crisp, Cunford Manor Gardens, Wimborne William P. Leach, Bryanston Gardens, Blandford
DEVON	Over average Under; good Under average	Average Average; good Average	Over average Over; good Under average	Average Average; good Good	Over average Average	Over average	Average; very good Over Very good	Average; very good Over; good Under	Average Bad	James Enstone, Wear, near Exeter G. J. Barnes, The Gardens, Stoodleigh Court, Tiverton Geo. Baker, Membland, Plymouth
CORNWALL	Under; bad Under Under Under; bad	Average; good Under Average Average	Over; good Under Average Under	Under Average Under Under	Average; good Average Under Under	..... ..... ..... .....	Over; good Under Over Average; good	Under; good Over Over Average; good	Over Under Average	James Murton, Peacalenick, Truro A. Mitchell, Tehidy Park, Camborne George Knox, Port Eliot, St. Germans Chas. Lee, The Gardens, Bocomor, Lostwithiel
WALES.										
ANGLESEY	Under	Average	Under	Under	Average	Average	Under	Over; average	Average	John Owen, Henllys, Beaumaris
CARMARTHEN	Under	Under	Average	Under	Average	.....	Average	Average	Under	Lewis Bowen, Edwinstford, Llandilo
CARNARVON	Under	Under	Under	Under	.....	.....	Very good	Over; very good	.....	Allan Calder, Vaynol Park Gardens, Bangor
DENBIGH	Average; good Under	Average; good Under	Under; good Average	Under; good Morellos very good Average; good	Average; good Very bad Under	Average; good Under Average	Under; good Under Average; good	Average Average Average; good	..... ..... Under	P. Middleton, The Gardens, Wynstay, Ruabon Walter Weir, The Gardens, Acton Park, Wrexham J. Williams, The Gardens, Bodlwyddan, Rhnddian
FLINTSHIRE	Under	Under	Under	Average; good	Under	Average	Average; good	Average; good	Under	Richard Milner, Penrice Castle Gardens, near Swansea
GLAMORGAN	Average; good Under	Average; good Average	Over; very good Over	Over; very good Average	Over; very good Average	Under Average	Over; very good Over	Over; very good Over	Average; good Average	T. Muir, Margam Park, Port Talbot
MERIONETH	Average	Under	Average	Average	.....	.....	Under	Average	Under	Gas. Bennett, Rhug, Corwen
PEMBROKE	Under; bad	Under; bad	Average	Average; good	..... Bad	..... .....	Average Average	Average Good	..... .....	Geo. Griffin, Slebeck Park, Haverfordwest
IRELAND.										
ANTRIM	Average; very good	Average; good	Under; bad	Average; very good	.....	.....	Average; very good	Average; good	.....	Geo. Portvons, Garron Tower
ARMAGH	Under average	Under average	Under average	Average	Under average	Under average	Under average	Under average	Under average	Thomas Sheasby, Castle Dillon
DOWN	Under; very bad Bad	Under Very good	Average Good	Average Good	..... Under	Average Under	Average Very good	Average Good	..... Average	Jas. Taylor, Mountstewart, Newtownards John Igoe, Garden Vale, Athlone
WESTMEATH	Under	Under	Average	Average; good	.....	.....	Average	Average	Under	William Gray, Woodstock, Instigoe
CHANNEL ISLANDS.										
JERSEY	Under; good	Under; good	Over; good	Over; good	Over; good	Under; good	Under; bad	Over; good	.....	Charles B. Saunders, St Saviour's
GUERNSEY	Average	Over	Average	Average	Over	Average	Average; good	Over; very good	.....	Chas. Smith & Son, Caledonia Nursery
ISLES OF SCILLY	Average	Average	.....	.....	.....	.....	Average	Average	.....	Jas. Jenkin, Tresco Abbey Gardens

FORESTRY.

PLANTATIONS recently formed on Heather ground and elsewhere should be examined at this season, and all weeds, grass, and surface scrub that are found to be smothering the plants should be cut over at the surface of the ground, to allow the plants space to branch out and form the nucleus of valuable timber trees. As this work proceeds, any rival leaders that appear at the top should be cut back, pointed, or removed altogether close to the stem with a sharp pruning-knife, care being taken to leave a smooth sloping surface to prevent the lodgment of water. Rambling side branches should be cut back, in order to form a uniform well-balanced top, and in doing so the piece to be removed should be cut off at the base of a lateral twig.

Young hedges should be weeded, and the surface of the ground broken up with the hoe and rake, to admit air and promote root action. After a growth of some two or three years, pruning becomes necessary, and may now be commenced, in order to gradually form the hedge into the desired shape. The best shape is that of wedge—broad at the base, and gradually tapering to a thin point at the top. When hedges are formed in this way, the whole surface of the plants from base to top is exposed to the influence of the atmosphere, which has a beneficial effect in promoting the healthy development of the plants, and preventing blanks. Young ornamental plantations should be dressed with the hoe and rake, to kill weeds and subdue undergrowth, and on no account should noxious weeds be allowed to ripen their seeds.

In the nursery department, seed-beds should be carefully hand-weeded, and in cases where the surface has formed a hard crust, it had better be broken up with a sharp-pointed peg, to admit air and promote the growth of the plants. Hoe and rake between the rows of forest and ornamental trees and shrubs, to promote root-action, and accelerate the growth of the plants. Some hardy species of weeds are apt to mature their seeds when lying on the ground, so that they had better be collected at once, and consigned to the rot-heap for manure. The berries of Mountain Ash, Hawthorn, Holly, and such-like, that were formerly stowed away in sand-pits to rot, should be turned, in order to promote the uniform decomposition of the mud. Spring-grafted trees and shrubs should be examined, and all superfluous growths of whatever kind should be removed. Loosen, nutie, and sort the grafts in such a way as to promote the growth of the scion, and as the circumstances of the case may suggest.

Examine bridges and bridle-paths in the deer forest and grouse moors, and have them put in a thorough state of repair where necessary before the 12th of next month. Mountain-paths are apt to be torn up and damaged by floods after the breaking up of a snow-storm. In order to counteract this state of things, I have found it a good plan to sow the seeds of some of the hardy deep-rooting grasses, as their roots bind the loose material, and in a great measure prevent the stuff from being washed away by rain, and thus afford firmer and better footing for hill ponies and pedestrians. *J. B. Webster.*

GRAPES CRACKING AND SCALDING.

THERE are varieties of Grapes which seldom, if ever, crack or scald, while others are peculiarly liable to these evils, Lady Downe's, perhaps, suffering the worst from scalding, and Madresfield Court from cracking of the skin of the berry; indeed, so much so, in some places, that gardeners have partially or entirely given up its cultivation; which is to be regretted, as without question it is one of the finest Grapes, and deserves every care and attention. Not only are the berries large and of good appearance when fully grown, but the flavour is rich and piquant, and is only excelled by that of the Muscat of Alexandria.

One, and the primary, reason for the splitting of the berries of Madresfield Court, is the thinness of the skin; and the next, any check to their swelling through dryness of soil and heavy waterings, or the soaking of the border by heavy rain, after which the expansion through the increased and rapid flow of sap is so great that the skin of the berries gives way at once.

We find just the same sort of thing takes place with Cherries and Gooseberries when a long drought is followed by heavy rain. In this case the skin of the fruit has, through the first cause, lost in elasticity, which seems to be greater among some kinds of fruit than others. To prevent the cracking of

of air betimes in the morning, and then putting on too much at once, which the sensitive skin of the fruits feel, and evils naturally follow.

When Grapes are ripening, be they of what variety they may, but more particularly the black varieties, I like to have the roof-ventilators slightly open by night, and just sufficient heat in the pipes to keep up the temperature to a point above 65°, as then there is no condensation of moisture on the berries in the morning, and colour is sure to be good if the Vines are in health. Scalding is brought about as much by lowness of temperature during the night and early morning as from heat, as the berries become quite cold, and it is the sudden transition from the one to the other that affects them, although many think the scalding is caused by the sun. If this were so, it stands to reason that only those berries would be affected that are exposed; but when scalding takes place, it will generally be found that bunches which are shaded by ample foliage suffer just as badly as any others, and this proves that it is not so much the direct action of the sun as its effects in quickly raising the heat and generating steam, or causing moisture to arise and condense on the berries, when the mischief ensues.

It will be seen, then, that the remedy against blister is on all fours with, or similar to that to prevent cracking, so far as airing and firing are concerned, as before daybreak there should be a genial warmth in the house, and no sudden rush of heat brought about by the sun bursting forth. Watchful and careful ventilating will prevent this, as by having gentle fires when the weather is adverse and cold, sluggish vapours are expelled, and a buoyant healthy atmosphere is kept up, under which favourable conditions Grapes will not crack, mould, or scald, but finish off with that beautiful bloom so pleasing to the eye of a gardener. *J. Sheppard.*



FIG. 13.—CALLICARPA PURPUREA: BERRIES SHINING LILAC. (S. L. 1891.)

the Madresfield Court Grape, various expedients have been adopted, some of these being the notching or part severance of the fruiting shoots, and in opposition to this allowing the laterals to run wild, and act in some degree as a safety-valve to use up suddenly-acquired sap. Both may answer very well under certain conditions, but the better course to adopt, if the roots of the Vines are outside, is to protect the border from heavy rain after the Grapes have reached their full size, and have put on some colour, up to which stage free waterings should be given, if the weather is at all dry; and if the roots are inside, they are then under control. Another cause of the splitting of Grapes is, sudden transitions from heat to cold, or *vice versa*, and the not giving

TREES AND SHRUBS.

MENZIESIA.

THIS interesting genus of small flowering shrubs is found in different parts of North America, Asia, Europe, Scotland, and Ireland. The following kinds are all perfectly hardy, and although they are generally spoken of and treated as peat-soil shrubs, yet they are by no means confined to that class of soil, and with a little care they may be grown with success on any ordinary texture of soil, providing it is thoroughly drained and well broken-up previous to planting. The Empetrum-like *Menziesia* (*M. empetriformis*) is indigenous to North America, and was introduced into this country about the year 1810. Some botanists refer it to the genus *Phyllodoce*. Although a foreigner, this species has proved to be thoroughly hardy, and capable of flourishing on a great variety of soils and situations. This present season it was actually loaded with its pretty bell-shaped pink flowers at the middle of May, and continued in splendid order for some considerable time, and although the plant is growing in clay loam, yet as regards health and appearance it is all that can be desired. The contour of the plants is something like the native Crowberry (*Empetrum nigrum*), hence its name. As it only attains a height of some six or eight inches, and forms a round-headed little bush, it is well adapted for rockery planting where space is but of limited extent. It is by no means a bad town's plant, and amateurs might introduce it in many cases into their small gardens with advantage. It is generally well-clothed with small linear-shaped leaves, of a glossy green colour, and as each shower of rain washes the dust and sooty particles from their hard surface it is thereby kept in a clean thriving condition.

The Scottish *Menziesia* (*M. cœrulea*), also named by some botanists *Phyllodoce taxifolia*, is likewise found in different parts of North America, as well as in the north of Europe and in Scotland; it is also found to a limited extent in some parts of Perthshire. It forms quite a dwarf evergreen-bush, some 5 or 6 inches high, and when well established is fur-

nished with abundance of small wiry stems, branches, and twigs, which are well clothed with small linear-shaped leaves of a glossy-green colour, and toothed around the margins. It generally produces its pretty purplish bell-shaped flowers about the end of June and beginning of July. It is a capital rockery-plant, and amateurs should use it as such in their small gardens.

St. Dabeoc's Irish Heath (*M. polifolia*), called by some botanists *Dabeocia polifolia*, is another dwarf evergreen shrub, indigenous to some of the mountainous districts in the west of Ireland; but I have never seen it in the north, nor on the Wicklow mountains on the east side of that county. When well established, it forms a neat bushy specimen plant, from 10 to 12 inches high, well clothed with ovate-shaped glossy green leaves, the under side of which is of a downy texture. It generally produces its pretty reddish-coloured flowers in July, and when these are fully expanded, it forms a remarkably attractive specimen, and well worthy of a place in the rock garden, where it can be seen to advantage from the walks and drives in woodland scenery. There are several very attractive varieties of this species in cultivation, all of which are well worthy of the attention of the amateur, and all of which may be had at a cheap rate from any respectable nurseryman. When planting these shrubs in ordinary soil, mix a little leaf-mould with the staple at the spots where they are to be inserted. This will give them a good start, and prove highly beneficial. *J. B. Webster.*

CULTURAL NOTES.

ABUTILONS FOR WINTER FLOWERING.

Few plants are more easily grown than these, and when they have received a special preparation, few are more useful for producing flowers during the four dullest months of the year. Almost any soil will grow them, provided the pots are well drained; the best compost is a good strong turfy loam, with a little thoroughly-decayed manure and sharp sand. During the last ten or twelve years, these have been greatly improved, and are now well worth a little extra attention during summer, so as to produce a large quantity of flowers for winter work. By growing the plants out-of-doors, from June until September, giving them all the sun possible, and treating them similar to *Chrysanthemums*, *Abutilons* will mature their growths, and have a fine show of flower-buds at the point of each shoot; these will continue to open through winter and early spring.

It is best to knock them out of their pots about the end of April or May, and to cut them back rather hard, repotting them into good soil, and growing on in the open air as recommended. *Sparmannia africana*, when treated in the same manner, will also make an excellent plant for winter greenhouse flowering; in fact, neither of these plants is used so much as it deserves, if only for this grand quality of producing such quantities of flower, and at such a useful period. Large plants of either may be grown in tubs, and when introduced into a warm temperature will supply an immense amount of bloom.

Among *Abutilons* we can have many distinct colours, such as white, red, orange, yellow, rose, and several intermediate shades. The flowers last some considerable time in a cut state, particularly if water is not allowed to touch the pollen-bearing portion of the bloom; this causes it to run into a sweet and sticky mass, which soon ruins the flower.

Planted against a wall or pillar, they will resemble all over it, and with a little attention to tying or tacking in, will soon clothe it with foliage and bloom. At any time when the plants are not flowering freely enough, or you have an extra demand for cut flowers, if you give them a little extra heat, the plants will very soon respond by giving a greater profusion of flowers. Weak manure-water, especially soot-water, helps them very much, and also keeps the foliage of a good colour. *Abutilons* enjoy

an abundance of water, and provided they are well drained, it is scarcely possible to give them too much while in full bloom and growth. *A. P.*

ORCHID NOTES AND GLEANINGS.

THE WOODHATCH ORCHIDS.

MR. HAYWOOD does not aim at a great collection of species and varieties in his Orchids, but prefers to grow large quantities of those that are more amenable to easy culture as well as beautiful. For instance, lately there were as many as 300 spikes of *Odontoglossum crispum* in flower, and a prettier floral feast could hardly be imagined. At present, since July and August are about the worst months for the crispums, he has large numbers massed together of *O. vexillarium* and *Harryanum*. The form *radiatum* of the former is very striking, and and some of the *Harryanums* have broader white bases in the labellums, and greater depth of colouring in the petals than I ever remember to have noticed before. The collection of *Cypripediums* contains nearly all the old favourites, and *C. Veitchii* and *C. bellatulum* are grown in quantity. The drooping petals of *C. Stonei* reminded me much of a spaniel's ears. An old Orchid, not much seen now-a-days, is *Tricopilia tortilis*, which is very noticeable on account of its one coriaceous leaf and cork-screw sepals. Any one who may chance to call at Woodhatch just now should by no means leave until he has looked into the stove, the roof of which is simply dazzling in its many-coloured splendour. Close together, growing luxuriantly, are *Dipladenia Brearleyana*, *Gloriosa superba*, and *Allamanda Hendersoni*. The velvet-pink of the first, the vivid scarlet of the second, and the burnished gold of the third, coalesce to form a cynosure from which the eye lingeringly turns. A curious trait of the *Gloriosa* is that the style spreads horizontally from the apex of the ovary. The *Nepenthes* in this same house are loaded with pitchers, those of *Hookeri* being very large in size. The secret of their pitching in such quantity seems to be the fact of their being hung near to the glass, on which there is very little shading. They are essentially sun-loving plants. *C. A. M. Carmichael.*

THE ROCK GARDEN.

ROMNEYA COULTERI.

It is interesting to see this rare Californian Poppywort flowering so freely as it is at the present time so far north as the York Nurseries. The plant is most distinct, forming, as it does, large semi-shrubby bushes from 2 to more feet in height. The blossoms are large (4 inches or more in diameter), pure white, and continue fresh for many days in deep, rich sandy loam, under the shelter of a wall, where the root can readily be covered in winter with a little litter. There is another very singular and beautiful Poppywort flowering on the rockwork in the above nurseries—the blue Himalayan Poppy *Meconopsis Wallichii*. It has an erect stem over 4 feet high, with large pendent light-blue flowers, 3 to 3½ inches in diameter. *R. P.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

THE INTERMEDIATE-HOUSE.—The most beautiful flowering plant here at the present time is *Sobralia xantholeuca*, and it is a fine grower, of good habit, and dwarfer than most of the species. The large yellow blossoms which follow in succession, number as many as five on strong growths, each flower lasts two days in perfection. I grow the plant in a mixture of loam, peat, and sphagnum moss, and very small crocks. When growing strongly, liquid manure made from guano and soot, seems to benefit the plants.

Cœlogyne cristata and its varieties may now receive guano-water at each alternate watering, and the syringing of the plants morning and evening can scarcely be overdone whilst they are growing. *Barkerias* must also be well syringed three or four times a day, otherwise thrips will be likely to make their appearance, and few plants suffer more from them than *Barkerias*. *Lycaste Skinneri* and its varieties will now be growing away, and any plant with roots growing on the outside of the pots will be the better if assisted with weak guano-water at first, gradually increasing its strength as the plants gain in size. *Cypripedium insigne* will now be the better if placed in a frame facing the south, the glass having a shading over it during the sunny part of the day, and the plants kept very moist at the root, liquid manure being afforded twice a week.

Oncidium sarcodes is now breaking away into growth. This is not always a satisfactory plant, as it has the objectionable habit of flowering well, and then resting for a year before breaking into growth; this is not always the case, but it does so occasionally when in the best of health. The same thing I have noticed in *Odontoglossum hastilabium* and *O. Reichenheimii*, and I have noticed that these plants seem the better for the long rest taken.

The pretty *Leptotes* do exceedingly well when planted in baskets, and hung up near the glass in this house; they do not require a large amount of compost about their roots, which entwine themselves around the baskets; but it is a plant which requires a large amount of water, and frequent dipping of the baskets into a bucket of water.

Maxillaria venusta is a good Orchid for flowering at this dull season of the year, and the petals and sepals being pure white, greatly enhances its value at a season when white Orchids are scarce.

MASDEVALLIA-HOUSE.—We have now *Odontoglossum coronarium* sending up flower-spikes. These plants have been grown in this house for more than four years, and made extraordinary large growths. I have been told by many persons that I should not be able to flower them unless I dried them off severely, but as I had already flowered *O. chirmensis*, and *O. brevifolium* under the same conditions, I could not think it was necessary to dry the plant, and I had previously flowered it without doing so; it is, therefore, all the more satisfactory to see the plants are in bloom. In this house I find *Cattleya* or *Laelia crispata*, finds a congenial home. I tried for some years to grow this plant with other *Cattleyas*, but with little success, and it chanced that a plant of little value was crowded into this house, where it grew healthy and bloomed. The temperatures may remain as given in a previous Calendar, but a liberal amount of air must be afforded. *A. G. Catt, Parkfield, Hallow, Worcester.*

FRUITS UNDER GLASS.

TOMATOS.—These fruits will now be plentiful, if strong plants were placed in frames or pits as soon as these were cleared of Strawberries and vegetables. As soon as a good set is obtained, manurial aids may be given, the laterals and superabundant foliage being reduced. As manures for the Tomato, when in pots or boxes, I find "Le Fruitier" and "Thomson's Vine Manure" excellent, soon producing a wonderful change on exhausted plants. Tomatos planted out may be top-dressed, and, if root-space be small, a mulch of rotten dung may be put on the roots. With a little attention in stopping and feeding, abundance of fruit may be got for months in succession. The present is a good time to sow seed or strike cuttings for the latest lot; but I prefer seed, and rely on cutting raised plants for the early fruiterers at the beginning of the year, employing *Ham Green Favourite*, *Prelude*, and *Conference*. The Old Red is good for present sowing, it being the best late autumn and winter fruiter; and, to save time, a few seeds may be sown in large 60-pots, and when up, thinned to one strong seedling, removing them to a cold frame as soon as the third leaf appears, and grow them as sturdy as possible, re-potting them as occasion requires, finally shifting them into 9-inch pots. Grown quite cool from the first, they fruit very freely when placed in their fruiting quarters in the autumn. They may also be planted out.

MELONS.—Those which have just finished a crop and are clean and healthy, may be top-dressed, pruned, and started for the second time. Seedlings raised as advised will be ready for planting, and will soon furnish the trellis if well looked after. This lot will furnish the latest supply. Late Melons should possess thick rind, as these keep better than the thin rinds. Melons for fruiting late should be

grown in a well-heated pit, so that the grower is provided against damp and mildew. Plants just swelling off their fruits should be top-dressed and often supplied with a liquid-manure, and the laterals removed where not required. Blooms will now set very freely, but late fruiterers should not be allowed to carry more than four fruits. *G. Wythes, Syon House, Brentford.*

PLANTS UNDER GLASS.

EUCHARIS AMAZONICA.—Although several new species of *Eucharis* have been introduced of late years, *E. amazonica*, which was the first that we had, is still the best, the others having failed to replace it in the estimation of gardeners. But few growers can induce the new species to flower as freely as the *E. amazonica* will when well managed. The plant is a very accommodating one, so that where a sufficient stock of it is at hand, flowers may be obtained during the greater part of the year. Plants which have just finished blooming, and which will be required to flower again towards the end of the year, should be encouraged to make strong growth, by placing them in a moderately warm temperature, but avoiding a too moist one, and admitting a reasonable amount of fresh air daily. Be careful not to expose the plants to too much light, as the *Eucharis* is very impatient of being exposed to the sun's rays; therefore a sufficient amount of shade should be afforded them. How often do we meet with the finest examples of *Eucharis amazonica* growing in ill-lighted, old-fashioned houses. Large plants may be divided at any time during the summer, so long as there is enough time for the plant to get well-established before the winter sets in; but care must be taken not to disturb them whilst they are making fresh growth, and the best time is when the leaves are matured, and the plants have been resting. Examples of moderate size, and which do not require to be divided, but simply to have more space for their roots, may be shifted at any time, as all that is required is the removal of the old drainage. Specimens in 12 inch pots will be found quite large enough for general purposes, but should one or two larger examples be required for special purposes, all that will be necessary will be to shift them into pots or tubs, in proportion to their size.

CALLICARPA PURPUREA (fig. 13, p. 101).—Young stock of this most effective berry-bearing plant raised from cuttings or seed last spring should now be moved into larger pots, so that the plants may attain good size before the autumn. The leading shoots will require pinching back occasionally, as the plant itself is naturally thin and straggling in growth. A good compost for it consists of two parts good loam, one of leaf-soil, and one of rotted manure, and sand in proportion. Grow the plants close to the glass in an intermediate-house, shading them from bright sun, and syringing them freely when closing the house about 3.30 P.M.; also be careful not to allow them at any time to become dry at the roots, or the foliage will suffer greatly.

CHRYSANTHEMUM FRUTESCENS—Plants of this, which are intended for late blooming, should now be repotted, so as to keep them growing freely. Keep the whole stock free from aphides, and go over the plants frequently, and on the first appearance of the leaf-miner, crush all the affected leaves between the finger and thumb, so as to kill the grub effectively, or the plants will be spoilt. Should there be any deficiency of plants, lose no time in getting the required number of cuttings put in, choosing the young tender shoots, always discarding those which are inclined to flower, as these will not strike so freely, nor grow satisfactorily after they are rooted. *R. Milner, Penrice Castle, Swansea.*

THE KITCHEN GARDEN.

CELERY.—Some gardeners for want of ground cannot put out their Celery plants until the earliest crops of Peas are cleared off. As soon as possible the trenches should now be dug out and well manured. Before lifting the plants, well water the bed in which they are standing, and take them up with large masses of roots and soil, quickly planting them in the trenches, and watering them directly afterwards; should the weather be bright, shade the plants a little for a few days. The after-watering of the plants in dry weather must be carefully attended to, and weeds diligently removed. Having planted the early crops of Celery, the plants from later sowings should be got out without much delay into similar trenches, always keeping plenty of soil about the roots when lifting them, bearing in mind the fact that the evening is the best time to transplant Celery, unless the weather

be showery, when every advantage should be taken of such kind of weather to finish the job of Celery planting. The earliest planted Celery is now growing apace, and should be afforded frequent waterings with weak liquid manure; strong manure causes coarseness of leaf-stalk and hollowness. Keep them free of suckers, but do not earth-up before they have attained almost full size.

TURNIPS.—A good breadth of this vegetable should be sown for winter supply. The bulbs from this sowing will be of moderate size, and may be trusted to keep sound during that season. Red Globe, Snowball, Greentop Round, and Golden Ball are undoubtedly among the best varieties of the Turnip for garden crops; but it is advisable to sow a small quantity of Chirk Castle for the latest use, it being a variety that remains firm longer than any other white-fleshed Turnip. Chirk Castle has a black exterior, but the flesh is perfectly white. It will not be necessary to make much preparation for this crop, and as a rule manure will not be needed unless the ground is in an impoverished state, then it ought to be rotten dung, bone-dust, or some other artificial manure rich in phosphates, in preference to anything that contains much nitrogen. A piece of ground from which the early Cauliflowers has been cleared will be suitable, forking it over lightly, breaking it down, and levelling it. The seed should be sown in shallow drills, 16 inches apart, and the plants thinned as soon as they are ready, leaving them at about 9 inches. At this season it is well to sow rather thicker in case the Turnip-fly should attack the plants, and if that should occur, give a good dressing of wood-ashes and soot in a dry state when the leaves are damp, and repeat it as often as may be necessary. An occasional hoeing to keep down weeds will be all the attention the crop will require until fully grown.

HERBS.—Mint, Balm, Pennyroyal, Sweet Marjoram, Hyssop, Sage, Lavender, Camomile flowers, Marygold, &c., may be cut or gathered for drying for winter use. Most of these herbs should be cut when nearly in full growth, and coming into flower; and Lavender, Marygold, and Camomile when in full bloom. Cut them when quite dry, and spread out or hang up in a dry, airy, shady place. This is also the proper time to gather herbs for distillation. *C. J. Waite, Glenhurst Gardens, Esher.*

THE FLOWER GARDEN.

BORDER CARNATIONS.—Layering is the mode usually adopted in the propagating of Carnations, Picotees, and Pinks, and the earlier it is performed in August the better. If a little light loamy soil is placed around and underneath the plants, with a surfacing of sand, the layers will root more quickly than would otherwise be the case. In layering, remove a few of the bottom leaves with a sharp knife, and cut the shoot half-way through, just below a joint where the shoot has acquired some degree of solidity, and cut in an upward direction for about 1 inch, then bend the stem of the plant down to the prepared soil, inserting therein the tongue formed by the upward cut, and secure the shoot with a hooked peg. It is good practice to just top the grass of the shoot layered. A few hundred layers may be made by an experienced hand in this way in a few hours; care, however, should be taken not to cut the stem too far through, and not to break the "shoots" operated on in the act of bending it downwards. Water should be afforded through a rose water-can to settle the soil about the layers, and also every afternoon in dry weather until roots are formed in good numbers. Thus treated, the layered shoots will be sufficiently rooted by the end of September to detach from the parent plants, cutting them off at the joint at which they were layered, and taking them up with compact lumps of soil and roots, and either potting them singly into 3-inch pots, and standing them on sifted coal-ashes in a cold pit or frame near to the glass during the winter months for transplanting out-of-doors early in March, or be planted out at once.

CUTTINGS OR PIPINGS.—Where pipings of varieties are obtained from a distance, as frequently happens at this season, the following simple and effectual method of procedure may be employed to strike them. Place one or more hand-glasses, according to the number of cuttings to be put in, over a bed of fine sandy loam and leaf-mould, with a surfacing of sand, a few inches deep; into this dibble the cutting 2 inches apart every way. The pipings should be about 3 inches long, the lower pair of leaves being removed by a sharp knife, and the

end cut square across a little below the joint before being dibbled into the soil, afterwards watering them gently. Keep the light, or lights, close, and shaded from bright sun, until the pipings are rooted, when the shading must be no longer used, and a little fresh air admitted, gradually at first, and increasing the amount until the rooted cuttings are either potted up, or planted out on a west border. If large quantities of plants are to be raised from cuttings, a shallow frame should be placed on a gentle hot-bed, placing therein sufficient half-rotted dung, and 3 or 4 inches deep of fine soil, so as to bring the surface of the bed to within a like distance of the glass, covering this with sand to the depth of half an inch, and then dibble the cuttings into it, as described above, pressing the soil about the individual pipings in putting them in with the dibble. The frame should be kept close, and be shaded during the heat of the day, admitting a little fresh air every day to disperse or prevent too much moisture settling on the cuttings.

ROSES.—Cuttings of the different sections of the Rose desired to be propagated may be readily struck, if taken off with a "heel"—that is, a piece of the old or ripened wood attached—in the manner recommended for Carnations and Pelargoniums. Wherever the removal of cuttings from the several sections of the Pelargonium will effect an improvement in the appearance of the beds, it should be done forthwith, putting the cutting in shallow boxes of uniform dimensions, provided with a few holes in the bottom, these being covered with potsherds and a few handfuls of leaves for drainage, and then filled with light soil, with a surfacing of sand, a space of 3 inches being allowed between the individual cuttings. Stand the box in a dry situation fully exposed to the sun, and sprinkle the cuttings overhead on the afternoons of bright days to freshen them up. *W. H. Ward, Longford Castle, Salisbury.*

THE HARDY FRUIT GARDEN.

SUMMER PRUNING.—To give the fruit every chance of full development, the summer pruning of the various trees and bushes should be attended to forthwith. In doing this, do not shorten back the shoots too hard, as at this season severe cutting back might be followed by a burst of new growth at the base of the shoots, and much closer to the main branches than is desirable. Secure neatly to the walls or trellises all leading shoots of Pears, and where the allotted room has not been filled up, be careful not to place the fastenings too near the ends of such shoots, nor tie too tightly. If very large fruits are required for dessert or exhibition, the thinning should be severely practised, and only those which are the best placed, that is, the most exposed to the sun, should be reserved. Freely mulch the roots with farmyard dung, and afford water to the roots, but not giving quite cold water. After the pruning is finished, gather up the shoots which are of use in fastening back the young growths of Peaches, Plums, Morello Cherries, Apricots, &c., and finish up with a thorough tidying up of the borders, for no matter however well the walls may be clothed, or the trees trained, an untidy border has a bad appearance.

Pear Doyenné d'Été, and other early varieties, should never be allowed to get dry at the roots, and as these pears will soon be ripe, assistance should be afforded the trees before the fruit ripens; the neglect of this is a great drawback to many of our early fruits. These Pears are better flavoured when gathered a day or two before they are ripe, and placed in a cool room.

EARLY PEACHES.—Such early sorts as the Waterloo, Alexander, Ausden, followed by Hal's Early, Condor, Early Louise, and Early York, should receive good treatment to help the fruits to swell to a passable size, especially the first-named, as these ripen up very quickly, and if not attended to early, the fruits are apt to be small. Remove or push aside the leaves so as to expose the fruits to the sun. Use the garden-engine regularly in hot weather until signs of colouring appear.

RASPBERRIES.—Cut away all suckers springing up in the alleys, excepting such as may have been left for stock. When the fruit is gathered and the old canes are no longer of use, cut them out and most of the young canes, reserving five or seven of the strongest on each stool. If the soil be light, or in an impoverished state, afford it another dressing of rich manure, and apply liquid manure; heavy soils, inclined to wetness, will be the better for a dressing of leaf-mould or spent Mushroom dung, attending well to the young suckers recently pulled up and planted, and seeing that they are supplied with water. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOW.

SATURDAY, AUG. 1—Ripley (Derby).

SALES.

TUESDAY, JULY 28 { Orchids and Lillium Harrisii, at
Protheroe & Morris' Rooms.
THURSDAY, JULY 30 { Established Orchids, in flower and
bud, and 9000 Lillium Harrisii, at
Stevens' Rooms.
FRIDAY, JULY 31 { Established and Imported Orchids
by order of Messrs. Seeger & Tropp,
at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°·3.

Our Fruit Report.

THIS week we are enabled, by the courtesy of our correspondents in all parts of the country, to give an abstract, comprising the general condition of the fruit crops at the present time. The fuller comments will be given in a succeeding issue, but enough is now published to afford a general idea, both of those crops which are practically over, as the Strawberries, and those which are to come. Commercially it is the Apple crop which is of most importance, and out of some 200 reports, we find that sixty-seven in England and fourteen in Scotland report an average crop of good quality. As these reports are for the most part furnished year by year from the same districts, by the same correspondents, the statement may be taken as a near approach to accuracy; only seventeen in England and four in Scotland report an over-average crop of Apples, whilst fifty-seven in England, and eighteen in Scotland report an under-average crop.

Of course, some counties are more especially fruit districts, whilst others are less distinctly concerned in fruit culture; thus, if we take Kent, as specially important from this point of view, we find that in this favoured county, Apples are generally both abundant and of good quality, though in certain districts round Sittingbourne and Boughton apples are "very short." In Middlesex, though the crop is reported under average, the quality is good. In Surrey, an average is recorded; Sussex scores a little better; Gloucestershire notes an average crop, as also do Hereford, Worcester, and Devon.

Plums, which come next in order of commercial importance, show thirteen in Scotland and forty-four in England under average. Sixteen districts in Scotland and forty-two in England show average returns, whilst six Scottish and fifty-two English reports show an average

crop. The Western Counties are specially Plum counties, and we find Devonshire, Worcester, and also Kent recording over average, whilst Gloucestershire is behindhand.

Cherries throughout the British isles show sixty-five under, ninety-two average, and seventeen over average. Kent, the most important of all in this respect, does not come out well; and our Sittingbourne reports given last week were specially bad, though elsewhere as at Boughton they are if not abundant at least good.

Small fruits, which are less dependent on climatal derangements than some others, show eight under average in Scotland, forty in England. Average crops are noted in twenty-four Scottish, and sixty-five English reports: seven over average in Scotland, and thirty-six in England. Red and black currants are disappointing in Kent. Where also gooseberries are noted as only middling. These remarks apply to all parts of the country.

Strawberries have done well; only two in Scotland are recorded as under average, and fourteen in England, whilst twenty-three in Scotland, and seventy-nine in England, are named as yielding average supplies; fifteen in Scotland, and no fewer than forty-seven in England, being over the mark. The great Strawberry counties, such as Kent, on the whole report favourably. As many as sixty tons were sent away from St. Mary Cray Station in one day lately, being fourteen tons in excess of the largest quantity last year.

Nuts, including Filberts and Walnuts, are not much grown in some districts, and seem variable everywhere; thus, in Scotland, two are reported as bad, sixty-one in England no better; two in Scotland and thirty-three in England report an average; and six in England are over the average.

The English Apple crop is, as every one knows, severely tried by competition with Canada and the United States, and lately with Tasmania. Allowances must, however, be made for differences of season and climate. As to soft fruits and Strawberries, the competition is entirely in our favour, a point which would be fruit-growers will not fail to note.

We defer any further comment till we are enabled to publish the full details.

AN INDIAN TODDY PALM—PHŒNIX SYLVESTRIS.—A familiar and perhaps, to some people, a monotonous feature in Indian scenery, particularly along the coast regions of Western India, are the groves of Phœnix sylvestris, one of the toddy Palms, the commonest of the wild Palms of the country, but a most valuable one to the natives. It is frequently seen in company with another noble Palm, *Borassus flabelliformis*, the Palmyra, and these, together with the Cocoa-nut Palm, which, in the neighbourhood of Bombay, is cultivated in extensive plantations, comprise the chief elements of that striking tropical scenery which always impresses travellers from northern regions when they first see it. This Phœnix does not differ materially in aspect from the Date Palm of Egypt, *P. dactylifera*, which one sees on the way out; and my impression that the Date Palm, as well as such Phœnixes as *P. rupicola*, *tenuis*, *acaulis*, *canariensis*, and possibly others, are but geographical forms of a widely-distributed species, having a range almost as extensive as that of the Cocoa-nut Palm. Be this as it may, they all seem to me very much alike, and from my point of view produce the same effect, for in a natural grove of *P. sylvestris* one could select forms that to all appearances are identical with the species named. The Palm now illustrated is not the only one that yields toddy, as there are several in India from which the enticing juice can be drawn, notably the Palmyra, Cocoa-nut and Wine Palm (*Caryota urens*), but in

Guzerat the Phœnix yields the bulk of the enormous quantity of toddy that is consumed by the natives. Toddy drawing is, in fact, an important industry, and moreover a source of revenue to the Government, as a tax is imposed upon every tree in full yield, and to which an official number is attached. A large plantation of Phœnix is a valuable property, for the owners assess their value at from five to fifteen rupees a tree. If a plantation is near a town or group of villages, or near a frequented highway, the drawing and distribution of toddy is always active, and keeps several people busy. The mode of drawing is admirably shown in the picture. The toddy man is in the act of fixing a "chattie" at the mouth of a notch that has previously been made in the succulent part of the stem, the incision being made so that the descending sap trickles into the vessel, a few strips of reed being placed so as to conduct the juice more readily. The chatties are emptied morning and evening, and, as they hold a quart or more, a great quantity of sap is extracted from each tree during the season; and the loss tells materially on the health of the tree, so much so that if the extraction were to continue year after year, the tree would soon die from exhaustion. After a tree has been tapped for a full season, it is allowed to rest for two or three seasons, and that accounts for the intervals of the scars on the trunk, as may be seen in the picture where the man has his left foot and the scar lower down. The toddy drawer is possessed of surprising agility in climbing the perpendicular stems, which he does with the utmost ease, the only support being the rope he has fastened round his waist, which leaves his hands free. The fluid thus obtained is of the consistence of watered milk, and has a sweetish, and to some Europeans an agreeable taste, while to others it is nauseating. When freshly drawn it is most refreshing, and to quaff a bowl of it when excessively thirsty is one of the pleasantest incidents in Indian life. When, however, it is allowed to ferment, which it quickly does, it is sour and unpleasant, and becomes as intoxicating as Scotch nectar but in this state it obviously finds more favour with the natives. As a garden plant, the wild Phœnix is of great value for landscape effect when it occurs in natural groups, for in these you see all gradations of size, from the small seedling to the decrepit old trees, that have reached the length of their days, and lean leewards in a most picturesque way. The bluish-grey-green tint of a grove of Phœnix is perhaps too sombre, but in a garden one can always introduce variety as a foreground, or intermixed in the group. It is a singular fact, that the Date-bearing Palm does not thrive successfully in India, so as to produce edible fruit, and that of *P. sylvestris* is valueless as food, though the leaves and stems, and the fibre and bark thereof, are of value to the natives in various ways. The engraving (fig. 14) is an admirable reproduction of a photograph by Messrs. JOHNSON & HOFFMAN, of Calcutta. *W. Goldring.*

THE POTATO TRADE IN NEWCASTLE.—The importance of the Potato trade of Newcastle has been considerably emphasized during the past season, in consequence of an acceptable display of enterprise on the part of the shippers and some of our principal local merchants. This enterprise, in all probability, has resulted from the inconveniently fluctuating state of the market, and for the first time it is to be recorded that Potatoes have been brought direct by steamer from Ireland to the Tyne. The venture, which has been in the hands of the agents for the Antrim line of steamers, Messrs. LISLE & Co., Baltic Chambers, Newcastle, has been carried on with a gratifying success, and the new trade will undoubtedly continue so long as the supply in Ireland is good. On a rough calculation, about 4000 tons have been brought to Newcastle by this line of steamers, which trades between Belfast and the Tyne *via* the North of Scotland. The arrivals continued to increase in quantity after the first introduction, and it only need be mentioned to indicate the extent to which the Scotch Potato trade of Newcastle was affected, that in one week alone as many as 680 tons were landed.

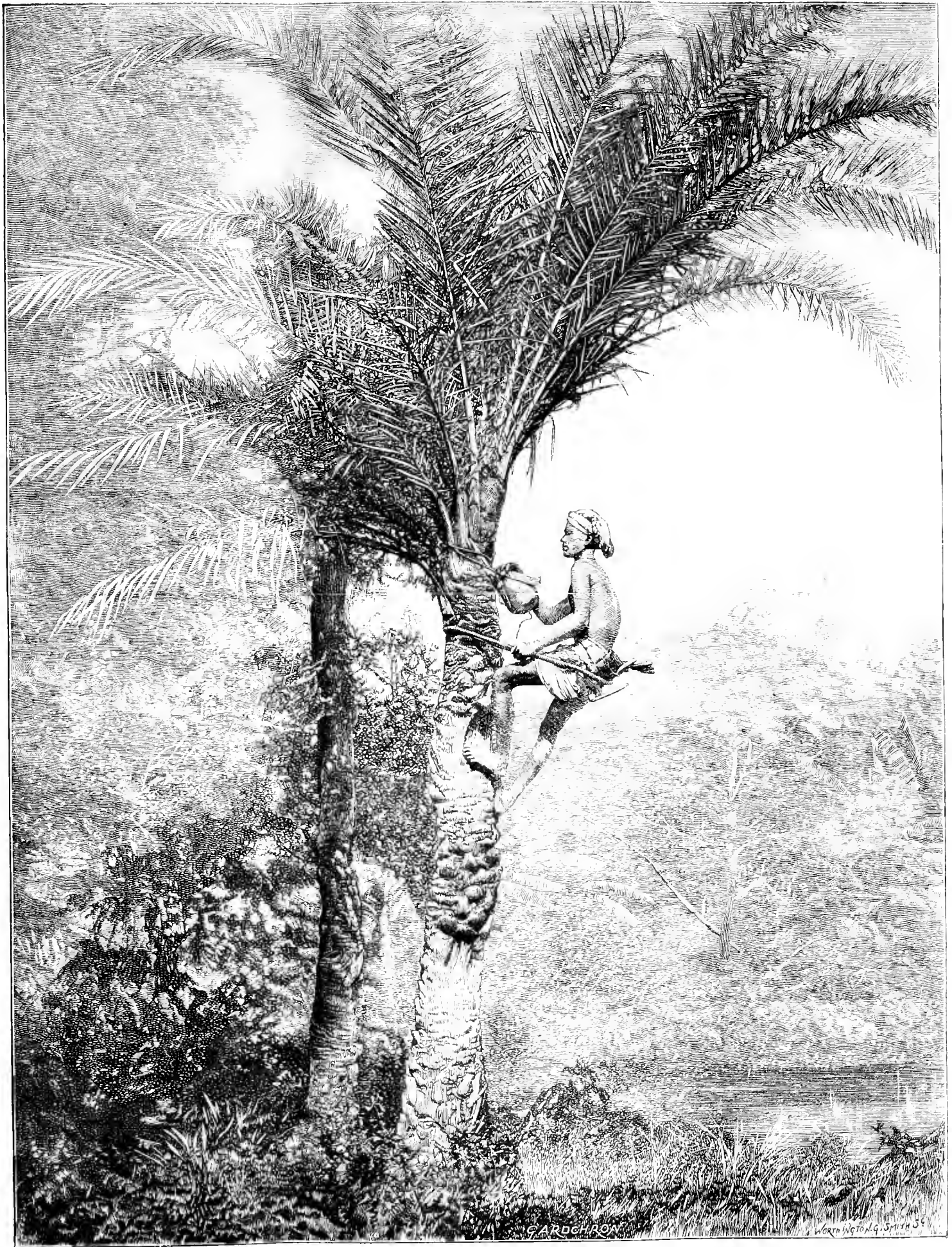


FIG. 11.—*PHOENIX SYLVESTRIS*, AN INDIAN "TODDY" PALM. A TODDY-DRAWER AT WORK. (SEE P. 104.)

THE FRUITERS' COMPANY AND FRUIT CULTURE.—Already, says the *City Press*, July 18, we are gratified to learn, a substantial amount has been raised in connection with the fruit culture scheme that has been set on foot by the Fruiterers' Company. The Company head the list of subscriptions with a donation of £500—a most munificent grant, having regard to the comparative poverty of the Guild. Other donors include:—The Corporation, £250; the Duke of Westminster, K.G., £150; Alderman Sir James Whithead, Bart., £100; the Duke of Bedford, £50; the Right Hon. W. H. Smith, M.P., £20; Colonel North, £25; the Baroness Bardett-Coutts, £100; Sir H. A. Isaacs, £10 10s.; Messrs. Crosse & Blackwell, £52 10s.; Mr. C. J. Leaf, £10; Sir W. A. Ogg, £25; Mr. H. R. Williams, £25; Mr. H. R. Williams (second donation), £46; Mr. H. Martin (Rent-warden of the Fruiterers' Company), £25; the Drapers' Company, £105; the Clothworkers' Company, £100; the Mercers' Company, £52 10s.; the Leather-sellers' Company, £26 5s.; the Skinners' Company, £26 5s.; Mr. G. Farmiloe, £10 10s.; Mr. A. H. Smeo, £25; Mr. G. Williams, £10 10s. The Lord Mayor has opened a fund at the Mansion House, and intending donors should therefore forward their cheques to his Lordship.

— We are glad to find a general agreement of opinion as to the unfortunate omission at the meeting at the Mansion House reported last week. The Royal Horticultural Society, sadly hampered as it has been, has done such really splendid service in the cause of fruit-culture for many years past, and especially by its conferences and publications; and the British Fruit Growers' Association has so valiantly and energetically taken up the subject during the last few years, that the omission to make some note of these facts, which we believe to have been unintentional, was really a cruel injustice, especially to the Royal Horticultural Society. This body deserved much better treatment at the hands of the Minister of Agriculture, who, as Minister for Horticulture and Forestry also, ought to have been better informed of the sacrifices and deeds of the Society and its younger ally.

WEED KILLERS.—We understand that the Pharmaceutical Society has instituted proceedings against one of our leading nurserymen for selling these substances, or one of them, without having a licence to sell poisons. Considering the numerous accidents with these fluids, it is in the public interest that they should be retailed in bottles of peculiar shape, prominently labelled "POISON." The label should also state for what purpose only the liquid is employed. We do not think nurserymen or dealers in garden requisites would raise any objection to some precautionary measure of this kind. In these days of insecticides, to prevent nurserymen absolutely from selling these substances would be injudicious; but that some special precautions are necessary, is unfortunately too true.

FLORIST'S WIRE TIDY.—At the last meeting of the Royal Horticultural Society at Chiswick, a useful little exhibit, which possibly escaped critical notice by visitors, deserves mention. It consisted of some samples of various sizes, labelled "Florist's Wire Tidy." The wire is placed on reels of strong tin, Japanese inside and out; the reels revolve on spindles, and can be removed at will. To the gardener and florist they would seem to be indispensable, preventing confusion, and saving both time and worry; they also effect a considerable saving in material, as each size of wire required for binding and mounting can be kept separately, and will not be scattered about and wasted as in the old method. It is the invention of Mr. BUNYARD, The Nurseries, Ashford, Kent, the patent rights having been bought by Messrs. BLAKE & MCKENZIE, Liverpool.

STOCK-TAKING: JUNE.—To those with the opportunity (and time) the Board of Trade Returns for the past month present very many features of interest, and in both sections, viz., imports and

exports. For us we have only the necessity for summarising and recording an inference or two. The following is our usual excerpt from the "Summary" of the returns for June, as to imports:—

	1890.	1891.	Difference.
	£.	£.	£.
Total value of imports	£32,926,295	£36,850,121	+3,923,826
§II.—(A.) Articles of food and drink—duty free ...	11,709,613	13,351,112	+1,641,499
(B.)—do., dutiable	1,531,456	1,873,006	+341,550
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	5,418,813	6,493,954	+1,075,141
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,663,424	3,963,939	+300,515
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	774,044	1,111,061	+337,017
(B.)—Parcel Post ...	39,804	44,987	+5,183

The exports for the past six months show an increase of £5,364,782 over the corresponding period of last year. In the matter of exports for the month just closed, there is an increase under every head save one (yarns, textile manufactures, &c.), and this reduces the total by £93,418 under that for June 1, 1890. The exports for the six months ending June 30, show a reduction of £3,189,713. These exports are of articles of British and Irish manufacture; there is also a falling off in the export of articles of foreign produce. It may not be out of place to note here, respecting the imports of wood or timber, that the imports of hewn timber for the past six months are set down at 951,453 loads, as against 953,094 loads for the same term in the previous year. Sawn timber is placed at 1,122,206 loads for the past six months, as against 1,257,537 loads for the past six months of 1890. It would be almost wrong to omit, in this connection, some few figures bearing on the policy of our cousins on the other side of the Atlantic. The revenue returns for the last fiscal year in the United States do not show the usual abounding surplus. Whilst the revenue amounted to 392,470,752 do's., the expenditure for the year was 365,447,275 do's., which leaves the comparatively small surplus of 27,023,477 do's., or only between five and six millions sterling. Why this is so, is because there has been a diminution of revenue and an increase in state expenses. Protection has considerably reduced imports, and the collection of duty necessitates an immense increase in staff and "appliances" necessary for its collection. We know all about that sort of thing here; and have in great part done with it. But enough of that, we come finally to a few extracts from the general figures of those returns relating to the imports of fruits, roots, and vegetables for the month of June compared with those for June, 1890:—

	1890.	1891.	Difference
§ II. Fruit:—			
Apples, raw ... bush.	8,798	64,031	+55,233
Unenumerated, raw	251,874	213,164	-38,710
Onions	171,880	259,742	+87,862
Potatos cwt.	1954,287	836,058	-1,118,229
Vegetables, raw, unenumerated value	£101,565	117,681	+16,116

JULY HORTICULTURAL MEETING AT GHENT.—Thirty-one exhibits were staged, and the following Certificates of Merit were awarded: 1st, Variegated Rose, No. 6092, to Mlle. E. Guequier, ground pink with white markings; 2, English Mignardise Carnations, large blooms, to the same exhibitor, very pretty varieties of distinct colourings; 3, Nidularium Makoyanum, to M. Aug. Van Geert, a good and noteworthy plant with striped foliage; 4, Asplenium caryotaefolium, to the same exhibitor, the foliage was

exceedingly pretty and exactly like that of a Carrot; 5, Curmeria Leopoldi, to the same exhibitor, very finely foliaged plant, which will become very popular; 6, Kentia Fosteriana, var. robusta, to M. Millet-Richard, stems and leaves exceedingly substantial and firm in texture, a fine example; 7, Cattleya Mossie alba (Wagneri), unanimously awarded to M. Jules Hye; 8, Odontoglossum Alexandræ grandiflorum, to the same exhibitor, a very fine flower and most remarkable variety; 9, Cattleya gigas marmorata, to MM. Ed. Vervaeet et Cie., petals nicely speckled, quite a distinct variety; 10, Phaius Humblotii, to M. A. van Imshoot, with fine blooms; 11, Cycnoches chlorochilum, to the same exhibitor, an exceedingly curious plant. Certificates of Merit for cultivation and flowering, were awarded for: 1, Asparagus virgatus, to M. Desmet Duvivier, a large and fine plant from an horticulturist, who is endeavouring to form a complete collection of plants of this genus; 2, Abies alba compacta gracilis, to the same exhibitor, truly a graceful specimen; 3, Odontoglossum mulus illustris, to M. Ch. Vuylsteke, in full bloom, the flowers of good form; 4, Oncidium macranthum, to M. Jules Hye, an interesting and well-bloomed variety; 5, Lælia purpurata Brysiana, to MM. Ed. Vervaeet et Cie., a plant still very rare, shown with fifteen splendid blooms; 6, Cattleya Mendeli, to the same exhibitor, a remarkable plant with thirteen flowers; 7, Mormodes luxatum eburneum, to M. van Imshoot, a fine example; 8, Vriisia Sieboldiana, to MM. F. Desbois et Cie., a very pretty and noteworthy plant with translucent bracts. The jury also awarded many "honourable mentions." *C. de B.*

THE "BOTANICAL MAGAZINE."—The July number contains illustrations of:—

Musa Basjoo, t. 7182, a Banana, remarkable for its hardihood, as it survived several winters at Combe Wood, in Messrs. VETTON'S nurseries. Now that it has flowered in the temperate-house at Kew, it has been identified as "*M. Basjoo*," a species native to the Liu-Kiu Archipelago, to the south of Japan, where it is cultivated for the sake of the fibre in its leaves. In general appearance, it is quite like *M. sapientum*, but its floral characteristics are different.

Hibiscus venustus, t. 7183—A shrubby species, with large handsome cream-coloured flowers. It is supposed to have been procured from Tahiti, and was flowered in the garden of A. KINGSMILL, Esq., of Hurrow.

Synlœnia arborescens, t. 7184.—A succulent Euphorbiad, with obovate leaves and terminal corymbs of greenish flowers. A botanical curiosity.

Masdevallia platyglossa, t. 7185.—A species with long pendulous flower-stalks, bearing irregular bell-shaped pale yellow flowers, about an inch in length. Its nearest ally is stated to be *M. coriacea*, *alias* *M. Bruchmulleri*.

Stenoglottis longifolia, t. 7186.—A striking-looking terrestrial Orchid, from Natal, with long undulate leaves, spotted on the under surface, decreasing in size gradually upwards on the stem, which ends in a long rather dense raceme of dull violet flowers.

CATTELEYA BRYMERIANA.—This beautiful hybrid is now in bloom for the first time in Belgium, in one of the houses of M. PEETERS, at Brussels. The plant exhibits many of the characteristics of *C. superba*, the flower those of *C. Eldorado*. *Cattleya Mossie alba* or *Wagneri* should also be mentioned, and *Odontoglossum Harryanum*, in which the general colouring is clearer than usual, while the tips of the sepals and petals are of an unusual shade of golden-yellow. The very rare *Odontoglossum vexillarium* var. *superba* is also now in bloom under favourable circumstances.

AGRICULTURAL EDUCATION.—The committee appointed by the Hebdomadal Council, Oxford, to consider in what way the University could assist in the establishment of agricultural education, with a special view to the needs of the County Councils, have now submitted their report. By agricultural education, the committee understand instruction in the sciences, or the branches of science, specially applicable to agriculture, employing the latter term

with the larger meaning which must have been present to the mind of Dr. SIMMONS, when he designated the professorship founded by him, the professorship of "Rural Economy." Used in this sense, agriculture becomes not merely the science of the cultivation of the soil, but includes the knowledge of its constitution and properties, of its vegetable products, and of the structure, habits, and uses of the domestic animals that are reared upon it; so that the student has evidently much to gain by a knowledge of such subjects as botany, chemistry, animal physiology, and geology. Taking into account the requirements of the County Councils, the committee think that the efforts of the University should, in the first place, be directed to the provision of an adequate supply of persons qualified to be lecturers or teachers; and those members who are most familiar with the wants of the counties, lay stress upon the importance of University teachers possessing credentials of practical acquaintance with the details of farming and farm-life, which has hitherto been only accidentally—if at all—acquired by such teachers. Other classes of persons whose circumstances the committee think deserving of consideration, are young men who go to Oxford intending to take an ordinary degree, and then, either as landowners, or the agents of landowners, to devote themselves to the pursuit and improvement of agriculture; and young men who might go to Oxford with a view to attending such courses of instruction as would be useful to them in agriculture, but without the intention of taking a degree. Dealing with the means already at the command of the University for providing agricultural education, the Committee point out, that the professors to whose services resort would most naturally be had are the following:—The Sibthorpe Professor of Rural Economy, the Sherardian Professor of Botany, the Waynflete Professor of Chemistry, the Waynflete Professor of Physiology, and the Professor of Experimental Philosophy (Physics). In addition to these University professors, there are the Lee's Readers in Chemistry and Physics at Christ Church, and the Millard Lecturer in Physics at Trinity College, whose courses would probably be open to agricultural students. The committee sketch the proper course of study for each class of students, and express the opinion that for the organisation and supervision of the studies pertaining to agricultural education some further provision is needed than at present exists. In the Sibthorpe Professorship of Rural Economy, which is now vacant, they recognise a foundation capable of being rendered the centre of agricultural education within the University; and they strongly recommend that the duties and emoluments of the chair should be revised.

LIPARIS MONACHA.—This most destructive caterpillar, after having destroyed the Pine plantations of parts of Bavaria, is attacking those of Belgium. Millions of insects have been destroyed, but milliards require to be immolated, as whole woods are destroyed by the creature.

TRUE BLUE VIOLA.—A large bed of this excellent variety is now in full bloom at the Birmingham Botanic Gardens, and has been so since early in April. It was raised by Mr. W. DEAN some years ago, and is the most blue-shaded variety known, and is of dwarf compact stiff habit, and a wonderful bloomer, and stands hot weather better than a great many varieties. Mr. LATHAM thinks highly of this variety.

THE MIDLAND COUNTIES CARNATION AND PICOTEE SOCIETY.—The first exhibition of this Society will be held in the Botanic Gardens, Birmingham, on Saturday, August 8, and nearly £70 is offered in prizes. Notice of entries must reach the Secretary, or Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, not later than the morning of Tuesday, August 4. There is a special class for border Carnations also.

HELENSBURGH FLOWER SHOW.—"Among the Rothsay florists exhibiting at this show on Thursday, July 17," says the *Rothsay Chronicle*, July 18, "was Mr. M. CURRIERSON, of the Public Park Nursery, and his collection was considered of such merit by the judges, that they awarded him a Silver Medal as an extra prize. Mr. CURRIERSON'S exhibit contained more than forty varieties of hardy border flowers, tastefully arranged in bouquets and sprays; also sixty blooms of fancy Pansies, including two seedlings—Mrs. M. Cuthbertson and Edith Crossley, which come up to the florists' standard, and are likely to be further heard of in the competition lists. *Campanula persicifolia* Cuthbertsoni, new, also attracted attention, being a great improvement on the ordinary variety."

HAMMERSMITH HORTICULTURAL SOCIETY.—The twelfth annual exhibition of this Society took place on the 16th inst., and proved to be a successful affair, the show being somewhat larger than usual. In the gardeners' class for a group of plants arranged for effect, the successful competitor was Mr. HODGE, gr. to J. J. FORD, Esq., Parkside, Ravenscourt Park, W., with a charming display. In the amateur's division (group for effect class) the premier position was won by Mr. J. BUOMLEY, Miles Street, Hammersmith. Mr. JOHN ADDISON, gr. to Mrs. LLOYD, Merton Lodge, Chiswick, won the 1st prize for six fine examples of Exotic Ferns. Mr. M. T. MAY, gr. to the Marquis of BURE, Chiswick House, Chiswick, contributed (not for competition) a beautiful, well-arranged group of foliage and flowering plants, which added much to the attractiveness of the exhibition. Mr. GEORGE CANNON, manager to Messrs. C. LEE & SON, Faling, sent some fine blooms of Roses, also not for competition, and which were greatly admired.

ROYAL COUNTIES AGRICULTURAL SOCIETY'S SHOW AT PORTSMOUTH.—The Council of the Royal Counties Agricultural Society gratefully accepted the offer made by Messrs. SUTTON & SONS, the Queen's Seedsmen, Reading, to gratuitously undertake the floral decorations of the Royal box in the Grand Stand, and we need hardly state it was carried out in a manner worthy of the occasion. The whole interior of the box was tastefully decorated with flowers, consisting of Calendula, Canterbury Bells, annual Chrysanthemums, Clarkia, Delphinium, Hawkweed, Linaria, Sweet Pea, Sweet William, &c., from Messrs. SUTTON'S seed trial farm at Reading. In front was a charming display of a new Begonia raised by the firm, named the Duchess of Edinburgh, colour white, suffused with pink, this being the first time of its exhibition.

THE BERMUDA JUNIPER.—In *Garden and Forest* for June, 1824, is an interesting article on the Bermuda Cedar, *Juniperus bermudiana*, which formed the subject of an interesting article in our pages by Mr. HEMSLEY some time since. The writer points out the close resemblance of the Bermuda plant to the Red Cedar, *Juniperus virginiana*, which grows from Canada to Florida; and from Cape Cod to Vancouver. The Red Cedar, it is known, was growing on the American Continent long before Bermuda arose from above the surface of the ocean. It is surmised then, that when the islands did appear, a bird may have conveyed in his crop a number of the Juniper berries, which germinated on the island. Once established, the different soil and climate may have gradually modified the plant, so that at length the Bermuda Juniper became specifically distinct, as we esteem it, from the continental type. The wood was formerly used in shipbuilding, and for furniture, and but few old trees now remain. The younger ones are remarkable for the fact that they flourish equally well in very different situations on dry porous limestone and brackish swampy land.

EEL-WORMS IN STRAWBERRIES.—The first number of the *Zeitschrift für Pflanzen Krankheiten*, a new journal devoted to the diffusion of information concerning the diseases of plants, has a paper on

a curious hypertrophy of the stem of the Strawberry caused by the nematode worms described by Dr. RITZEMA BOS under the names of *Aphelenchus fragariae* and of *A. ormerodis* respectively.

BOTANICAL ILLUSTRATIONS.—We learn from the *Revue Horticole* that M. MALLOIZEL, Librarian at the Jardin des Plantes, has undertaken the publication of a list of all the figures of plants, or of the more important of them, published since PARZEL'S *Iconum Botanicarum Index*. Of what service such a publication will be, few, if any, can know better than ourselves.

HOOKE'S "ICONES PLANTARUM."—The last issued part (June) contains lithographic illustrations of Orchids, chiefly in illustration of, or as supplementary to, the enumeration given by Sir JOSEPH HOOKER in the *Flora of British India*. The species figured are generally of little cultural interest.

MACADAMIA TERNIFOLIA.—The Australian nut, of which we gave a representation in 1870, has, we learn, produced its fruits at Golfe Juan, in the garden of M. A. CONSTANT. An illustration is given in the *Revue Horticole* for July 16.

GOLDEN HORSE CHESTNUT.—Mr. BLAND of the nurseries, Fordham, sends us leaves of Horse Chestnut very finely blotched and variegated with golden-yellow. Judging from the leaves sent to us, this is one of the best golden forms with which we are acquainted.

BEDDING TROPÆOLUM.—Messrs. CLIBRAN sends us flowers of a new dwarf-bedding *Tropæolum* of a very bright clear yolk-yellow colour. It is apparently a free bloomer, and the plants we are informed measure from 4 to 6 inches in height. The colour is decidedly very good. Messrs. CLIBRAN intend to send it out next spring under the name of Mrs. Clibran.

CATTLEYA GIGAS.—Mr. MURRAY, of the gardens, Redholme, Ardrossan, sends us a photograph, showing two flowers of *Cattleya gigas*, each about 9 inches in diameter, the lip measuring 2½ inches, and of a rich magenta crimson. Evidently a fine variety.

STAVELEY WORKS FLOWER SHOW.—The 24th annual show in connection with the Staveley Works Floral and Horticultural Society was held on Monday, 20th inst., in Ringwood Park, Notts, lent by Mr. J. B. BARRON, J.P. The weather was unfavourable, but despite this the attendance was very large. The exhibits, staged in a large marquee, were of an excellent quality.

POTATOS IN THE CHANNEL ISLANDS.—We have received the following letter from Mr. C. B. SAUNDERS, Caserean Nurseries, St. Saviour's, Jersey, July 18:—"I thought you would be pleased to see and probably taste, the Potatos which have been shipped off to the English markets by our Jersey growers. I stated in my report [Will appear shortly, Eo.] last week that the returns made to the island for Potatos would be £400,000; but it appears from further calculations that have been made, that it is more likely to reach £500,000. The samples I now send to you, Royal Jersey Flukes, were grown partly in my own ground and partly in my next neighbour's; the latter are Prince of Wales. In a small island like Jersey, with its 50,000 inhabitants, can make such a splendid return from one crop, it lets some light in upon the theory of 'How the other half of the world lives!' Irrespective of Potatos, large quantities of Grapes and Tomatos are grown here and shipped off, realising a ready sale in the markets of London, Birmingham, Manchester, and other large towns. The question of how it is done is answered: by industry, high cultivation, and careful attention to preparation of plants and tubers before putting sorts where they are to produce the crops, quite as much as by climate. Our Potato growers are artists at the culture, and Tomato growers are not excelled in the ways and means they employ to bring about successful results

The weight of crop of Potatoes reaches the enormous amount of 7 cabots=280 lb., imperial weight, to the perch of 22 feet square—i.e., 'ware' besides this, are the 'seconds' and 'small's.'

ONGAR FLOWER SHOW.—The fourth summer exhibition of the Ongar and District Horticultural Society was held on Wednesday, July 15, in a field kindly lent by the Rev. J. TANNER. The weather turned out most favourably, and the show passed off very successfully. The general exhibits were staged in two spacious marquees, and the cottagers' exhibits in two small marquees, and were quite up to the usual average, the show of flowers being very good. Mr. C. H. F. CHRISTIE, of the Wilderness, kindly threw open his beautiful grounds as a promenade for the visitors to the show, and this proved no small attraction. Great praise is due to the committee for the way in which the arrangements were carried out, and also to the indefatigable Hon. Sec., Dr. SPURDIN, for the hard work he did to make the show a success.

THE READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—This flourishing Society held its first excursion on Wednesday week under most auspicious circumstances, the weather being everything that could be desired. Bleoheim was the place chosen, the Society having received an invitation from the Duke of MARLBOROUGH to visit the grounds and garden of this noted place. A party of about fifty left Reading by the 11.10 train, and on reaching Woodstock were met by Mr. WILLIAMS, the head gardener at Blenheim. The party made their way at once to the Bear Hotel, when luncheon was partaken of, and thence proceeded, under the guidance of Mr. WILLIAMS, to inspect the beauties of Blenheim. The Italian garden and the conservatory were first visited, after which the party went on to the kitchen and fruit gardens, where everything is carried out on an immense scale. The houses were then gone through, and those containing the Orchids excited the admiration of the whole party, the flowers being in splendid condition. The party left Woodstock at 8.10, having experienced an enjoyable outing.

CHILDREN'S FLOWER SHOW.—At the St. Pancras Vestry Hall, on Saturday, July 18, an extensive array of garden flowers cultivated by the children of the Aldenham Street Sunday School in connection with the Presbyterian Church in Regent Square, attracted a considerable gathering of young folks and others interested in their annual competition for prizes. The collection consisted of flowers grown from seed supplied, together with plants that had been distributed at an early stage of growth for careful cultivation. The exhibits numbered over 600, and represented nearly 280 boys and girls. Numerous awards, consisting of money and articles of utility, were distributed by Mrs. AFFLECK FRASER, and amongst the favourite flowers on the prize-list were Nasturtiums, Lupins, scarlet and pink Pelargoniums, Creeping Jenny, and red and white Fuchsia. A programme of bright music was performed by a band, under the direction of Mr. O. H. Bamberger. *Daily News.*

THE BISHOP'S STORTFORD HORTICULTURAL SHOW.—The Committee of the Bishop's Stortford Horticultural Society at a meeting on Thursday, found it desirable to change the date originally fixed for the show to Wednesday, August 19.

EXCURSION TO WITLEY COURT.—On Tuesday last, the employes of the well-known firm of EDWARD WEBB & SONS, Seed and Manure Merchants, Wordsley, Stourbridge, accompanied by Major WENN, took a trip as far as Witley Court, the charming residence of the Earl of DUDLEY.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual picnic of the members of the above Society took place on the 20th inst., in the form of a visit to Ascott Park, Leighton Buzzard, the residence of Leopold de Rothchild, Esq., one of the vice-presidents of the Society; the party numbering between eighty and ninety persons.

NEW BOOK.—A dainty volume, prettily illustrated and elegantly bound, on *Landscape Gardening*, by S. PARSONS, Jun., Superintendent of Parks, New York City, is before us. It will demand further notice at our hands; all we can say for the moment is, that it may be obtained from Messrs. PUTNAM, 27, King William Street, Strand, W.C.

PLANT PORTRAITS.

AÉRIDES HOULLETIANUM, *Revue Horticole*, July 16. —Segments apricot-coloured; lip transversely oblong, two-lobed, white, streaked and dotted with violet.

LACHENALIA COMESII ×. — A cross between *L. reflexa* and *L. quadricolor*. *Gartenflora*, p. 358, 1891.

LACHENALIA REBELIANA ×. — A cross between *L. reflexa* and *L. aurea*. *Gartenflora*, p. 357, 1891.

NEPETA MUSSINI, *Revue Horticole*, July 1, 1891.

PLUM "DESROMAINS."—A seedling raised in the orchard of Dr. Desromains; very fertile, and a good market Plum. *Bulletin d'Arboriculture*, &c., June, 1891.

PARANIS TRICOLOR, Drapeau Belge (*Belgian Standard*).—Colours, red, black, yellow. *Revue de Horticulture Belge*, July 1, 1891.

SPIREA ASTILOIDES VAR. **FLORIBUNDA**, *Revue de l'Horticulture Belge*, July 1, 1891.

WEIGELA EVA RATHKE, *Gartenflora*, t. 1350.

PEACHES AT KETTON HALL, STAMFORD.

The garden at this place, the residence of J. T. Hopwood, Esq., in the pretty Rutlandshire village of the same name, has, of recent years, grown into notoriety for its Peaches and Peach-houses.

The estate is a small one, as are the gardens, but the latter grow bigger as time goes on, and encroach bit by bit on the adjoining meadow. The Peacheries here were described in these pages a few years ago, but the record of a recent visit paid to them may not be without use to the readers of this Journal. The large gothic span-house, built by Mr. Rendle, and glazed by him in the manner associated with his name—that is, large panes placed length-wise of the roof—contains two trees at one end only, to the right and left of the door. One is a Lord Napier Nectarine, a strong tree, with a good crop of fruit, which Mr. Divers, the gardener, said would be ripe in the first week in August. On the other side of the door, is a tree of equal size and vigour, of Victoria Nectarine, which ripens its fruits one month later. The opposite end of this house was covered with two Ivy-leaf Pelargoniums, Albert Crousse, and Madame Crousse, now in full flower, and which have not been without a large border of blossoms since early spring. The house is really a greenhouse, and it is mainly treated as such, the occupants standing on the floor. What is called the "old range," is 180 feet long in divisione. The trees in it, the first division, consisted of three Prince of Wales, two Crimson Galande, and one of Dagmar Peaches. The next division was planted with Royal George, there being three trees; and in the third division, which is the early house, were two of Early Louise and one of Beatrice. These trees show great vigour, and are of large size, and bear annually full crops of the finest fruits.

Another span-roofed Peach-house, with the name of "Carlsbad," is planted in one of its divisions with the following varieties of the Peach:—Bellegarde, Sea Eagle, here a fine autumn fruit, of good flavour; Prince of Wales, which colours well; Early Grosse Mignonne, Barrington, Salway, Lord Palmerston, Princess of Wales, and Early Crawford, a fine showy fruit. Of Nectarines, there are Pineapple, one which Mr. Divers regards as his best late variety; Rivers' Elruge, a large-fruited Seedling of Elruge, of beautiful colour; and Lord Napier; that is, nine varieties of Peaches and three of Nectarines—in all sixteen trees, there being of some more than one tree.

The next division of the above house contains

Nectarinea, Dryden, Lord Napier, Spenser, Violette Hative, and River's Orange; and of Peaches, Abec, Sea Eagle, Alexander, Nectarine Peach, a good late variety, Dymond, Crimson Galande, Lord Palmerstone, and a seedling not yet fruited. These trees are of large size, and are fastened to sloping trellises on each side of the central path, the roots being inside. A row of Figs and Pears, in pots, are placed along each side of the side of the path.

Close to the wall plate, and all round the house, are planted Maréchal Niel Roses, now just making growth, after being cut hard back when their floral harvest was at an end. By this mode of treatment no shade of any account is thrown on the fruit trees, and it is an open question which make the best returns—the Roses or the fruits. When the Roses are in full leaf and flower is the dangerous time for the Peach and Nectarine buds in Rendle's houses, the evils of the sudden bursts of sunshine, which cause a very rapid rise of the temperature, being in great measure averted by the roof-shade afforded by the Roses. A Cherry-house, built with an acute-angled roof, contained Cherries on the north side, and M. Niel Roses on the opposite one. This year the temptation to favour the Roses with a little heat during the flowering period of the Cherries was not resisted, and the Cherry crop was, in consequence, almost a failure.

Yet another Peach-house—a span-roofed one of 100 feet in length, with the Nectarine Peach, Royal George, Prince of Wales, Sea Eagle, Princess of Wales, Stirling Castle, Barrington, Crimson Galande, and Early Albert, a very good variety. It was to a tree of Princess of Wales in this house that sulphate of iron mixed with water, after partially laying bare the roots, was applied with such good results for the yellows (see *Gardeners' Chronicle*, p. 278, 1889). Fruits of Barrington Peach have been grown in this house up to 12 oz. in weight.

To make Mr. Divers' success in growing these fruits the more remarkable, every bit of the soil in which they are grown has to be fetched from a distance, iron being in excess in the soil of the garden, and rendering it inimical to the trees either indoors or out.

All is not ruled by pence, shillings, and pence at Ketton, but the ornamental has a fair share of attention, and we saw small houses in which were a collection of Orchids, a gigantic *Bongainvillea glabra*, *Streptosolen Jamesoni*, employed as a wall creeper; Palms, and general flowering plants. It will be understood that the greater portion of the fruit is disposed of, Peaches fetching for weeks together 30s. per dozen, this of itself bespeaking the excellence of the methods of cultivation pursued.

ENTOMOLOGY.

AN ORCHID-EATER.

A CORRESPONDENT from Duckinfield, Cheshire, has sent us the insect represented in the accompanying wood-cut (fig. 15), and also a leaf of *Lælia majalis* upon which it was caught, in order to show the damage which it had done in a single night. Another plant of *Lælia anceps* was attacked in just the same manner, and as yet the insect had not attacked any other variety of Orchid plants. As the species of Orchids attacked are natives of Mexico, we may, in all probability, imagine that the foreign beetle in question was imported with the plants, and that it also is a native of Mexico or some adjacent part of the New World. It will be noticed that the leaf exhibits a number of dark blotches, and the upper surface of the leaf, under a lens, is seen to be finely corrugated in those parts, although the leaf is not gnawed into holes; the remainder of the leaf being entire and uninjured.

The insect itself, *Eunalcus albo-costatus*, is a beetle belonging to the very numerous tribe of the Longicornia, or long-horns. It belongs to the section in which the prothorax, or neck, is not produced on each side into a spine. It measures nearly half an inch in length, and is of a

luteous grey colour; the front of the head between the eyes rather deeply impressed; the eyes encircle the base of the antennæ, which are rather shorter than the whole body of the insect. The prothorax is convex, and rather conical in shape, with a central whitish narrow line, on each side of which the surface is punctured, and with a narrow line of similar pale colour running parallel to each lateral margin; and there is a shallow, transverse impression running across near the base of this part of the body.

The elytra are moderately long, and simply rounded at the apex, with a narrow space along each side of the suture, with a number of small dark spots, and the disc of each elytron is marked with three narrow raised white lines or costæ, the front of which, next the suture, is slightly curved outwardly to about one-third of its length from the base; it extends nearly to the apex of the elytron, being united to the second line at about one-sixth distance from the apex, and again it is united just before reaching the apex, with the third or outer pale line. The legs are of the usual form, of moderate length, the middle tibiæ simple, and the tarsi of the usual subtetramerous structure.

I am not acquainted with any of the myriads of New World Longicorns exactly agreeing with this species, which appears to belong to Thomson's genus *Eunalcus*, *Systema Cerambyc.*, p. 109; Lacordaire *Gen. Col.*, ix., 627; and to be closely allied to *Eunalcus lineatus* of Bates, figured in the *Biologia Centrali-Americana Zool. Coleopt.*, vol. v., p. 351, pl. 22, fig. 16, which is a native of Mexico and Guatemala, 4 lines long, and having the white longitudinal lines on the elytra straight, and not curved, as in the species before us.

In the economy of Nature it is the duty of this great tribe of long-horned beetles to keep the rank vegetation, especially of the Tropics, in check by feeding on the foliage or burrowing into the solid parts of the plants. The insect before us, by apparently gnawing the upper surface of the leaves, adopts a different mode from those which gnaw and eat distinct patches in the leaves. *L. O. Westwood, Oxford.*

HOME CORRESPONDENCE.

ROSE W. A. RICHARDSON.—I am much obliged for hints as to cultivation by Mr. Piper, at p. 35, but it so happens that we have been "rational" in pruning, leaving it to ramble at will all over the roof of the greenhouse, as suggested by your correspondent, and then it has failed to flower in a satisfactory manner. I think I have, in mentioning the pruning of this Rose in these columns before, said that it should not be pruned hard, if abundant flowering is wanted. Your correspondent's case is, perhaps, exceptional, as I have never seen it bloom so well indoors as in the open. Hereabouts it flowers most profusely upon the open walls, and beautiful it is in the bud state. *W. A. Cook, Compton Bassett.*

PRUNING GOOSEBERRY BUSHES.—I note in the last issue your report of the Hardy Fruit Conference, that it was discussed whether it is better to prune the Gooseberry for the production of fruit or not. It is not possible to decide the matter universally either one way or another, so much depends upon circumstances such as the kind of soil in which the bushes are growing; in some soils there is a great difference as to the manner in which Gooseberry bushes grow and fruit—in one sort of soil they make but little wood, but plenty of fruit, which of course is a means of still further checking growth of shoots. In other places the bushes grow luxuriantly, and require a considerable amount of pruning to keep them within bounds. Under these conditions it is not possible to decide other than by experience. From my experience, a calcareous soil is the best suited to the Gooseberry, and in soil of this character the bushes do not make vigorous growth, and need but little pruning, and hardly ever miss having a crop, except, of course, when frost destroys it before the branches are furnished with foliage to shelter the tender fruit and bloom. A mishap of this kind has nothing to do with the pruning, but is one over which we have little or no control. The soil in this garden is heavy and retentive, not clay, but it rests on a bed of what is akin to clay, except that large

flints abound in it, and when it is worked in wet weather, it gives one the idea of being a kind of clay; below, at variable depths, chalk is found, therefore it cannot be said that this is a chalk soil, but the top spit contains a good deal of chalk, scarcely discernible to the eye for the reason that for a number of years a quantity of chalk was spread on the surface during the winter for agricultural purposes. Such a soil is evidently well suited to the growth of Gooseberries. Our bushes have been planted eleven years, and during that time, they have only received manure three times, but they have never failed to give us a crop of fruit. I send you a small branch to show how heavily the trees are laden. Most of the varieties make but little growth now, and need but little pruning; indeed, some sorts grow so little that it is out of the question to think of getting from them suitable shoots for cuttings. Where the Gooseberry bushes make abundant growth and but little fruit, they should be transplanted. The bushes ought then to be pruned in such a manner that the main branches stand fairly wide apart, so that the wood may be matured. It is with the Gooseberry as with other fruit trees, if the current season's growth be not ripened, it is in vain that

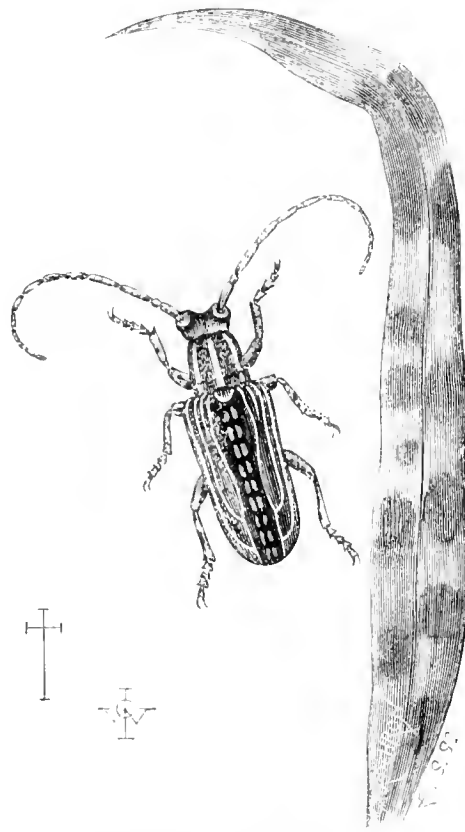


FIG. 15.—LEAF OF *LELIA MAJALIS*, DAMAGED IN ONE NIGHT BY THE BEETLE, *EUNALCUS ALBO-COSTATUS*. (SEE P. 108.)

the grower expects a full crop of fruits. Gooseberries fruit well on spurs and the previous year's leading shoots. My aim in pruning is to establish bushes with several main branches, and having an open centre, so that ample sunlight can play amongst the branches, and until the bushes reach their full size, I allow all leading shoots to grow 1 foot long annually if they will do this, and obtain fruiting bushes quickly. If the main branches show signs of weakness, it is best to remove some of them each year, replacing them with young shoots; in this manner the vigour of the bushes gets renewed. When bushes are so established, and produce a full crop of fruit annually, it will be found that but little pruning is needed. We endeavour to do the pruning necessary before Christmas, as experience teaches me that there is no necessity to defer the operation till a later date. Pruning is done with a pair of hand-shears in preference to the knife, on the score of the work being much quicker done. I am an advocate of summer-pruning of bush-fruits, where growth is freely made, and the time can be found to do it; in fact, time ought to be always found for this job. The advantage of shortening the current growth from the middle

to the end of June is two-fold. First, the removal of such shoots that must of necessity come away at the winter pruning, and prevents crowding; moreover, the fruit colours and ripens better, and is rendered much cleaner by being exposed to rain. As previously noted, the fact whether Gooseberry trees require much or little pruning depends entirely upon circumstances, which can only be accurately judged on the spot, but where they are yearly fruitful, the work of pruning is considerably lessened by the crops borne, or ought to be if the bushes are rightly managed. *E. Molyneux.*

ON THE VARYING CHARACTER OF HYBRIDS.—A correspondent (p. 753, vol. ix.) inclines to the belief that one may foresee or predict, by employing certain combinations, the character of a proposed hybrid. The idea that hybrids are intermediate between two parents as regards their general features is a very common one. This sometimes results, but so far as my experience goes, it is the exception rather than the rule. *Diplacus aurantiacus* of gardens, came from one of my youthful crosses. This is intermediate between *D. punicus* and *D. glutinosus*, its parents. But the most interesting of my experiences has been the vast difference between the seedlings raised from a single flower. I believe I was the first to introduce the modern race of hybrid Fuchsias. *St. Clare* did not appear in the trade as soon as *Standishii* or *Dominiana*, because its propagators kept it on hand longer to raise stock, but my plants flowered the second year after the introduction of *Fuchsia fulgens*—the male parent. A garden form, known as *F. longiflora*, was the female. Only one flower was crossed, only one berry produced. I do not remember how many plants, but I believe several score, but no two plants were alike. A few were little different from the mother plant; the tendency was more in that direction than in the direction of *F. fulgens*. Since then I have succeeded in getting *Fuchsia arborescens* to seed with pollen from one of our garden varieties. Instead of there being any intermediate character, the progeny were exactly *arborescens*. I know some may say, "No doubt some error. Of course the flower, in some way, received its own pollen." I can only remark, that old fellows like ourselves cannot be caught in that way. But without going into a list of my experiences, I will tell of one before me now. Two years ago, I pollenised *Rosa kamtschatica* with our well-known garden form, *General Jacqueminot*. The sowing in the open ground from this one "haw," produced only two plants which have not yet flowered, but so far as appearances go, one plant is the "General," and the other, the original *Kamtschatica* Rose! There may be some differences in the flowers. I expect them, but certainly so far as the plants themselves got, there is nothing like the exact mixture of characters so often supposed from hybridisation. To my mind, this prevalent idea of an equal fusion of character in hybrids, does much harm to vegetable biology. It induces us to overlook the fact that plants possess the power to vary enormously, outside of any conditions of environment, that their characters would be constant and exact only for foreign pollen, or some other accident coming along to produce change. This innate power to change must, in the usual order of things, be under the operation of some law, but what that law is, no one has yet been able to get the slightest conception of. It does not help us in this investigation to assume that it is dependent on the chapter of accidents. We see, at any rate, by the results of this Rose experiment, that no accident of which we have at present any appreciation of, could have produced the results as stated. *Thomas Mehan, Germantown Nurseries, Philadelphia, U.S.A., July 6, 1891.*

"ENGLISH WONDER" PEA—In the *Gardeners' Chronicle* of Saturday last, you notice a sample of this new Pea, sent to you by Messrs. Cannell and Sons, and many of your readers may like to know its origio. It was raised by a Mr. Tipping, an old gardener at Kenilworth, who, for several years past, has paid attention to the hybridisation of Peas, and raised, amongst others, "Early Bird" and "William the Conqueror," and this dwarf Pea, "English Wonder," and they have been, and still are, extensively grown for seed by Mr. Burbury, seed grower and farmer, Kenilworth. I saw in the gardens at Stoneleigh Abbey, the three sorts I have named growing there; and "William the Conqueror" and "William the First," side by side, bore a close resemblance, but the former is an excellent cropper. Mr. Biddard, gardener at Stoneleigh, thinks highly of "English Wonder." I have seen it growing in

other places, and Mr. Burbury sent to the Kenilworth Show samples of pods and haulm in the bearing state. It is a Pea of excellent flavour, dwarf, and a good cropper, and very early. Mr. Tipping is still at work with the crossing of Peas; but we are now so rich in first-class varieties, that only something with very superior all-round qualities should be introduced. *H. D.*

RASPBERRIES.—Of the many varieties of Raspberries, Superlative will, I feel sure, as it becomes known, take the leading position, as it is a great bearer, the fruits very large, compared with that of some others of good flavour. We have it growing side by side with Hornet, Baumforth's Seedling, and Fastolf, and they cannot be compared with it; and this may readily be seen without a very close inspection, the big conical fruits standing up boldly from the stout much-branched canes. So convinced am I of its superiority, that I am saving every sucker that pushes up from the shoots; and I would discard most of the other sorts, but that Fastolf is earlier than it, and I must keep it on that account. As yet, Superlative seems very scarce, as last year I ordered 100, and could only get supplied with half that quantity, and it is hardly likely that nurserymen have much stock of it as yet. Those who get it should plant at least 4 feet apart, as it is a strong grower, the canes running to a good height, being very stout and stiff, which is also much in favour of the variety, stakes hardly being required, for if the three or four canes, usually left to each stool or crown, are brought together and tied at the top, they stand almost rigid against the wind. As soon as all the fruit is picked, the old canes should be cut out. Raspberries should never be dug amongst, as by doing so the roots are disturbed, but a good top-dressing of rotted dung should be afforded them every winter, leaving it as a mulching. *J. Sheppard.*

DELPHINIUMS.—We forward you a few pips of some novel crosses of the Delphinium, gathered from flower-spikes 3 feet 6 inches in length, independently of the leafy portion; each spike attended with three or four surrounding branches or spikelets, if you can call that a spikelet which is 2 feet long. Viewed in this way, plants about 5 or 6 feet high make a noble backing to a border, and bloom throughout the summer and into the autumn. Wonder does not belie its name, with its swarm of bees instead of a single bee in its centre. King of Delphiniums, too, is royal in size, if not also in colouring. *Kelway & Son.* [Unfortunately, the bloom had resolved themselves into their elements when we examined them, but the magnificent specimens exhibited by Messrs. Kelway at the shows of the Royal Horticultural Society amply bear out their statement. *Ed.*]

LABELS.—The mention of the label question in No. 237 of the *Gardeners' Chronicle* induces me to tell you of my method for the alpine garden, where certainly conspicuous labels do not look well. I employ pieces of broken bottles of a dark colour, write the name thereon with a good deep-scratching diamond, and varnish over with a white, thick oil-colour. This remains in the scratched name when the oil-colour is rubbed off the surface. These labels are not stuck in the ground, but placed near the plants and they are very durable. *O. F., Lehenhof.*

CHRYSANTHEMUMS SHOWING FOR BLOOM.—Would some of the readers of the *Gardeners' Chronicle* who are Chrysanthemum growers, kindly say if it is a usual thing for "crown buds" to be showing so early as July, as a great many are doing here, viz., Mrs. Wright, Beverley, Val d'Andorre, Comte de Germiny, Grandiflorum, Belle Paule, G. Glenny, Refulgence, &c., and I fear that many more will show before long. The cuttings were put in during the last week in November and the first week in December, and received cool treatment, frost only just being excluded. If they are run on to the terminal bud, would they be good enough for exhibition? I would also be glad of a remedy for thrips, [Tobacco fumigation, or pyrethrum powder. *Ed.*] which have been and are still very troublesome. *Young Gardener.*

SOCIETIES.

ROYAL HORTICULTURAL.

CARNATION AND PICOTEÉ CONFERENCE.

On the occasion of the Chiswick Conference in July last year, a sub-committee selected from the Floral Committee examined the collection of border

Pinks growing in the garden, and awarded three marks (xxx) to each of the following varieties:—Her Majesty (Hooper), Beauty of Bath (Hooper), Modesty (Turner), Hattie Dean (Dean), Charmer (Dean), Mrs. Dark (Dean).

The Fruit and Vegetable Committee, P. C. M. Veitch, Esq., in the chair; and Messrs. J. H. Veitch, Denning, Bates, Reynolds, Wythes, Hudson, Crowley, Dean, Balderson, and Cheal, examined the collection of Peas growing in the garden, and awarded three marks (xxx) to the following sorts:—Ameer (Harrison & Sons), Early Green Marrow, Sutton's Empress of India (Sutton & Sons); Early Green Wrinkled.

This Committee met again on 14th inst. Present:—W. Warren, Esq., in the chair; Messrs. Dean, Woodward, Wythes, Reynolds, Smith, Hudson, and Denning, when three marks (xxx) were awarded to the following varieties of Peas, as representing the best types in the collection:—Duke of Albany (Veitch), tall Green Marrow; Telephone (Veitch), tall Green Marrow; Cheltenham (Veitch), tall Green Marrow; Extra Dwarf Daisy (Carter & Co.), Green Marrow; Critic (Eckford), tall; Essential (Eckford), tall; Epicure (Eckford), tall; The Echo (Eckford), dwarf; Alderman (Laxton), tall; The Marquis (Laxton), tall.

Two marks (xx) were awarded to the following varieties:—Sutton's Early Marrowfat (Sutton & Sons), dwarf; Optimum (Laxton), tall.

A 1st class certificate was awarded to Potato Early Short Top, provisionally named (Laxton), a remarkably fine and early variety. Tubers large, fully-grown—greatly in advance of any other variety.

TUESDAY, July 21.—The show of the National Carnation and Picoteé Society, and the meeting of the Royal Horticultural Society's committees, which were held together in the Drill Hall, James Street, Westminster, made a very gay and attractive whole, and the attendance of the public was fairly good.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. B. Wynne, W. Goldring, H. Herbst, J. B. May, F. Ross, G. Phippen, C. E. Pearson, W. Bennett, T. W. Girdlestone, H. Turner, C. Noble, R. Dean, Dr. M. T. Masters, C. Bryccsson, P. Paul, J. Fraser, and J. Laing.

From the nurseries of Messrs. Laing and Mather, Kelso, came some fairly fine blooms of a fixed sport of Carnation Souvenir de la Malmaison, named Lady Middleton; the ground colour of which is that of the older pink form (also shown in quantity), of this variety with crimson stripes; Madame Arthur Waroche is a bright red flower, a seedling of Belgian origin, also from Souvenir de la Malmaison Carnation. Two dozen fine blooms of the original Carnation Souvenir de la Malmaison were shown, with flowers not so monstrously overgrown as we sometimes observe them.

A very beautiful lot of stands of cut-flowers of Carnations and Picotees was put up by Messrs. J. Veitch & Sons, Chelsea. The flowers were, perhaps, of less substance and size than we have seen them in other years, but in the purity of their colours and regularity of outlines, there was nothing left to desire. A few of the best flowers may be mentioned—Self: Lothian, pink; Silver King, cerise; Florian, buff; Brilliant, lake; W. P. Midner, Comte de Chambord, both white; Royal Purple, purple; Masterpiece, carnation-red; The Cropper, brilliant scarlet; Beauty of Foxhall, rich purple; Magnum Bonum, scarlet; Reynolds Hole, salmon-pink. Flakes and bizarres: Miss Crombie, yellow, flaked crimson; Colmont Beauty, pale buff and purple-rose; R. Jefferies, yellow and crimson; Mrs. Thomas, Thalia, Joe Baystock, &c. Among the border Carnations shown in this collection were Border Maid, rose-self, running out at the margin into white; and the Crimson Clove.

A large collection of flowers of hardy perennials in variety was staged by Messrs. Paul and Son, Old Nurseries, Chesham. This included seven boxes of cut roses in fine condition and rich variety. Rarer plants observed were *Rudbeckia californica*, a flower having large yellow rays, and conical green disc—a strong grower; (*Euthera speciosa*, white; *E. Youngi*, deep yellow, a fine plant for borders; *Disa grandiflora*, *Potentilla formosa*, with rose-red flowers; *Canna Francis Corbin*, yellow ground, spotted with scarlet; *C. Hippolyte Flandrin*, orange-red; *Anton Chantin*, yellow, sparsely spotted with red; *C. Wilhelm Piltzer*, bright crimson; *C. Madame Crozy*, crimson, with a bright yellow edge; and *C. Fran-*

cisque Morel, a deep red, very dwarf in habit, and of telling shade; *Babiana rubro-cyanea*; many species of Lilies, *Brodiaea Murrayana*, *Vallota purpurea eximeia*, and the pretty pink-flowered *Pentstemon barbata*.

Some excellent Verbenas, as cut blooms, were staged by Mr. W. Stacey, florist, Dunmow. There was great choice of colour, and the trusses were of good size. It is a pity these pretty plants are not more employed in beds and borders, and as greenhouse plants for early summer use.

Hardy flowers came in great profusion from the nurseries of Messrs. J. Laing & Son, Forest Hill, S.E. There were *Alströmérias*, white *Antirrhinums*, Carnations, *Anthemis nobilis*, yellow rays and orange disc; *Gaillardia grandiflora*, *Violas*, *Gladiolus ramosus*, several *Calochortus*, *Centaurea macrocephala*, &c.

Some nice boxes of nice Rose blooms were shown by Mr. W. Rumsey, Waltham Cross; and a semi-double pink flowered ivy-leaf *P. largonium*, Beauty of Castle Hill, was shown by Mr. R. Owen, florist, Maidenhead. It was dwarf in habit, and free-flowering.

Messrs. W. Paul & Son, Waltham Cross, showed their Tea Rose, Corinna, a pretty pinkish-buff with a filbert-shaped bud; H. P. Spenser, a beautiful Rose, full of a flesh-pink colour; and Mrs. Paul, a nice bouquet Rose, of a small size, and pale blush in colour.

One of the best, if not the best, collections of self-coloured Sweet Peas we have ever noticed was that shown by Mr. Eckford, Wem, Salop. Of these we may name the following colours:—dark purple, light purple, rose-blush, crimson, pale pink, pale yellow. Variegated flowers of a good type were also found in the collection, but the selfs were very choice and true.

Messrs. Kelway & Sons, Langport, Somerset, showed a very extensive collection of perennial *Gaillardias*, the newest being Buffalo Bill, in naming which they have come out of the mists of antiquity to contemporary persons. It has fluted forets of a yellow colour, and, like all these *Gaillardia grandiflora*, it will come true from seed.

A number of Delphiniums were shown, amongst them, D. Zahl, a species with a flower of the colour of the Evening Primrose. Some compact-growing double-flowered varieties were observed in Langport Gem and Henry Drummond. Amongst their miscellaneous plants may be mentioned *Centaurea Tourneforti*, yellow; *Cephalaria speciosa*, creamy white, globular heads of flowers; and *Telekia speciosa*.

From Mr. Bateman's garden at Worthing, came a fine spike of *Phormium tenax*, New Zealand Flax, which shows that whatever may have been the severity of the winter near London, it was materially better on the south coast.

One of the most interesting exhibits consisted of a series of cut specimens illustrative of the more decorative kinds of deciduous trees and shrubs, forming an object lesson which greatly needs enforcing. Amongst the deep purple-leaved plants none is deeper than the purple Nut; *Amygdalus dulcis purpureus* may also be mentioned, together with *Berberis vulgaris purpureus*, and *Prunus Pissardi*, the yellow flowers of *Berberis aristata*, thrown up by a background of these purple leaves, was very effective. *Acer latum*, alias *colchicum rubrum*, *A. palmatum atropurpureum*, and others furnish various shades of purple and red. Amongst the yellow-leaved series, nothing finer than the golden Catalpa can be seen, and associated with it may be mentioned the Golden Elder, the Golden Oak, "Concordia," various Privets, such as *ovalifolium var. elegantissimum*; Maples, Cornels, and *Weigela Loomaui aurea*. The noble foliage of *Quercus daimio* was especially conspicuous amongst the green-leaved set in strange contrast with the finely-cut leaves of *O. filicifolia*. *Stephanandra flexuosa*, various Maples, and others "too numerous to mention," went to make up a very interesting group. Intermixed with these were cut specimens of various flowering shrubs, such as *Spiraea canescens*, *Weigela sessilifolia*, a yellow-flowered species, new to us, and one that is interesting, and, perhaps, susceptible of improvement; at present the colour is like that of the corolla of *Lonicera Ledebouri*, a near neighbour of the *Weigela*. Specimens of *Ceanothus*—pink, white, blue, and cream-coloured; *Itea virginica*, *Carmichaelia*, and others, were effectively mixed in with the foliage. This group was exhibited by Messrs. Veitch & Sons.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien, W. Courtauld, T. B. Hlaywood,

Maxwell T. Masters, H. Williams, J. Douglas, E. Hill, C. Pilcher, H. Ballantine, H. M. Pollett, A. H. Snee.

The Orchids shown, if not very numerous, were of a choice character. Foremost among them, we may note Mr. Hamar Bass's variety of *Cattleya Hardyana*. This was a gorgeous flower, of large size, with broad segments of a very deep rose or rosy-lilac colour, the fore part of the lip of the richest purple, while the orange-yellow throat was streaked with purple. No wonder the award of a First-Class Certificate was unanimous.

From the garden of the Marquis of Salisbury came a large number of cut spikes of *Saccolabium Blumei*, each of great length, and densely crowded with flowers; a Silver Flora Medal was awarded to the exhibit, which gave evidence of superior cultivation. Equally remarkable from the point of view of cultivation, if not more so, was the group of *Disa grandiflora* shown from Chatsworth, and to which a Silver Flora Medal was awarded. From the gardens of T. W. Temple, Esq., Tunbridge Wells, came a nice group of varieties of *Cattleya gigas* which won for the exhibitor a Silver Banksian Medal. Mr. Temple also showed a plant of a white variety of *Trichopilia tortilis*.

Messrs. Seeger & Tropp had a small group of white flowering Orchids, including *Dendrobium Dearei* and *D. lophophotum*, together with *Aerides maculosum*. C. G. Smith, Esq., Cobham, showed the old *Oncidium Lanceanum*. Mr. B. S. Williams brought an interesting group of Orchids, for which he obtained a Silver Flora Medal. Among the plants exhibited were some nice pieces of *Cypripedium Morganæ*, *C. selligerum rubrum*, *C. superbiens*, *C. tonsum*, *Chysis lavis*, the curious orange-flowered *Cochlidia Noezliana* (picked out for a Botanical Certificate), *Trichopilia Galeottiana*, the whole backed up by a fine lot of Vandas.

Fruit Committee.

Present: W. Warren, Esq., in the chair; and Messrs. A. Dean, G. Woodward, G. Wythes, G. Reynolds, J. Smith, J. Hudson, and W. Deuning.

A large collection of small fruits, valuable as an object-lesson to gardeners and amateurs alike, came from Messrs. J. Veitch & Sons, Chelsea. It consisted of about sixty dishes of Gooseberries, show and dessert varieties; a number of stems of the Gooseberry grown as upright cordons, these being loaded heavily with berries; some very fine examples of the best early Cherries, amongst them *Imperatrice Eugène*, Governor Wood, Black Eagle, Frogmore Early Bigarreau, Bigarreau Gros Rouge, Belle Magnifique, Belle d'Orleans, Mammoth, Elton, Nouvelle Royal. The collection of Raspberries was a small one, but it contained all or nearly all the varieties worth growing—we may name the conical-fruited, prolific *Superlative*, Carter's Prolific, and *Semper Fidelis*, fine for preserving; Carter's Keigbley Queen, *Magnum Bonum*, Northumberland Fullbasket, and *Yellow Antwerp*. About twenty varieties of Strawberries were shown, including *Helena Gloede*, *The Captain*, *Loxford Hall*, *J. Veitch*, and *Latest of All*. Some dishes of the best kinds of black, white, and red Currants completed the exhibit.

Messrs. T. F. Rivers & Son, Sawbridgeworth, Herts, had some superb dishes of Cherries—*Turkey Black Heart*, *Ludwig's Bigarreau*, *Olivet*, *Gémit d'Helldeluge*, *May Duke*, *Black Heart*, *Bigarreau Noir de Guben*, *D'Espagne*, *Bedford Prolific*, *Griotto Imperiale*, and *white Bigarreau*. Some few dishes were shown of early Peaches from the house, such as *Belle Beauce*, *Exquisite*, *Albatross*, and *Stump the World*; likewise a seedling *Nectarine* of good eating quality, which Mr. Rivers has not yet named. The *Curlew*, *River's Heron*, and *Early Transparent Gage Plums* are worthy of notice—the first two novelties of merit; the fruits came from an orchard-house.

Messrs. J. Carter & Co., High Holborn, exhibited, from their trial grounds at Perry Vale, S.E., a collection of eighty-seven dishes of almost as many varieties of garden Peas. A good many of these were of their own raising, as *Stratagem*, *Anticipator*, *Telegraph*, and its selection *Telephone*; *Elephant*, a fine straight pod, with nine peas therein; *Daisy*, a pea not yet sent out, a plant 2 feet high, with pods well filled.

Mr. W. A. Cook, gr. to Major Heneage, Compton Bassett, Wilts, exhibited eight dishes of various Peas, of which Sir F. R. Milbank and The Duchess were capital examples.

The Dowager Lady Freake, Fullwell Park, Twickenham, showed four dishes of excellent Peaches, *Grosse Mignonne*, Dr. Hogg, and received a cultural commendation.

The Forde Abbey Tomato, a bunch of ripe fruits weighing four pounds, was shown by Mr. Crook, gr., Forde Abbey, Chard, also a seedling Tomato, *Abbi-ana*, a smooth red variety.

Mr. Divers, gr. to J. T. Hopwood, Esq., Ketton Hall, Stamford, showed some very large fruits of *Peaches*, *Sea Eagle*, *Barrington*, *Royal George*, *Prince of Wales*, and *Princess of Wales*; also the *Nectarine Peach*. Most of these fruits were of high colour, if in some instances barely ripe.

Mr. H. A. Page, gr. to F. Crisp, Esq., White House, New Southgate, exhibited three massive bunches of *Canon Hall Muscat Grapes*, barely finished. *Fig. Ursule d'Avignon*, a small pale brown fruit that cracks when ripe; a new white *Currant*, *Pride of Aston*; and a dish of *Nectarines*. Lord Howard of Glossop (gr. Mr. R. Ashton), showed *Melons*; and from the Society's garden came sixteen dishes of *Currants*, red, brown, and white.

List of Awards.

ORCHID COMMITTEE.

Silver Flora Medal.

To B. S. Williams, Esq., for group of Orchids.
To Duke of Devonshire, for *Disa grandiflora*.
To Marquis of Salisbury, for *Saccolabium Blumei* (cut spikes).

Silver Banksian Medal.

To J. W. Temple, Esq., Tunbridge Wells, for *Cattleya gigas*, group.

First-class Certificate.

To Hamar Bass, Esq., Byrkley, for *Cattleya Hardyana* (Hamar Bass's var.).

Botanical Certificate.

To B. S. Williams, & Son, for *Cochlidia Noezliana*.

FLORAL COMMITTEE.

First-class Certificate.

To Allamanda Williamsii, from Messrs. B. S. Williams & Son.

Awards of Merit.

To Ivy-leaved *Pelargonium Beauty of Castle Hill*, from Mr. R. Owen.

To *Pteris serrulata pendula*, from Mr. F. Lane.

To *Rudbeckia californica*, from Messrs. Paul & Son.

To *Spiræa Beauty of Knapp Hill*, from Mr. A. Waterer.

To *Sweet Pea Lady Penzance*, from Mr. H. Eckford.

To *Sweet Pea Venus*, from Mr. H. Eckford.

To *Sweet Pea Mrs. Eckford*, from Mr. H. Eckford.

Botanical Certificate.

To *Delphinium Zaili* (species), Messrs. Kelway & Sons.

MEDALS.

Silver Flora.

To Messrs. Paul & Son, for Group of Roses, &c.

To Messrs. J. Veitch & Son, for Group of cut hardy foliage.

Silver Banksian.

To Messrs. Laing & Mather, for Collection of cut Carnations.

To Mr. W. Rumney, for Collection of cut Roses.

To Messrs. Kelway & Sons, for Collection of hardy flowers.

To Messrs. J. Laing & Sons, for Collection of hardy flowers.

To Mr. T. S. Ware, for Groups of Lilies.

To Mr. W. Stacey, for Collection of Verbenas.

Bronze Banksian.

To Messrs. J. Veitch & Sons, for Collection of Carnations and Picotees.

FRUIT COMMITTEE.

Silver Gilt Banksian Medal.

To Messrs. J. Veitch & Sons, Chelsea, for 250 dishes of fruit.

To Messrs. T. Rivers & Sons, for Peaches, Plums, &c.

Silver Banksian.

To W. H. Divers, Esq., Ketton Hall, Stamford for Peaches.

To James Carter, Esq., for Collection of Peas (180 vars.).

First-class Certificate.

To Seedling Strawberries, from Mr. W. Allan, gr. to Lord Sutherland, Gunton Park, Norwich.

At the close of the ordinary duties of the Fruit Committee, Mr. Rivers stated he had a resolution to propose bearing on the subject of fruit culture, which was now commanding attention. He said the Minister of Agriculture, in speaking at the Guild-

hall last week, did not appear to know the Royal Horticultural Society had a special committee of the most competent men, and he thought the Society ought to take a more prominent position, and lead the way instead of being left behind, as an authority on the subject of fruit, especially as they possessed such a great collection of trees and varieties in their gardens. Mr. Rivers concluded his remarks by proposing the following resolution:—

"That it is desirable that the Royal Horticultural Society, acting through its Fruit Committee, should endeavour to guide farmers and others, who are intending to plant, in the choice of the best and most profitable sorts of fruits, and that a leaflet should be prepared by the Committee with the necessary information, and that such leaflets be distributed by the Royal Horticultural Society in the widest possible manner."

Mr. J. Wright, in seconding the resolution, said he had sometimes thought the Council were waiting for some expression of the views of their Fruit Committee on this question. It was most desirable and appropriate that the Society should, as they could, give good advice to all who need it on the subject of useful fruit production, and he was sure the Council would give the best consideration to the resolution. Mr. Banyard and Mr. Crowley gave their strong approval to the object in view, and the resolution was passed unanimously, Dr. Hogg remarking he thought the committee had done a good day's work.

NATIONAL CARNATION AND PICOTEE SOCIETY, SOUTHERN SECTION.

Miscellaneous Self's and Fancies.—These, as is usual, made an effective display; some fine blooms were staged, and they attracted a good deal of attention. The best twenty-four blooms, in not less than twelve dissimilar varieties, came from Mr. C. Turner, who had *Alnra*, *Victory*, *Hutchinson's Rose* (self), Mrs. Reynolds Hole, *Annie Douglas*, Lord Rendlesham, Mrs. Maclaren (deep crimson self), *Ruby* (ruby self, very fine), *Charles Turner* (crimson self), *Fimbriata alba*, *Germania*, *Duchess of Fife* (soft pink), *Robert Hogg*, a rare form, &c. 2nd, Mr. F. Hooper, Bath, with Mrs. Little, *Squire Potts*, run; *Queen of Roses*, self; Mrs. Reynolds Hole, *White Queen*, *Alice*, flaked with pink; *Rosea perfecta*, self; Mrs. Laing, flaked with purple; *Pride of Penshurst*, *Ruth*, white self, &c. 3rd, Mr. J. Douglas, with some promising seedlings. 4th, Mr. T. H. Cattley.

The best twelve blooms, dissimilar, came from Mr. E. Rowan, who had fine blooms of *Purple Emperor*, *Comtesse de Paris*, Mrs. R. Hole, Vice-President, a rich crimson self; *Edith*, *Rose Celestial*, fine in colour; *President*, a bright purple self; *Middle Duttonche*, maroon self; Mrs. Ducroz, bright rose; and *Lady Agnes*, blush, striped and flaked with pink. 2nd, Mr. F. Nutt, with very good flowers, unnamed. 4th, Mr. G. Chaundy.

In the class for twelve plants in pots, there were two or three collections, but nothing worthy of special mention.

The premier Carnation was S.F. *Henry Cannell*, shown by Mr. J. J. Keen; and the premier Picotee, medium rose-edge *Madeline*, a beautiful flower, remarkable for its fine quality and purity.

First-class Certificates of Merit were awarded to Martin R. Smith, Esq., Hayes, for *Niphetos*, a beautiful white self Carnation of rare quality; and to a dull red self named *Gwendoline*, large, and having finely formed petals.

THE MIDLAND PINK SOCIETY.

JULY 14. — Our Wolverhampton friends undoubtedly scored on the occasion of the first exhibition of the Midland Section of the National Pink Society on July 14. They were admirably served in that they were able to hold it in connection with the Wolverhampton Floral Fête, and the fragrant Pink on one side of the flower-tent by no means ingloriously competed with the fragrant Rose on the other side, as both were in good form.

There were two competitors in the class for twelve Pinks in distinct varieties, Mr. M. Campbell, Florist, Blantyre, N.B., taking 1st prize with some good blooms for the season, of *Modesty*, *Boiard*, *Mary Anderson*, *Deuce*, *Lowlander*, *Emmeline*, *George Kennedy*, *Princess of Wales*, *Empress of India*, *Elizabeth*, *Samuel Barlow*, and *Sensation*. The 2nd prize was awarded to Mr. James Thurstan, Richmond Road, Cardiff, who had Mrs. Thurstan, Mrs. Morton, James Thurstan, John Dorington and George Hodgkinson, varieties of his own raising, and seedlings of considerable promise.

In the class for twelve blooms in not less than six varieties, Mr. A. R. Brown, Handsworth, Birmingham, was 1st with well laced blooms of Fred Hooper, Boiard, Zoe, Amy (very fine), Empress of India, Modesty, Rosy Morn, George White, and Victory, a few being in duplicate. 2nd, Mr. M. Campbell, having, distinct from the foregoing, Device, Emily, Emmeline, and Angus Paul. With six blooms distinct, Mr. A. R. Brown was again 1st, showing in good character, Rosy Morn, Amy, Boiard, Modesty, George White, and Empress of India. 2nd, Mr. C. F. Thurstan, Pennfields, Wolverhampton, with Device, Erudia, and Mrs. Thurstan differing from the foregoing. Mr. F. Morton, Merridale Grove, Wolverhampton, was 3rd. With six blooms in three varieties, Mr. A. R. Brown, who was in strong form, was again 1st, having Amy, Modesty, Eurydice, and Victory, two of them in duplicate. 2nd, Mr. C. F. Thurstan, with George Hodgkinson, Mrs. Thurstan, Modesty, and a seedling. Mr. F. Morton was 3rd. The best three blooms in distinct varieties came also from Mr. A. R. Brown, he had Amy, Modesty, and Rosy Morn. 2nd, Mr. C. F. Thurstan, with John Dorington, Boiard, and Mrs. Thurstan.

In the class for single blooms of purple-laced Pinks, Mr. Brown was 1st and 3rd, with Modesty; and Mr. Campbell 4th and 5th, with the same; Mr. C. F. Thurstan took the 2nd prize, with Mrs. Thurstan. In the class for red-laced, Mr. Brown was 1st and 2nd, with Empress of India; and Mr. C. F. Thurstan 3rd, 4th, and 5th, with seedlings.

The premier purple-laced Pink was Amy, shown by Mr. A. R. Brown, a good-sized full flower, with finely-formed petals, handsomely laced; also awarded a First-class Certificate of Merit; and the premier red-laced Empress of India, also from Mr. Brown.

The best six bunches of miscellaneous Pinks, eight blooms forming a bunch, came from Mr. C. H. Herbert (Messrs. Thomson & Son), Birmingham, a very interesting collection, consisting of Daniel O'Rourke, Ascot, Lord Lyon, Derby Day, Annie (deep pink, dark centre), and Mrs. Thomson, a small flower, laced with rosy-red. Messrs. Thomson & Son also had, not for competition, a stand of twenty-four bunches of Pinks, similar in the main to the varieties already named.

From Mr. Robert Sydenham, Birmingham, came a stand of very handsome laced Pinks, consisting of The Rector, in superb condition; Ne Plus Ultra, Minerva, Henry Hooper, Empress of India, and the new white variety, Mrs. Lakin. First-class Certificates of Merit were awarded to The Rector and Mrs. Lakin. A Certificate of Merit was awarded to Mr. Charles Turner, Royal Nursery, Slough, for a stand of blooms of The Rector, Lorina, Lustre, and Memnon, and unnamed seedlings, twenty-four blooms in all.

EALING HORTICULTURAL.

FAVoured by fine weather, and held in the beautiful grounds of Hanger Hill House, Ealing, by kind permission of E. M. Nelson, Esq., J.P., the twenty-seventh annual exhibition, held on 15th inst., was a decided success—horticulturally and financially—the arrangements reflecting much credit on the Hon. Secretaries, Messrs. Cannon and Dawes.

The competition is now confined to the district—a good horticultural one. In the class for a group of plants arranged for effect, Mr. H. Denison, gr. to T. A. Gledstanes, Esq., Old Manor House, gained 1st honours for a light and graceful arrangement; 2nd, C. Long, gr. to E. P. Oakshott, Esq.; 3rd, Mr. H. Viner, gr. to R. Dawes, Esq.

In the smaller class for a group for effect, the most successful competitors were Mr. J. Beasley, gr. to A. Fraser, Esq., and Mr. T. Wiseman, gr. to F. Butler, Esq. Fine foliage plants were very successfully shown by Mr. Wingrove, gr. to F. Hicks, Esq., and Mr. H. Viner. For the best specimen stove or greenhouse plant in bloom, the most successful competitor was Mr. C. Long. The Coleus from the latter exhibitor were very fine specimens. Grand Gloxinias, in rich variety and colour, were contributed by Mr. A. Jones, gr. to E. Hyde, Esq., and Mr. J. Beasley.

In the class for Caladiums, the post of honour was secured by Mr. H. Viner with some well-developed examples; and Miss Lilian Hudson, Gunnersbury, was invincible in the class for three stands or vases of flowers for the dinner table; 2nd, Mr. W. Merridew, gr. to F. Garlach, Esq.; 3rd, Mr. E. Chadwick, gr. to E. M. Nelson, Esq., the latter exhibiting successfully with bouquets and other cut flowers. Mrs. H. B. Smith, Court Florist, Broadway, Ealing, sent some very fine bouquets, in her usual

tasteful style, not for competition. Mr. Godfrey, manager to Mr. William Whiteley, Hillingdon, contributed cut blooms of Orchids—Cattleyas in good variety, and other choice things—which were much admired.

Fruit was not shown extensively, probably on account of the season. For four dishes, the premier award was assigned to Mr. S. Wingrove, gr. to F. Hicks, Esq., who had good Peaches, Melons, and Nectarines; equal 2nd, Mr. C. Edwards, gr. to W. Owen, Esq.; and Mr. H. Viner.

Some very good examples of Black Hamburgh and Muscat of Alexandria Grapes (not for competition) were staged by Mr. Thompson, gr. to Messrs. W. and E. Wells, Hattonhurst, Hounslow.

For a collection of vegetables (prizes offered by Messrs. Sutton & Sons), the successful competitors were Mr. S. Wingrove, Mr. C. Edwards, and Mr. E. Chadwick.

Some capital examples of Tomatos Hackwood Park and Westbourne Grove Favourite were staged (not for competition) by Mr. T. Godfrey, manager to Mr. W. Whiteley. The cottagers made a good and extensive display of vegetables, &c.

Some very beautiful and tasteful groups of plants (not for competition) adding much to the beauty of the show, were contributed by Mr. G. Reynolds, The Gardens, Gunnersbury Park; Messrs. Fromow & Sons, Chiswick; Messrs. C. Lee & Son, Hammer-smith, the latter showing, in addition, a fine selection of cut Roses and hardy herbaceous flowers; Mr. G. Weeden, St. John's Nursery, Ealing; and Mr. Holden, Park Road, Acton.

HIGHGATE HORTICULTURAL SOCIETY.

JULY 16.—One of the prettiest, brightest, and best-managed of the suburban horticultural societies, is that held at Highgate, on this occasion in a portion of the grounds of Holly Lodge, the residence of Baroness Burdett-Coutts. Two tents took the exhibits, plants being a leading feature in one, and cut flowers and fruits in the other. A number of special prizes, given by leading supporters of the society, served to bring out interesting features; then the President, Mr. W. Burdett-Coutts, M.P., gave some for a group of flowering plants, which formed a good feature along the sides of the plant tent. Mr. J. Brooks, gr. to W. Reynolds, Esq., Highgate, was 1st, having a free arrangement—Fuchsias, Liliums (auratum and speciosum), Trachelium cœruleum and its white form; Hydrangea paniculata, Francos, Petunias, &c. Mr. A. Eason, gr. to B. Noakes, Esq., Highgate, was 2nd. The President offered prizes also for a group of miscellaneous plants—six pots of Mignonette, a stand of flowers for the table, pots of Musk, model garden, &c., some of which were competed for by cottagers and amateurs, who contributed some capital produce. Baroness Burdett-Coutts offered special prizes for a collection of hardy cut flowers, which was won by Mr. T. L. Turk, gr. to T. Boney, Esq., Highgate, who staged forty-eight bunches—a very good lot indeed. Mr. C. J. Wilkins, gr. to W. Smith, Esq., Muswell Hill, was 2nd; also, for a collection of hardy fruits, Mr. A. Page, gr. to A. Taylor, Esq., The Priory, New Southgate, who had sixteen dishes, comprising Cherries, Strawberries, Raspberries, Currants, &c. Mr. C. Shepherd, gr. to J. S. Duval, Esq., South Grove House, was 2nd, with the same number of dishes; also for a collection of wild flowers.

Mr. A. J. Reynolds' special prizes for twelve tuberous-rooted Begonias brought some well-grown and flowered plants from Mr. C. Payne, gr. to C. J. Whittingham, Esq., Shepperd's Hill; Mr. G. Quelch took the 2nd prize. Mr. H. R. Williams offered prizes for a collection of hardy fruits, which also brought a good competition for such a late season; the 1st prize was won by C. Halsey, a cottager. Mr. F. Reckitt's special prize for six flowering plants brought a good competition; as also did his prizes for a collection of miscellaneous fruit. Mrs. Stedall's leading special prize for a group of plants was won by Mr. J. Brittain, gr. to C. J. Reckitt, Esq., Caen Wood Towers; Mr. Eason was 2nd. Mr. W. Scrymgeour's prizes for plants for table decoration, brought several competitors, and also for Gloxinias; some excellently grown and flowered plants were staged. Mr. W. Reynolds' special prizes for six stove and greenhouse plants brought a very good lot indeed from Mr. H. Eason, consisting of Eucharis amazonica, Gloriosa superba, Allamanda Hendersoni, &c. Mr. B. Noake's special prizes for six fine foliaged plants, brought a capital lot from Mr. Brittain, two

well-coloured Crotons, and two Dracœnas, being the leading subjects; and the special *Gardeners' Magazine* medal was awarded to this collection; Mr. H. Eason took the 2nd prize.

One novel feature appeared, through the special prizes offered by Mr. H. Regnart for twelve plants of Tuberous-rooted Begonias and twelve of Gloxinias. These, arranged on tables in four lines of six each, the Begonias at back and the Gloxinias in front, had an excellent effect. Mr. C. Payne was 1st, having the strongest Begonias and the weakest Gloxinias; Mr. H. Eason was 2nd, having very good Gloxinias, but a little weak in Begonias.

Major Walker's special prizes for six Coleus brought some good-sized pyramidal-trained plants, but rather small in foliage, from Mr. J. Brittain; Mr. Eason was 2nd, with smaller bush-shaped plants, of bolder growth. Mr. Wilkinson offered prizes for six plants in flower, as also did Mr. T. Boney, and brought well-grown and flowered subjects.

Mr. Eason had the best four Orchids, having Cattleya Gaskelliana, Cymbidium Lowii, Miltonia vexillaria, and Oncidium papilio; Mr. J. Brooks was 2nd, with three Cattleyas and Cypripedium Lawrenceanum.

Fuchsias were a good feature for the London district; Caladiums small, but well grown.

Exotic Ferns, in sixes, good. Petunias very good. The best specimen plant in flower was Clerodendron Balfourianum, from Mr. Eason; Mr. Brooks coming 2nd, with Allamanda. Fine plants of Latania borbonica and Seaforthia elegans divided the honours as foliaged plants.

Roses were shown in twelve varieties, three trusses of each, some very good flowers being shown by an exhibitor whose name did not transpire. Mr. S. Simpson's special prize for twelve varieties was taken by Mr. J. Bateman, Archway Road. The best twenty-four bunches of cut-flowers came from Mr. H. G. Russell, gr. to H. Mansfield, Esq., Highgate. Mr. H. Elcock had the best twelve bunches of tuberous-rooted Begonias arranged for effect.

The better class of fruit, such as Grapes, &c., was poorly represented. The best two dishes of Strawberries were Sir C. Napier and President, from Mr. H. G. Russell.

Vegetables were numerous, and on the whole, very good. Mr. C. Gregory had the best three dishes of Peas—Telegraph, Duke of Albany, and Telephone.

The 1st prize for an arrangement of three pieces for the dinner-table went to the Secretary, Mr. D. B. Crane, for a very artistic design in Iceland Poppies, Ferns, and Grasses, that was greatly admired.

WOODFORD HORTICULTURAL EXHIBITION.

THE nineteenth annual exhibition of the Woodford Horticultural Society was held on Thursday, July 16, in the pretty grounds of Mrs. Spicer, "Harts," Woodford Green. The entries were more numerous than last year, and the exhibits were staged in two marquees, one devoted to cut flowers and table decorations, the other to specimen plants, fruit and vegetables. There was a large attendance of visitors.

The fruit shown was fairly good. There were sixteen entries in the Grape classes. Strawberries were not well represented. Currants were very fine. Vegetables were very good, and some first-class Tomatos and Cucumbers were shown. As usual, the stove and greenhouse plants and Ferns were deserving of great merit, and were a leading feature. In the cut-flower department, the table decorations and bouquets were very pretty. Messrs. W. Paul & Son and Mr. W. Rumsey, of Waltham Cross, contributed a magnificent display of Roses, the latter having a box of a new Noisette named Nois l'Idéale, worthy of special notice. Messrs. Paul & Son, of Cheshunt, exhibited hardy herbaceous cut-blooms, and several baskets of Strawberries containing splendid specimens of fruit, amongst which newer kinds worthy of note were Noble, Latest of All, Auguste Nicaise, and La Grosse Sucrée.

ROYAL WESTERN HORTICULTURAL.

JULY 21.—After a lapse of seven years, this society has this year been re-started under entirely new management, and a schedule was issued consisting of about 172 classes, and a liberal response was made in the shape of subscriptions. A great feature, and one which helped the Society much, was the opening of the exhibition by the Duke and Duchess of Edinburgh, who afterwards inspected the various exhibits. Mr. Sandford, Junr., of the firm of Curtis, Sandford

& Co., presented the Duchess with a handsome bouquet made of Duke of Edinburgh Roses.

The nurserymen of the neighbourhood came out well, and did much to make the exhibition a success.

Messrs. Veitch & Sons, Royal Nurseries, Exeter, showed a group, about 40 feet by 7 feet, the centre of which was occupied by various Bamboos, Palms, and Japanese Maples, relieved by *Lilium auratum*, *L. Brownei*, *L. Harrissi*, &c. The group included a group of fine Carnations of the variety *La Grande*, *Lady Middleton*, *Rose Malmaison*, *Germania*, &c., with Carnations, as cut flowers, in the front, consisting of many new and choice varieties. Other flowers noticed were pans of *Drosera capensis*, *Dionaea Muscipula* and *Sarracenia chelsoni* and *exoniensis*, which were much admired; a handsome plant of *Blandfordiana nobilis*, boxes of *Roses*, *Asparagus scandens reflexus*, and a fine flowering spike of *Morina longifolia*. Very fine plants of *Gloxinias* were a feature of the group, also tuberous *Begonias*, in great variety, and *Orchids* in variety.

Mr. Smale, nurseryman, Torquay, staged a large group, principally of cut flowers, of hardy perennials, *Roses* in variety, *Dahlias*, zonal and Ivy-leaved *Pelargoniums*, which were backed up by *Palms*, *Crotons*, *Ferns*, *Caladiums*, *Fuchsias*, *Eulalias*, &c., making a very attractive whole. Messrs. Mill & Tweedie, Truro, exhibited a large collection of cut flowers of Pearson's new single and double-flowered Ivy-leaved *Pelargoniums*, *Roses* in variety, *Carnations*, hardy perennials, and a variety of *Shirley Poppies*, &c. Messrs. Curtis, Sandford & Co., Torquay, staged a magnificent lot of *Roses*, and especially even in size, and in boxes, of *Duke of Edinburgh*, *Merveille de Lyon*, *Baronesse de Rothschild* and *La France*; good blooms of *H.P.'s* were observed in *Marie Baumann*, *Etienne Levet*, *Charles Lefebvre*, *A. Colomb*, *Ulrich Brunner*, *Prince Arthur*, *Duchess de Moroy*, and *Victor Verdier*. *Cactus Dahlias* in variety were likewise shown by them. Messrs. Smith & Sons, St. Austell, staged a grand collection of cut blooms of double-flowered *Tuberous Begonias* in every shade of colour, the salmon-coloured *Henry Brown* being especially good. Mr. J. R. Williams, Compton Nurseries, Plymouth, staged a large collection of decorative plants in great variety. Mr. Chalice, nurseryman, Plympton, staged a beautiful collection of well-grown *Palms*, *Fuchsias*, zonal *Pelargoniums*, *Begonias*, *Orchids*, *Hydrangeas*, *Petunias*, *Anthuriums*, &c., very effectively arranged. Messrs. Hendre & Sons, Plymouth, put up a fine collection of plants, including many fine *Petunias*, as well as fine assortment of cut blooms of their handsome single and double fringed *Petunias*, *Carnations*, &c.

Groups of flowering and foliaged plants, not exceeding thirty plants, 1st, Mr. Chalice, with a group, which consisted of *Lilium longiflorum* *Harrisi*, *Carnations*, *Palms*, *Dracaenas*, *Nepenthes*, *Caladiums*, &c.; 2nd, Mr. Truscott. Mr. F. Clatworthy, gr. to F. Bradshaw, Esq., was 1st for six *Coxcombs*; and Mr. J. Pengelly, gr. to W. Square, Esq., was 2nd. Mr. Chalice was 1st for six plants for dinner-table decorations, and Mr. J. Pengelly was 2nd.

Fruit.—Mr. W. A. Cox was 1st for white *Grapes* and Mr. Truscott for black ones. Mr. Cox was 1st for twelve *Peaches*, showing *Corytoni*, a variety raised at Powderham Castle—some very fine well-coloured fruits; 2nd, Mr. R. Pond, with excellent fruits. For twelve *Nectarines*, Mr. T. Marsh, gr. to Sir F. Freake, Bart., was 1st, for *Lord Napier*—very fine fruits; 2nd, Mr. Cox. Mr. Marsh won with *Melon Hero* of Lockinge.

Miscellaneous.—The best dinner-table decoration was that of Miss Scaife, with Mr. Cole as 2nd. Cut flowers were shown in excellent taste by Mr. Pound; *Carnations* by Rev. D. Jenkins, who also took honours for twelve varieties of *Roses*; Mr. Cox being 2nd, who was also 1st for six *Orchids*.

Vegetables were shown in abundance, and were of good quality generally. For twelve dishes, Mr. F. Catworthy was 1st, with *Walcheren Cauliflower*, *Moore's Cream Marrow*, *Lettuce Veitch Perfect Gem*, *Duchess Peas*, *Telegraph Cucumber*, *Bunyard's Extra Long Pod Peas*, *Tomato Glenhurst Favourite*, *Veitch's Purple Shallot*, *Nonpareil Cabbage*, *Wright's Gem White Celery*, and *Devill's Extra Scarlet Horn Carrot*; 2nd, Mr. W. Jenkins.

Cottagers' Section.—Some excellent exhibits were shown in these classes, and the competition was severe.

PRESCOT HORTICULTURAL.

FAVoured with fine weather on the 16th inst. the seventh annual exhibition in connection with the Prescott and District Horticultural Society was

eminently successful. The show was held in a field at Park Side, lent for the occasion by Mr. James Whittaker, sen. The principal exhibits numbered over 700, an increase of 100. The prizes offered amounted to £120 in value, against £90 last year. The principal prize-winners were Mr. Edward Banner, Roby (gr., Mr. R. Pinnington); Mrs. Baxter, Rainhill (gr., Mr. E. Blayhen); Mr. E. C. Levington, Huyton (gr., Mr. H. McFall); Alderman C. J. Bishop, St. Helens (gr., Mr. E. Gray); Mr. G. G. Musson (Prescot); Mr. T. Harding, Roby (gr., Mr. William Learman); Colonel R. Pilkington, Rainford (gr., Mr. George Middleton); Mr. J. E. Brown, Huyton (gr., Mr. Joseph Watkin); Mrs. H. S. Hall, St. Helens (gr., Mr. John Price); Mr. A. L. Jones, Huyton (gr., Mr. John Bounds); Mr. John Parrington, Roby (gr., Mr. Thomas Heaton); Mr. John Beesley (Prescot), Mr. John Pownall (Prescot), Mr. W. H. Evans, Huyton (gr., Mr. James Mather), Mr. Charles Lockett (Prescot), Mr. John Lyon (Rainhill), Mr. John Pendleton (Prescot), and Mr. N. Mercer. Special prizes for the best *Roses* in the collection were won by Mr. John Beesley (open class) and Mr. N. Mercer (cottagers' class).

MANCHESTER ROSE SHOW.

JULY 18.—The Rose show held in the Royal Botanic Gardens brought out some of the best exhibitors in the trade and amongst amateurs. The season being backward in the north, the southern growers took the lead, and not a single northern exhibitor was able to take a 1st place. The *Roses* were a little over-blown, owing to the heat and the long distances some of them had travelled. The setting of good blooms enhances the appearance of boxes of cut flowers, which is more or less remembered by exhibitors, and the *Tree Ferns* and *Palms* and ground-work of lesser plants in the show area helped in a capital manner.

Taking the trade first, undoubtedly Mr. F. Cant, of Colchester, carried off the three best prizes. The trebles in thirty-six and in twenty-four varieties, were superb; and although the English Fruit and Rose Co., Hereford, beat him with "seventy-two distinct singles," they had not the quality of blooms, and generally speaking, they carried the day by their blooms being in a better condition than his.

The English Fruit and Rose Company had some excellent blooms, although not quite so large, full, and well staged. Mr. W. H. Merryweather showed an excellent assortment, and so did Paul & Sons, Dicksons of Chester, and Mr. George Prince, Oxford; the latter grower had a beautiful lot of *Tea Roses*, comprising the *Hon. Edith Giffard*, *Souvenir d'Elise*, *Innocente Pirola*, a fine large-petalled white, and several others. Mr. Cant had the best *Teas* and *Noisettes*. Most of the exhibitors named above had capital stands of twelve singles of one variety, of which *Her Majesty*, *Merveille de Lyon*, and *Mrs. J. Laing*, were the finer.

Messrs. Perkins & Sons, Coventry, had a creditable lot of *Roses*, and although he was defeated by Mr. Mason, a local exhibitor, in bouquets of *Roses*, they showed with style and spirit. Dickson & Robinson, and Dickson, Brown & Tait, of Manchester, had a great variety of cut blooms of various *Roses*.

The amateurs, although not so weighty, had on the whole some very fine flowers. They did not differ in sorts essentially from those named in the above classes. The 1st prize for thirty-six singles was awarded to Rev. J. H. Pemberton, Essex; Mr. S. F. Budd, Mr. J. B. Lindsett, Hitchin, and Rev. Foster Melliar following in the order named. Among the best *Roses* were *Marie Finger*, *Gabrielle Luizete*, *Her Majesty*, *Madame Lambert*, *Annie Rivers*, *Star of Waltham*, and *Abel Carriere*. Mr. Pemberton also took 1st position in trebles. Mr. Budd and Mr. Foster Melliar also had fine stands.

In *Tea Roses*, Rev. W. Burnside took leading position, Mr. S. F. Budd also showing well. Among the novelties in colour was *Marie Van Houtte*, with fine shell petal of a light colour dashed with yoke of egg colour at the base.

Miscellaneous.—Messrs. Clibran & Son, Altrincham, had a nice assortment of herbaceous and alpine flowers. Mr. M. Campbell, High Blantyre, sent a very creditable display of fancy *Pansies* in fine sorts, only the hot weather had curled up the blooms. Messrs. Dobbie & Co., Rothesay, N.B., sent also a fine collection, chiefly of *Violas*, and some of the best strains of *Sweet Williams* we have seen for years. A rather pretty novelty was sent by Mr. John Walkden, Sale, in the shape of a *Heliotrope-scented Pink* bearing

the name of *Souvenir de Sale*. It will make a pretty border flower, being of pale pink, with white centre, rather full, and of the odour of the *Heliotrope*. There were several other good exhibits.

One of the unique exhibits, which not only deserved the Gold Medal of the society but the Lindley Medal for superlative cultivation, was the collection of *Disa grandiflora* sent from Chatsworth. The plants numbered sixty-nine, and we venture to say, without fear of contradiction, that no such group of plants has been exhibited before. The total number of racemes was one hundred and eighty-eight, each with four flowers.

The Pink Show.—This was a comparatively limited exhibition. If the weather was cold for the unfolding of the *Roses*, so it was even in a more marked degree for the *Pinks*. Nothing could be finer than the 1st prize group, they were large and finely coloured. Among the best flowers were *Amy*, *Minerva*, *Ethel*, *Maud*, *Modestie*, *Boiard* (a grand flower), *Mrs. Barlow*, *Mr. Barlow*, and a lot of seedlings which, doubtless, will have their respective pedigrees, but they did not appear on the cards. The two that were singled out on this occasion were a deep red-blotched flower named *Bertha*, and a light red-blotched one named *Jas. Percival*. Even judges and the disappointed competitors should not forget being "hailed over the coals" about not giving a seedling a certificate, and that "a chief's among them takin notes." On being asked for a certificate, the judge said, "It will be a flower some day, it wants clipping."

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 12° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS. Above (+) or below (-) the Mean for the week ending July 18.	TEMPERATURE.		RAINFALL.		BRIGHT SUN.	
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths.	Ins.
1 2 + 106 0	+ 131 + 79 2	- 119 23	30	31		
2 2 + 118 0	- 37 + 101 2	+ 83	11.2	24	32	
3 1 + 120 0	- 89 + 95 0	aver	84	9.2	21	30
4 0 aver 132 0	- 74 + 128 3	- 90	10.1	30	33	
5 1 + 131 0	- 52 + 116 5	- 86	12.1	43	32	
6 0 aver 129 0	- 72 + 149 5	- 81	11.4	47	37	
7 2 + 121 0	+ 75 + 46 5	- 91	15.	11	34	
8 2 + 129 0	+ 19 + 35 7	- 80	11.5	67	32	
9 1 + 124 0	- 43 + 118 4	- 86	15.0	61	39	
10 2 + 124 0	+ 26 + 28 3	- 102	12.5	50	33	
11 1 + 125 0	+ 25 + 31 1	- 92	14.7	47	36	
12 1 + 137 0	- 3 + 40 3	- 89	12.8	61	48	

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. *Principal Grazing, &c., Districts*—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 18, is furnished from the Meteorological Office:—

"The weather remained fair and dry generally until towards the end of the week, when it became showery and unsettled, with local thunderstorms.

"The temperature has just equalled the mean in 'England, E.' and 'S.' but in all other districts it has been 1° or 2° above. The highest of the maxima were registered on the 17th, when the thermometer rose to between 79° and 82° over the greater part of England, and to between 73° and 78° in the western

and northern parts of the kingdom. The lowest of the minima, which were recorded on rather irregular dates, ranged from 40° in 'Scotland, N.,' and 41° in the 'Midland Counties' to 47° in 'England, N.W.,' and the 'Channel Islands.'

"The rainfall has been a little more than the mean in 'Scotland, E.,' and equal to it in 'England, N.E.;" in nearly all other districts, however, a decided deficit is shown.

"Bright sunshine has exceeded the mean in all except the eastern and the north-eastern parts of the kingdom. The percentage of the possible amount of duration ranged from 61 in 'England, S.W.,' and the 'Channel Islands,' and from 59° in 'Ireland, N.,' to 21° in 'England, N.E.'"

MARKETS.

COVENT GARDEN, July 23.

A brisk trade doing in Currants and Raspberries, with supplies good. Cherries and other goods, slow trade. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table with columns s.d., s.d., s.d., s.d. listing prices for Apples, Lemons, Melons, Peaches, Pine-apples, Strawberries, etc.

NOTE.—Bananas and Apricots differ in price so greatly, according to quality and quantity on sale, that no trustworthy quotations can be afforded.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table with columns s.d., s.d., s.d., s.d. listing prices for Arum Lilies, Asters, Carnations, etc.

ORCHID-BLOOM IN VARIETY.

POTATOS.—Home-grown from all the districts surrounding London, are coming to hand in fairly heavy quantities. Prices ruling from 5s. to 8s. per cwt. J. B. Thomas.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table with columns s.d., s.d., s.d., s.d. listing prices for Artichokes, Beans, Beet, Carrots, Cauliflowers, etc.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table with columns s.d., s.d., s.d., s.d. listing prices for Aralia Sieboldii, Aspidistra, Bedding plants, Bouvardia, etc.

SEEDS.

LONDON, July 22.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., write that business in seeds, as might be expected, is just now at a standstill.

FRUIT AND VEGETABLES.

SPITALFIELDS: July 21.—Quotations:—Cabbages, 2s. to 3s. per tally; Cauliflowers, 1s. 6d. to 2s. 6d. per dozen; Peas, 1s. 6d. to 2s. 6d. per bushel; do., 2s. 3d. to 3s. 6l. per sack; Sea-kale, 1s. to 1s. 6d. per punnet; Vegetable Marrows, 3s. to 4s. per dozen; Turnips, 2s. to 2s. 6d. per dozen bunches; Carrots, 1s. 6d. to 2s. do.; Parsley, 1s. 6d. to 2s. do.; frame Cucumbers, 1s. 9d. to 2s. 6d. per dozen; Horseradish, 12s. to 13s. per dozen bundles; Mint, 1s. 6d. to 2s. 6d.; spring Onions, 2s. 6d. to 5s. per dozen bunches; Cos Lettuce, 4l. to 8l. per score; Cabbage do., 4d. to 6d. per dozen; Endive, 1s. to 1s. 6d. do.; Gooseberries, 2s. 6d. to 4s. per half-sieve; black Currants, 7s. do.; white do., 5s. to 6s. do.; red do., 4s. to 5s. do.; black Cherries, 4s. 6d. to 6s. do.; white do., 7s. to 10s. do.; Raspberries, 30s. to 32s. per cwt.; Strawberries, 2s. to 3s. per peck.

STRATFORD: July 22.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 3s. 6d. per tally; Carrots, household, 1s. 6d. to 2s. 6l. per dozen bunches; cattle-feeding, 1s. to 1s. 3d. do.; Onions, Egyptians, 100s. to 110s. per ton; Green Peas, 1s. 6d. to 2s. 6d. per sieve; do., 2s. 3d. to 5s. per bag; black Currants, 6s. 6d. to 7s. per half-sieve; red do., 4s. to 5s. do.; white do., 4s. to 5s. 6d. do.; Gooseberries, 2s. 6d. to 4s. do.; do., 5s. to 7s. per flat; Strawberries, 2s. to 3s. per peck.

POTATOS.

BOROUGH: July 21.—Quotations:—Kent and Essex Hebrons, £7. to £5 10s.; Early Rose, £4 10s. to £5; kidneys, £3 to £7. Old; Miganms, £3 to £3 10s.; Jersey new, £7 to £7 10s.; Cherbourg flukes, £3; and rounds, £5 per ton.

STRATFORD: July 22.—Quotations:—Myatt's kidneys, 120s. to 140s.; Hebrons, 90s. to 110s.; Jersey flukes, 170s. to 180s.; foreign, Cherbourg, 140s. to 150s. per ton.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

Would any correspondent kindly inform "A. W." what proportion of carbonic acid to water should be used on the roots of Vines.

NOTICES TO CORRESPONDENTS.

CORRECTION.—Second Innings of the Gardeners' v. Scedsmen's Cricket Match in last issue, for "E. Cannell," read "C. C. Hurst."

CROP OF BLACK CURRANTS: A. W. The amount of fruit to be obtained would vary with circumstances, but a good crop on bushes of the size given would be about 1 gallon per bush. This season Black Currants suffered much from spring frosts.

GRAPES: J. K. The shanking is due to so many causes, that we cannot say which of them has caused it in your case. The commoner cause is a bad state of the roots, brought about by badly drained close pasty soil, this causing the loss of the finer roots—look to the border in early autumn. For red-spider you must sponge the leaves with soapy water. It is a tedious job, but effectual.

INSECTS: W. M. (Oakwood). The Rose-shoots are attacked by a small black-and-white saw-fly—Teluthredo cincta, of Linnaeus = Emphytus cinctus of modern writers (see figure and description in the Gardeners' Chronicle, 1856, p. 421), the larvæ of which burrow into the young shoots, eating the central pith, and making cylindrical gangways. Pick off and burn all the attacked shoots without delay. I. O. W.—J. P. The insect which has bored into your Apple tree is the caterpillar of a moth, Zenzera æxuli.

LEAF FROM CUCUMBER: J. B. We have frequently seen similar outgrowths.

NAME OF APPLE: W. J. F. We are unable to name the Apple sent.

NAMES OF PLANTS: I. O. W. Astrantia major. H. J. Ross, Davos Platz. Orchis ustula, O. militaris, Gymnadenia conopsea, R. Br.; Nigritella angustifolia, Rich.; N. suaveolens, a natural hybrid from the last two.—D. C. Crested Moss.—C. S. Ampelopsis. We cannot tell from the specimens sent.—J. R. W. 1, Acer palmatum; 2, Campanula—send better specimen; 3, Ginkgo adiantifolia (Maidenhair tree); 4, not recognised; 5, Ixora sp.; 6, Spiræa callosa; 7, Acer negundo variegatum.—Mrs. C. Lythrum hyssopifolium.—V. C. Galega officinalis, perfectly hardy. There is also a white variety.—R. H. 1, Alocasia hybrida;

2, Davallia (Leucostegia) immersa; 3, Dieffenbachia nobilis; 4, Nephrolepis tuberosa; 5, Nerium oleander flore-pleno, a good variety; 6, Begonia argentea. The numbers were all detached, consequently we can only guess at them.—W. D. H. Potentilla fruticosa.—J. M., Bath. Next week.—No name. 1c, Statice latifolia; 2c, Potentilla atro-sanguinea; 3c, Centaurea macrocephala; 4c, Telekia speciosissima; 5c, not recognised; 6c, Watsonia Meriana.—J. MeM. 1 and 2, species of Ornithogalum, which we cannot name; 3, Astrantia Biebersteinii, probably; 4, Erigeron speciosus; 5, Lysimachia thyriflora; 6, Mimulus cardinalis.—E. R. 1, (?); 2, Clarkia pulchella; 3, Malcolmia maritima; 4, Oxalis sp.; 5, Campanula sp.; 6, Cuphea platycentra. Specimens dried up when received.—A Constant Reader. 1, Blechnum occidentale; 2, Adiantum macrophyllum; 3, Polypodium appendiculatum; 4, Adiantum concinnum latum; 5, Pteris argyræa; 6, Asplenium Belangeri.—J. M. 1, Coronilla varia; 2, Anchlussa italica; 3, Sedum spurium; 4, Centaurea; 5, not recognised.

NURSERY LAND: A Young Nurseryman. Have nothing to do with it. Something much better suited for a nursery-ground may turn up. "Black loam" overlying blue clay does not seem to be very enticing.

PARSNIPS: George Thompson. We have sent off the Parsnips and insects to our referee, and will be able to give you a reply to your question next week.

PEAS: J. S. We have seen similar mossy outgrowths before. We suspect rather than know that they are caused by the irritation of a mite. There is no fungus.

PETUNIAS DYING-OFF: T. H., Devon. It is almost impossible to examine satisfactorily the Petunia foliage, on account of so much sand adhering, as to break all the cover glasses. I find nothing the matter with the roots, and no evidence of Peronospora. The dead tissue is full of mycelium, and on the dead leaves is plenty of Cladosporium, which is not the cause of the mischief, but comes after. I believe the true cause is a minute mould, coming on the spots of the leaves, and this belongs to the genus Ramularia, which is hitherto unknown. These moulds are so delicate that they do not bear carriage, and hence are so difficult to make out from rough material. Spotted and dead leaves should be sent flattened in folds of blotting paper, for further examination. This is an internal parasite, and nothing can save the plants. Every effort should be made to prevent it spreading. There are plenty of the spores about the dead leaves. M. C. Cooke.

SOCIETY: J. W. W. We know nothing about the society you mention, except that a similar application was made to us, which we disregarded.

TOMATO DISEASE: J. R. W. One of the fungus moulds affecting Tomatoes—we cannot tell which in the present state. It is too late to do anything now, otherwise you might have tried the copper solution.

VINES: Interested. The condition of your Vines is not unusual; the cause is not, however, so well understood. As you have observed, the berries are not set, and the silvery appearance they have is due to some constitutional weakness. There are some Vines at Chiswick similarly affected, one a golden Hambro is so every year.

VINES: Foreman. The roots are full of spawn mycelium—the cortex completely destroyed by it. Cannot say whether there is rotten wood or mycelium in the soil, or whence derived; but the cause of the mischief is the profuse spawn at the roots. Doubtless, all the surrounding soil will be pervaded by it, and no chance for the plants but by transfer to fresh clear soil, and then doubtful. M. C. Cooke.

CATALOGUES RECEIVED.

G. PHIPPEN, Reading, Berks—Bulbs and Roots.

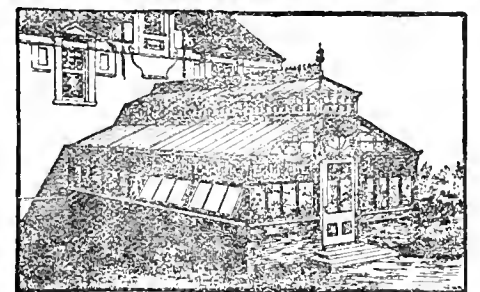
COMMUNICATIONS RECEIVED.—J. Maltby.—R. A. R.—V. C.—F. B.—E. C.—E. H.—C. S., Guernsey (many thanks, we quite concur, but there are so many other considerations, and we shall revert to the subject later on).—W. E. G.—H. W. W.—D. F.—H. V.—E. H. B.—J. S.—E. F., Florence.—W. C. & Sons.—R. A. R.—Yes.—R. G. S.—R. B.—J. B.—J. S.—C. A. M. C.—R. B., Christchurch, New Zealand.—W. Sutherland.—W. D.—Campanula.—W. N.—Head Gardener.—H. G.—G. B. C.—J. K. & Son.—W. A. Carpenter, N. Z.—J. W.—R. D.—P. W.—J. O'N.—G. M. Wood, Natal, many thanks.—Foreman, next week.

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The Gardens, Seacroft Heath, Hawkhurst, Kent, March 11, 1891.
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THE *Gardeners' Chronicle* was founded, in 1841, by the late Dr. Lindley, Sir Joseph Paxton, and others. It proved a great success from the first, having then few competitors. As the exigencies of the time have required, it has been trebled in size, so far as horticultural matters are concerned. Illustrations which at one time were few, and given only at intervals, are now numerous and regularly issued. The price has been reduced one-half, and though there are now many competitors in the field, the *Gardeners' Chronicle* is generally recognised as the leading authority in all matters relating to Gardening, Garden Botany, Forestry, and the sciences connected therewith. What others think of it may be judged from the following from among many unsolicited expressions of opinion:—

EXTRACTS FROM THE PRESS.

"THE *Gardeners' Chronicle* has faithfully held to its promises. It is still, to-day, the best gardening journal, being indispensable equally to the practical gardener and the man of science, because each finds in it something useful. We wish the journal still further success."—*Garten Flora, Berlin, January 15.*

"THE *Gardeners' Chronicle* celebrated, on Jan. 2, the fiftieth anniversary of its foundation. This is, in [English] garden literature, an unique event. . . . The publication is one of special excellence."—*Vossische Zeitung, Berlin, January 7.*

"THE *Gardeners' Chronicle*, one of the most justly renowned horticultural journals of the world, celebrates the fiftieth anniversary of its foundation. The career of this publication, which is an authority in scientific as well as in practical matters, has been most successful and interesting. . . . With such a past, there can be no doubt as to its future."—*Revue Horticole, Paris, January 16.*

"THE *Gardeners' Chronicle* is known wherever intelligence in horticulture is appreciated."—*Meehan's Monthly.*

"THE first issue of the *Gardeners' Chronicle* for the year is a jubilee number devoted largely to a commemoration of the fiftieth anniversary of that journal's first appearance. Founded by Dr. Lindley and Sir Joseph Paxton, its policy has always been directed by men of accurate knowledge and scientific temper. Its trusted correspondents have been among the foremost of skilled cultivators and recognized authorities in the sciences related to horticulture. During its life of half a century, its influence has tended to elevate and dignify the art of horticulture, not only in England, but throughout the world, and it was never more worthy to command respect than under its present management. Our venerable contemporary is to be congratulated on the possession of so honourable a history, whilst its future is bright with the promise of ever-increasing usefulness."—*Garden and Forest (New York), Jan. 21.*

"We wish to give ourselves the pleasure of recognizing an event in the career of a respected contemporary. . . . The *Gardeners' Chronicle* is the senior by only seven years of the *Journal of Horticulture*, and, to speak paradoxically, we may venture

to say, that both these journals are as young as ever, and disseminate, each in its own way, matter of interest to botanists and horticulturists throughout the world, where the science of botany is studied, and the art of gardening is practised by the community."—*Journal of Horticulture, February 5, 1891.*

"THE JUBILEE OF THE 'GARDENERS' CHRONICLE.'—On January 2, 1841, appeared the first number of a weekly paper which, thanks to the scientific research and practical knowledge of its editors, soon became, and has ever since remained, the principal horticultural medium in England.—*Illustration Horticole, Brussels, Jan. 1891.*

"One of the best conducted English horticultural papers, the *Gardeners' Chronicle*, celebrated the fiftieth year of its existence on January 2. This journal was called into existence by Dr. Lindley and Joseph Paxton. Two of the first and most industrious assistants were the recently-deceased landscape gardener Marnock in the practical part, and James Bateman, who published a series of interesting articles on epiphytal Orchids. Of other eminent writers, there are mentioned the names of Charles Darwin, Dean Herbert, Sir W. Hooker, who, in 1841, was appointed Director of the Royal Botanical Garden, Kew; Sir J. Hooker, Professor Daubeny, Dr. Royle, Henslow, MacIntosh, Curtis, Phillip Frost, Robert Thompson, Robert Fortune, and Berkley."—*Moller's Deutsche Gartner Zeitung, Erfurt, February 1, 1891.*

"For the past half a century, the *Gardeners' Chronicle* has been the leading horticultural and botanical newspaper in the United Kingdom. . . . With such a talented proprietary and staff of editors, it is not surprising that the paper was at once recognized, and took up a leading position as the first horticultural journal of the kingdom. Its success has been very great. . . . Very few of the first working printers on the paper are left to witness the prosperity of the venture, except the writer of these lines (the editor of the *Press News*). . . . The *Gardeners' Chronicle* is still recognized as the leading horticultural journal of the kingdom."—*Press News, January, 1891.*

"The *Gardeners' Chronicle* has just celebrated its jubilee, its first number having appeared January 12, 1841. The founders were Dr. Lindley and Sir

Joseph Paxton. It is to be congratulated upon its long and eminent list of contributors, and upon its constantly increasing usefulness. It is one of those gardening journals that have become a necessity, not only to the practical gardener, but to the professional botanist as well."—*The Botanical Gazette (American), February, 1891.*

"This important journal renders great service in acting as an intermediary between botanists and horticulturists, impressing on the one the true principles of classification and nomenclature, and on the other, the fact that the observation of living plants in the garden teaches many things which cannot be learnt, either in the herbarium or the laboratory, facts which the new generation is disposed to overlook."—*Alphonse de Candolle, Geneva.*

"Let me offer my best felicitation on the semi-centenary jubilee of your splendid *Chronicle*, which you have edited with so much talent, knowledge, and discrimination, for so long a while as the worthy successor of the great Lindley. Wishing the *Gardeners' Chronicle* also in future a splendid success under your able leadership, I remain, Ferd. von Mueller, Melbourne."

"You have brought the *Gardeners' Chronicle* into an admirable condition of prosperity and authority. Of all analogous publications, the *Chronicle*, with no possible reservation, takes the lead. It is more widely read than any of the horticultural journals, owing to its wider circulation. The matter is the most varied, and the illustrations the most correct and elegant. What I wish is, not the continuance and enhancement of your success, for that is certain, as the future will prove, but the continuance of that marvellous energy which has had such excellent results already."—*Maxime Cornu, Director of the Jardin des Plantes, Paris.*

"In 1841, Lindley and Sir Joseph Paxton enriched horticulture with this high-class periodical, in which science has always taken an equally important part with practical information. The issue for the 3rd of last January was devoted to the celebration of the anniversary. The *Gardeners' Chronicle* cannot fail to prosper under its present management, which is conducted with unusual ability and skill."—*Le Jardin, Paris, March 20, 1891.*

THE GARDENERS' CHRONICLE

("The Times of Horticulture").

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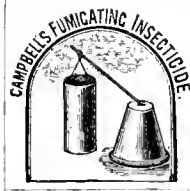
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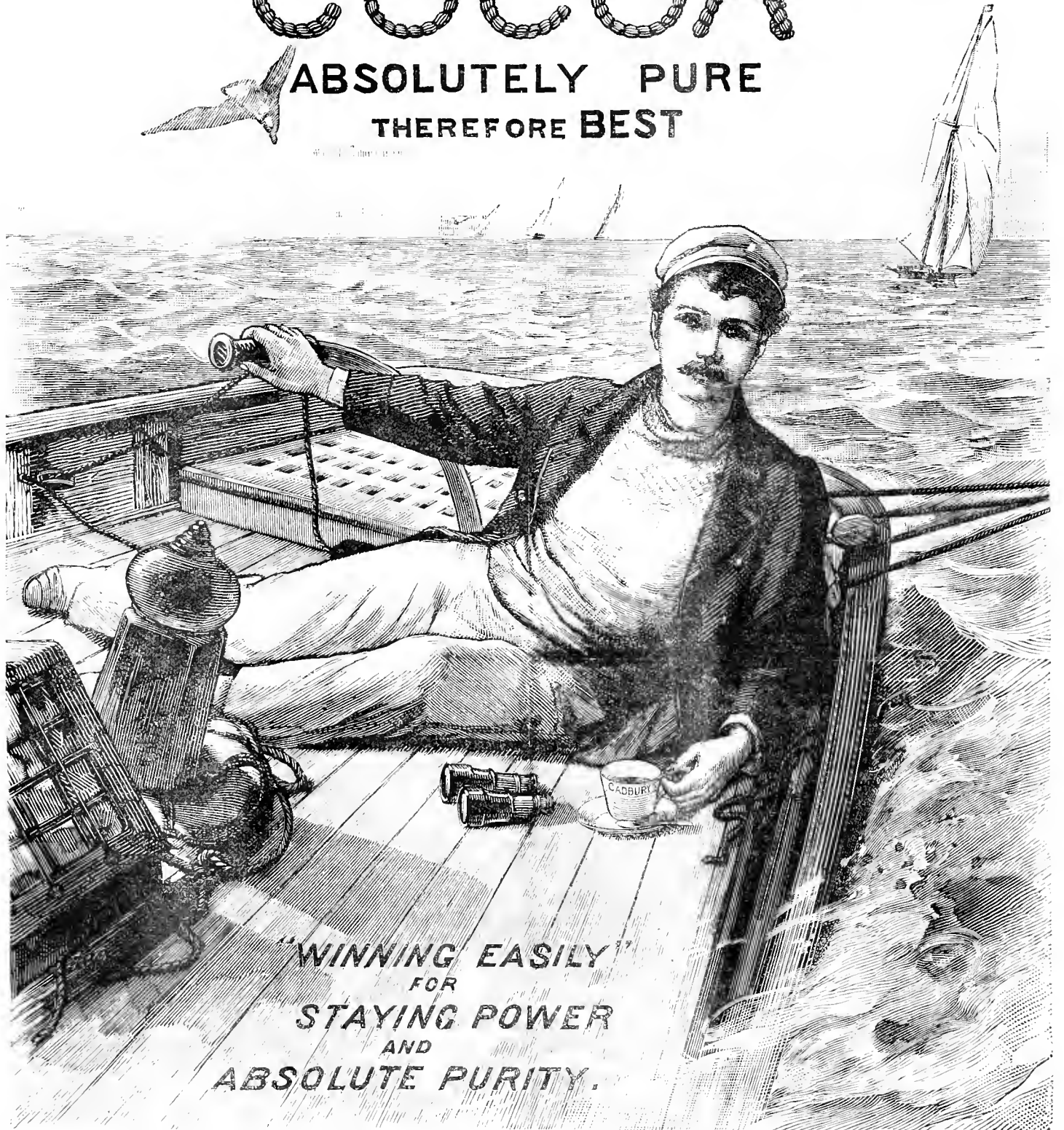
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The GARDENERS' CHRONICLE

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ANNUAL SHOW at Curtisfield, Maidenhead, on THURSDAY, August 13, 1891. Entries close August 6. Schedules and particulars from—

O. KING, Hon. Sec., Ray Park Cottage.

CLAY CROSS HORTICULTURAL SOCIETY.

The ANNUAL SHOW of the above will be held on TUESDAY, August 11, 1891. Entries close August 3. For Schedules apply to

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President: THE MAYOR OF CARDIFF (the Most Hon. The Marquess of Bute, K.T.).

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THREE HUNDRED POUNDS IN PRIZES.

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1891.

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Extra fine PANDANUS VEITCHII, in all Sizes.

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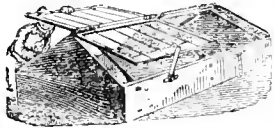
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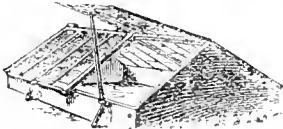
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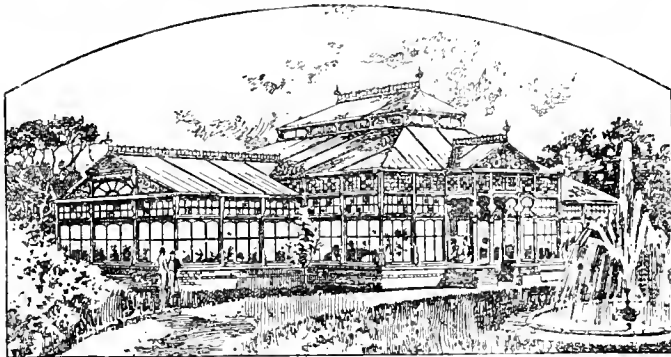
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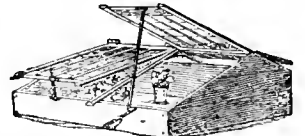
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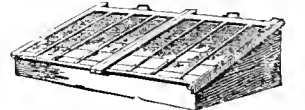
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Exceeds all others in general fertilising properties and staying powers.

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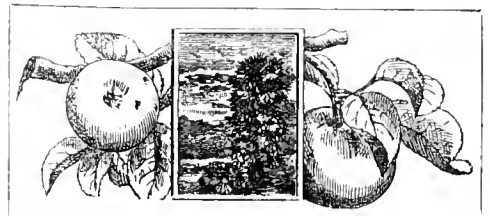
An effectual and speedy Eradicator of Scale, Thrip, Green Fly, Mealy Bug, Red Spider, American Blight, and all Parasites affecting plants, without injury to foliage. In jars, 1s. 6d. and 3s. each, and in tins, 5s. 6d., 15s. 6d., and 25s. each.

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As a Supplement TO THE GARDENERS' CHRONICLE FOR Next Week, August 8, Will be Published an Ink-Photograph of a Range of Houses Erected by Messrs. RICHLARDSON & CO., For C. FURNESS, Esq., M.P.



THE Gardeners' Chronicle.

SATURDAY, AUGUST 1, 1891.

BOWOOD PARK.

BOWOOD is always worth a visit, even when the gardener is holding his hand for a while, with a very reduced staff, as he is doing at present in the absence of the Marquis of Lansdowne, who is serving the country as Viceroy of India. I entered the park from Calne, having travelled by railway from Devizes and Chippenham on one of the few delightful days of a cold and showery May. The house, park, gardens, and pinetum at this famous seat are all very handsome and first-rate and the country around is historically interesting and the landscape beautiful. The house is finely placed, sheltered by woods, yet not encumbered. A stream runs through the lower part of the park, and widens into a lake of 50 acres, long, but not canal-like, widest before the house, and winding up the valley—a vista of water with wooded shores and varying promontories. It is a very pleasing scene from the windows of the stately mansion, and in spite of the water, it offers no suggestion of fogs, damps, and rheumatic pains. If Dr. Priestley, in residence here a hundred years ago as librarian and friend of the Earl of Shelburne, or if Moore, the poet of whom Byron said, "Tommy dearly loves a lord," a frequent visitor here fifty years ago, had walked down towards the head of the lake, as no doubt they did sometimes, and had passed the spot where the overflow escapes through some ornamental rockwork to the meadows below, they might have reached on the right a promontory of the lake, where a summer-house of classic architecture stands, like the portico of a Greek temple and from this spot they would see that the great house is placed well above the water on the banks of the lake, and considerably removed from it.

Owing to the high site, one can see from the terraces beneath the windows—from the midst of the seclusion of the wooded park—the fair country beyond; luxuriant woods and farms in the foreground, the boundary of the chalk hills beyond, with the smooth and rounded surface of the Cherhill Downs, having the Lansdowne column at the top, and a white horse cut in the slope. The chief entrance to the park is from Derry Hill, a little village of ornamental houses

THE TWO BEST CABBAGES

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Mr. A. J. LONG, writing on June 1, says:—"I am very pleased with your 'First and Best' Cabbage, which I sowed last summer for the first time. We have been cutting for the past three weeks, and I cannot hear of anyone else cutting so early. The plants withstood the severe winter remarkably well."

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THE EARLIEST AND BEST.



6d. and 1s. per packet, 1s. 6d. per ounce.
From Mr. R. LYE, *The Gardens, Symonton Court, July 23, 1891.*—"I have grown a good many varieties of Cabbage, but I consider Webbs' Emperor the best of them all. I planted out a bed of 850 plants last autumn, and not one went to seed, but all turned out splendidly, and were admired by all who saw them."

	Per oz.	per pkt.
EARLY NONPAREIL CABBAGE	8d.	6d.
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WEBBS' RED GLOBE TRIPOLI	6d.	1s. 6d.
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clustered partly round a small green in front of the entrance, where an arched gateway flanked by a tower; some handsome iron gates, and the sculptured arms of the family on the wall above the gates, intimate the neighbourhood of a lordly residence. A drive of 2 miles through the deer park brings us to the house, a three-storeyed mansion in the Italian style, with terraced flower gardens on the south and east fronts. It is gratifying to observe that the taste of the owners has not been satisfied with the architectural beauty of their dwelling alone, since they have covered the walls with creepers—Roses, Honeysuckles, Wistaria, and Virginia Creeper. On the west side, a long wing or extension—imitated from the Emperor Diocletian's palace at Spalato—includes the library and an orangery, having a narrow border under the wall filled with various alpine, none of which were brighter in May than the rose-coloured Thrift, and that very handsome dwarf Phlox setacea atro-purpurea. Oranges and Bays in tubs are placed upon the terraces in summer. Among the appropriate shrubs which cover the walls of the terraces, I noticed Banksian Roses, Kerria japonica, Clematis montana, Magnolia conspicua, two species of Pyrus japonica—albo and atro-purpurea; Garrya elliptica, Forsythia viridissima, and that handsome white-blossomed evergreen, Choisya ternata.

Between the park and the house there are several series of terraces, each supported by a wall, and each ornamented by handsome stone balustrades, and planted in the manner just described. There are gravel walks and geometric flower borders, filled with such plants in their season as may suit a garden with palatial surroundings. Everything at Bowood is spacious and grand. A house as comfortable as it is ornamental, built by a statesman and man of letters, filled with works of art, and famous as the resort of distinguished men, stands amid terraced gardens in a beautiful English park. The Earl of Shelburne selected his site well.

The pleasure grounds are entered immediately behind the house, and include 60 acres, devoted to ornamental trees and shrubs, and a pinetum which seems to have been planted forty or fifty years ago with choice specimens. At the entrance to this part of the grounds the Cedars of Lebanon are very fine. Then comes a specimen of Abies Douglasii, still 100 feet high, though wrecked by wind unfortunately three years since. A number of large and spreading evergreen Oaks help to shelter the pinetum, which is, in fact, so well protected that within its boundary one hears the wind in the surrounding tree tops without feeling its full force. I am afraid that the public who are freely admitted here may sometimes abuse their privilege by transposing the labels, since the first tree we came to was named Abies elegans, and is 50 feet high, and full of foliage, whereas A. excelsa elegans is described in Veitch's *Manual of the Coniferae* as a dense shrub, growing only from 5 to 7 feet high. Abies grandis flourishes here on the light soil, which suits most of the conifers. P. resinosa, however, the red Pine of Canada, is not quite happy here. There are many specimens of Sequoia sempervirens, with fine drooping foliage, which have already reached 70 feet in height. As this giant of the Pacific coast, the Californian Redwood, takes the second place in size among the coniferous trees of its native country, reaching 300 feet, it has still much to do before attaining at Bowood its typical height. Cryptomeria japonica is grateful for its sheltered situation and looks well.

Two specimens of Abies cephalonica stand side by side, and were putting forth their young shoots in the third week of a late and treacherous May, and seem hardy notwithstanding their Mediterranean origin. Cedrus atlantica is 60 feet high here, and wears its characteristic foliage, tinged with blue. This tree forms the prevalent arborescent foliage of Mount Atlas, and as it came to England after 1841, it must have reached Bowood early, probably in the time of the third Marquis, who was a patron of horticulture, and enlarged and embellished the ornamental grounds. The Chinese Arbor-vitæ, Biota orientalis pendula, is one of the curiosities here, and among its neighbours are Junipers and Cypresses in great variety.

The kitchen garden covers 4 acres, which are divided into four compartments by walls, an arrangement affording space for a large quantity of wall fruit. There are five vineries, two Peach-houses, a stove, and a number of pits. Probably the extent of this part of Mr. Nelson's charge is beyond the requirements of the relative of the owner who, at present, occupies Bowood. The soil here is light and warm, and this may partly explain the very vigorous and early growth of the Asparagus Kale, a variety which Mr. Nelson recommends beyond all others. It has supplied abundant sprouts since the end of March this season, and the more they are plucked the more freely they break. Sheep farmers would have been glad of a few acres of such Greens this year. The seed of this productive Kale is sown early in June, and the plants are set out in August.

Lilies of the Valley were in blossom in the kitchen garden on May 16, and the Gentianella, doing well on this soil, had put forth its deep blue blossoms. The beds of Pansies were brilliant, and the rows of Aubrietia could not be ignored, common as the plant may be. The abundance of Spinach showed the warmth of the soil; and a fine specimen of Ceanothus Veitchianus on the wall, cut by frost for the first time since it was planted here, recalled to mind that a famous gardener and ardent horticulturist once commanded an army of gardeners here, and introduced to their present sites some of the plants we now admire here, at a time when they were more novel in English gardens than they are now. It cannot be said that Mr. John Spencer made Bowood, but, at least, he did much to render it famous. *II. E.*

NEW OR NOTEWORTHY PLANTS.

LÆLIA GRANDIS, Lindl., var. *TENEBROSA*, Hort.

This, as its name implies, is a dark variety of *Lælia grandis*, a species described by Lindley as long ago as 1850, but which, until recently, has been a rare plant in gardens. The typical form has nankeen-yellow, decidedly undulate segments, and a white lip with rosy-purple veins. Until the appearance of the present form, very little variation had been observed in the species. In May, 1889, a flower from the collection of H. Tate, Esq., jun., of Allerton Beeches, near Liverpool, was sent to Kew by the Liverpool Horticultural Company, which, I thought, must be a peculiar dark variety of *Lælia grandis*. A year later, Mr. A. H. Grimsditch, of Clayton Square, Liverpool, sent a flower with leaf and pseudobulb, saying it was introduced by his principal, M. Travassos, from a new district in Brazil. It has since flowered with Lord Rothschild at Tring Park, E. Gotto, Esq., of Hampstead, and Messrs. Linden, of Brussels, and proves to be quite constant in character. The seg-

ments are flatter than in the typical form, less undulate, and of a decided copper-bronze tint, while the lip is wholly purple, somewhat lighter near the margin, and darker in the throat. The plant exhibited by Lord Rothschild at a recent meeting of the Royal Horticultural Society received a First-class Certificate. It is no trifling variation, as is so frequently seen in this group, but a very distinct geographical variety, and a decided horticultural acquisition. The successive flowering of the plants mentioned above only proves the constancy of the characters pointed out, and it may yet have to be considered a distinct sub-species. *R. A. Rolfe.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA SCHRODERÆ ALBA.

A BEAUTIFUL variety, with the sepals and petals white, while the crisped lip has a large central yellow blotch. In addition to its snowy whiteness, it exhales an exquisite perfume. *Reichenbachia*, t. 17, second series.

LYCASTE SKINNERI ARMENIACA.

A form of this beautiful species, remarkable for the apricot-coloured segments and lip. Mr. Rolfe has an interesting note on the history of the species. *Reichenbachia*, t. 18, second series.

ODONTOGLOSSUM EXCELLENS, VAR.

A superb *Odontoglossum*, a natural hybrid between *Pescatorei* and *triumphans*, like *O. eugenes*, *O. Vuylslekanum*, *chrysolanum*, and "Albert Edward," the particular variety figured. *Reichenbachia*, second series, t. 19.

LÆLIO-CATTLEYA ELEGANS VAR. BLENHEIMENSIS.

A natural hybrid between *Cattleya guttata* and *Lælia purpurata*. The sepals and petals are spreading, fleshy, and of a deep rose colour; the lip a deep crimson. According to Mr. Sander, it is best grown in baskets, in a rather sunny, moist position of the *Cattleya*-house, suspended near the glass, in a temperature of 65° to 70° in winter. In the summer the temperature may rise much higher. The plants are unlike *Cattleyas*, and should never be allowed to become thoroughly dry. *Lælio-Cattleya elegans* makes two growths during the year, and is extremely variable in its time of flowering. "The attempt," says Mr. Rolfe, "to refer the plant to either of the parent genera only involves us in all kinds of inconsistencies." *Lælio-Cattleya Schilleriana* ×, in like manner includes all the hybrid forms between *Lælia purpurata* and *Cattleya intermedia*. *Reichenbachia*, t. 20.

ONCIDIUM DIVARICATUM, Lindl.

At the Château de Boterlaer, at Durne, near Anvers, an example of this Brazilian Orchid is now in bloom with a stem which measures about 8 feet, and bears 784 flowers. A plant of *Cattleya Mossii*, Miss Zoe (?), is noteworthy on account of the markings on the petals. *Z.*

TOMATO FORCING.

1. The Tomato can be forced for winter bearing to advantage, but it demands close and constant attention.
2. A Tomato-house should be very light, warm, and the roof should be at least 5 feet above the beds or benches.
3. An abundance of sunlight is essential.
4. The temperature should be about 60° to 65° at night, and 70° to 80° during the day, or higher in full sunshine.
5. House Tomatoes demand a rich soil, and a liberal supply of fertilisers.
6. In this latitude, house Tomatoes bear when four to five months old.
7. Tomatoes like brisk bottom-heat. They may be grown in large boxes, or upon benches; 18-inch

square boxes, placed about a foot apart, and containing four plants to the box, afford one of the neatest and best means of growing Tomatos.

8. Winter Tomatos must be trained. From one to three stems, depending upon the distance apart of the plants, are allowed to grow from each plant. These are trained upon perpendicular or ascending cords. The plants must be pruned as fast as new shoots appear. The heaviest clusters should be supported.

9. Water may be used more freely early in the growth of the plant than later. Wet the soil thoroughly at each watering, rather than water often. When the fruits begin to set, keep the atmosphere dry, especially during the middle of the day.

10. In midwinter, the flowers should be pollinated by hand. This may be done by knocking the pollen from the flowers when the atmosphere is dry, and catching it in a spoon or other receptacle, into which the stigma is thrust.

11. One-sidedness and much of the smallness of

14. Lorillard, Ignotum, Volunteer, Itaca, Golden Queen, and Beauty, we have found to be good winter Tomatos.

15. Insect pests are kept in check by fumigating with Tobacco, and the spotted mite by Hughes' Fir-tree oil. Fungi are controlled by ammoniacal carbonate of copper and Bordeaux mixture. *L. H. Bailey, Cornell University Bulletin.*

A FRENCH TOWN GARDEN.

IN nothing in the case of towns has there been so remarkable a progress during the last quarter of a century as in the formation and decoration of parks and open spaces. Who is there that remembers the stony wilderness at Amiens, dominated over by a beperiwigged notability, but will be astonished and delighted with the change that now meets his eye. In this issue we give an illustration of a more recently

minds of some people who, in this matter, are in the long run penny-wise and pound-foolish, we would suggest, that while the rate-payers might be asked to provide for the formation and up-keep of the parks and spaces, the specially decorative features might be supplied by public subscription, or by the donations of philanthropic individuals having the welfare of the citizens at heart—in the same manner that, having provided a suitable gallery, generous donors contribute the pictures.

COLUMBINES.

At one time Columbines were regarded as common plants, as few people were acquainted with any species or varieties except those to be found in cottage-gardens and shrubberies; but since the introduction of the lovely Colorado species, and others, they have come under notice, and are much



FIG. 16.—TOWN GARDEN AT ABBEVILLE.

house Tomatos appears to be due, at least in part, to insufficient pollination.

a. One-sidedness appears to result from a greater development of seeds upon the large side.

b. This development of seeds is apparently due to the application of the pollen to that side.

c. An abundance of pollen applied over the entire stigmatic surface, by increasing the number of seeds, increases the size of the fruit.

d. The pollen, either directly or indirectly, probably stimulates the growth of the fruit beyond the mere influence of the number of seeds.

12. The second crop of fruits is obtained by training out a shoot or shoots from the base of old plants, by burying the old plant, or by starting a new seedling crop. The first method appears to be the best.

13. House Tomatos in this latitude yield about 2 lb. to the square foot. The amount of the first crop does not appear to influence the amount of yield in the second crop from the same plant.

formed garden in the neighbouring town of Abbeville. The situation is flat, and not much has been done to vary the monotony of the surface. The groups of trees selected for colour effect—dark shades of green of varied intensity, in front of Birches and light-foliaged trees—serve to break up the formality, while the treatment of the water is satisfactory. The flower-beds are ugly, and not to be commended. "*Mais c'est la mode!*" We have mentioned certain French towns, but it must not be forgotten that we were in advance of our neighbours, and such towns as Canterbury, Ipswich, Derby were provided with these welcome resting-places years before the time we speak of. We can but repeat what we have so often said, that the chief requirement of our towns now-a-days is not so much large parks at a distance from the centres of population, but numerous smaller ones interspersed throughout the more densely populated portions. As the question of expense, and the necessity of "keeping the rates down" are paramount in the

sought after as decorative plants for the borders. One of the most pleasing of the named kinds is *Aquilegia chrysantha*, which grows about 2 feet high, and blooms freely, the flowers being of a soft canary-yellow colour, and they have very long spurs, which render them attractive and of striking appearance. *A. cœrulea*, another that was introduced to the public at about the same time as that just mentioned, has spurs almost equally long, and produces widely-distended flowers of a rich pale blue shaded with white; but as this kind dies out so quickly, rarely lasting more than three or four years, and has to be raised from seed, it is difficult to get and keep it true, especially if any others are near. This being so, plants of it should be isolated for seeding purposes, as it is far too good and valuable to lose or become degenerated by being impregnated with commoner kinds, and yet much has been gained in that way, as witness the box of exquisite blooms, possessing so many shades of colour, exhibited by Messrs. Veitch at the Royal Botanic Show,

on the 13th of last month. These are destined to enrich our gardens, and it is more than likely that they have the hardy, enduring character of some of the older sorts; and, if so, then there will be but little trouble in keeping them. Be this as it may, they should be largely grown; the way, I think, in which Columbines look best, being in groups or large patches, mixed, as then they show each other off to advantage. To be really successful with the finer varieties, they must be treated as biennials instead of perennials, the most suitable time for sowing being early in spring, as then the plants have a long season's growth, and become strong by the autumn. Many, however, sow as soon as seed is ripe, and plants raised in August flower the following year, if pricked out and grown freely on as soon as they are up and of a size fit to handle. For semi-wild places, such as the hardy fernery, or wide pleasure-ground borders, the most vigorous kinds of Columbines are quite unrivalled, as in such situations they look quite at home, and become naturalised, and take care of themselves. *J. Sheppard.*

WINE PROSPECTS IN BURGUNDY.

WHILE the Bordeaux district of France has been fighting and overcoming the Phylloxera, mildew, and other scourges of the vineyards, Burgundy, having been attacked later, scarcely yet shows the same progress in victory over the insidious foes. It is a melancholy sight for those who knew the "golden slope" in days before the arch enemy of the Vine marched into occupation, to mark the scars still left, where every cubit had its "pleasant plant," standing deep-rooted in the ruddy soil, many of the "ceps" associated with memories of half a century of rosy wine. But grass and weeds hide now on too many a golden hill the rich red soil, and it will be years before some of the famous *crus* regain their former position, both as to quantity and quality.

We are indebted to Monsieur Louis Latour, Maire of Aloxe-Corton, one of the largest growers and holders on the Côte d'Or proper, and who has spent his life amid the vineyards, growing and tending wines, for a personally conducted survey of his district and for much practical information as to the prospects and condition there of viticulture. He has lately added to his properties the Château Corton, an estate well known till the Phylloxera almost destroyed its vineyards, and hopes in a few years to restore it to its pristine reputation. The estate is about 120 acres in extent, and he calculates having, on the purchase, replanting, and culture, to spend between thirty and forty thousand pounds before the vineyards will give him a proper yield, which fact will give some idea of what the losses have been on other estates.

The means used to combat the various ills to which the Vine seems heir in these latter days are those which our columns from time to time have made familiar to our readers. *Bouillie Bordelaise* for the mildew and other cryptogamic scourges which endanger the produce by attacking the plant in leaf and shoot, and bisulphide of carbon distributed to the roots, are the principal remedies. The French Government contribute, and the municipal authorities add to the subsidy, towards the expensive campaign against their common enemies, effective control and supervision being provided to ensure the funds being properly applied, and the due proportion met by the proprietors whose vineyards are affected.

Burgundy has again "caught on" of late years with our British wine drinkers. When our rulers by heavy differential duties almost killed the trade in French wine to encourage the produce of our ally Portugal, it was Burgundy above all that passed almost away from lip and literature. The contemporary colouring of the time of the Stuarts, Dutch William and Queen Anne, is rosy with the wine of Burgundy. Pious Dick Steele quaffed her vintages not wisely but too well; strong-headed Joseph Addison loosened his tongue without beclouding his brain with the same generous fluid; and the high-

bred beaux and roisterers of that day—a time so vivid in dress and doubtful deeds—reeled home, top-heavy with too much of the wine from the *cuvées* of the Côte-d'Or.

But great though the ravages have been in her vineyards, Burgundy can still give to the British *bourgeois* as good a wine as most of those gallants quaffed, at a price which cost of transport, &c., then placed far beyond their modest reach. Large buyers, such as Messrs. Gilbey and others, give the single-bottle buyer a Pommard at 1s. 6d. per bottle which has been bought first-hand as grapes, vintaged on the spot, stored in cool cellars in the limestone, and when fit to bear the voyage and the bottling, shipped *via* Dieppe and Newhaven to our shores.

The old Duchy included, roughly, the present departments of the Côte d'Or, Saône-et-Loire, and Ain, a country all wine-bearing, more or less, some 120 miles long by 40 miles broad. Purists may press to confine the name of "Burgundy" to the Côte d'Or, but no such limits are needed as a guarantee for its integrity. It would be as sensible to draw a line round the choicest district of the Haut Medoc, and deny to all the rest of the Bordeaux district the name of "Claret" for its wines. Macon, while well within the old Duchy, is more than 80 miles south of the centre of the Côte d'Or proper, which gives the name to its department, and is a large wine centre, round which is vintaged a huge quantity of genuine wine, distinctively racy of the soil, though lacking that highest quality and flavour which in former days raised to their present pre-eminence such names as Clos-Vougeot and Chambertin. From the district round Macon to that centre itself, and northward to the cellars of the merchants in Beaune and Dijon, go millions of gallons to be rightly distributed as "Burgundy;" were it not so, this sound red wine would be beyond the pockets of all but the wealthy. As matters fortunately stand, no citizen who has fifteen or eighteenpence to spare need lack a glass of genuine Burgundy if he have a respectable wine merchant or grocer within hail.

INSECT PESTS.

THE HOP LOUSE.—Prof. Riley, in a circular recently published by the United States Department of Agriculture, sums up the history of this pest. The eggs are laid on Plum trees. These produce wingless, so-called females, which feed on the Plum, and in their turn produce, by agamic reproduction, winged aphides, which desert the Plum and settle on the Hop, where they give birth to other generations of wingless individuals, and, ultimately, to a generation of winged aphides which fly back to the Plum, and on it give origin to the true female insects, which are wingless and never leave the Plum. Thus, there is but one generation of sexed insects produced, and this at the close of the life-round, the females, wingless, on the Plum trees, the males, winged, on the Hop. All intervening generations (and there are many) are parthenogenetic. If we had to deal with a fungus, we should call the latter sporophytes, producing spores, whilst the true sexual generation would be the gametophyte. From these points in the life-history, Prof. Riley concludes that it will pay to spray all Plum trees in the vicinity of Hop gardens in the spring or in the fall, after Hop picking. All wild Plum trees in the vicinity of the Hop gardens should be destroyed, and the Hop vines should be burnt.

Spraying the Hops can be made quite effective, the more so, as during the summer the lice cannot migrate, excepting by crawling from one garden to another, so that a careful grower is not in this case at the mercy of an apathetic or careless one. Kerosene emulsion is the best, made as follows:—Kerosene, 8 pints; water, 4 pints; soap, half a pound. Dissolve the soap in the water, heat it to boiling, and add it when boiling hot to the kerosene. Churn the mixture by means of a force-pump, and spray for five or ten minutes, till a smooth creamy emulsion

is formed. One part of this should be diluted with twenty-five parts of water when required for use. A spray-pump with a Riley nozzle is required, and may now be had of our makers.

THE NUN.—We have already called the attention of our readers to the devastation of the Pine forests caused by a moth (*Liparis monacha*) in Bavaria and Belgium. The only really effective remedy, according to an article in *Insect Life*, is the grease-band, such as is used for the winter moth of fruit trees, the object being to prevent the ascent of the larva.

CHANCELLOR SWAYNE'S GARDEN.

IN the close of Salisbury Cathedral, about 100 yards westward from the west entrance door, and actually under the shadow of its lofty spire, Chancellor Swayne has his substantial residence. At the rear of it is first a lawn and then a garden, which extends about 150 yards down to the lazy Avon, which meanders past it in a southerly direction. Both lawn and garden are pleasantly situated and admirably kept, and contain a charming diversity of character and variety of subject within the space of less than 2 acres. Admirably arranged collections of hardy herbaceous and alpine plants are to be found in fine condition as regards health and floriferousness, each plant being allowed ample space for proper development. Some owners of collections of these fine plants place the several species and varieties in masses, which, although they make a grand display when they are in flower, are nevertheless not to be commended, on the ground that large and very undesirable unoccupied spaces occur in the floral picture as plant after plant goes out of flower. Canon Swayne's practice, which is worthy of general adoption, is to intersperse individual plants of different species, that is, individual plants of species known to flower in May are disposed among those whose flowering-time is June and July, and in this way there are no large unoccupied spaces to mar the picture in either the beds or the borders; the proportionate number of species and plants necessary to make a floral display each month during the period indicated having received full consideration when the beds and borders were planted.

On entering the gardens from the house, the view westward is a charming one. Close at hand, and in various directions, are very natural-looking rockeries of irregular surface and outline, and gay at this season of the year with the foliage and flowers of a choice collection of Alpines, to which the crested fronds of the *Lastræas*, *Athyriums*, &c., in the hardy Ferneries, a little way off, and the healthy specimen *Wellingtonia gigantea*, with its branches brushing the beautiful green sward, which can only be found in these old gardens, lend charm as well as variety. Leading further, and as a continuation of the lawn, is a faultless turf walk, 100 yards long, and having a width sufficient for six persons to walk abreast. Herbaceous borders, 10 feet in width, line the sides of this pleasant path, which in the season of flowers are ablaze with a variety of plants of almost every conceivable colour. Beyond are pastures, and further yet, the woods of Lord Pembroke, with occasional glimpses of the winding Avon and the Wyllye, which—

"Now hid in shade, they work their silent flood
Through the dark mazes of the pendant wood."

Standing sentry-like at the ends of these twin borders are two handsome columns of *Cupressus Lawsoniana*, guarding, as it were, the entrance to a third garden. This garden has its own well-filled beds and borders set at short intervals in the verdant, closely shaven lawn, and its Ivy and Clematis-clad arbours at each end of the broad gravel walk which skirts the Avon—truly as quiet and lovely a spot as either poet or artist in meditative mood could desire. The flowers which fill the rear parts of the

borders consist of Phlox, Delphinium, Helianthus, Michaelmas Daisy, Spiræa, Aconitum, and the like. The plants in flower in the body of the borders at the time of my visit, at the end of June, were, in addition to the Delphiniums, Peonies, nearly over; Poppies, of various shades of colour; Aquilegias, also nearly over; Campanula, Lobelia, Chrysanthemum, Pyrethrum, Eryngium alpinum, Potentilla in variety, including the bright crimson-flowered P. Etna; Gaillardia, including G. hybrida splendida, with chocolate centre and golden fringed flowers; Gillenia trifoliata, with elegant spikes 24 inches high and light flowers; Amaryllis longiflora, Veronica, Erodium Manescavi, Linums, Betonica grandiflora, Spiræa filipendula flore-pleno. Polemonium Richard-

of Cypripedium is quite hardy here, and the bed is top-dressed with leaf-mould in winter. The finely-developed flowers of white and rose colour form a very conspicuous whole; in the same bed Iris Kæmpferi, in a few examples, were in flower.

In concluding my brief notes of a very interesting and excellently managed garden, I may be permitted to record my indebtedness to Chancellor Swayne for his courtesy in showing me through his beautiful garden and describing some of the choicest subjects on the way. H. W. W. [Views in the Canon's Garden have been painted by Mr. A. Parsons; see notice of the same, p. 468 of *Gardeners' Chronicle* for April 11, 1891; *Rouge et Noir*, and the previous paragraph. Ed.]

so far as that could be done without interfering with the few fine trees still remaining.

WHAT IS THE GOOD OF IT?

A good many people seem to think it is wise to indulge in a general wail over the decay of country life. Perhaps they feel better for it; like certain kinds of women, it does them good to cry. To hear these persons talk you would certainly think that the land is full of abandoned farms, and that the cultivation of the ground is sure to result in loss and disaster. All the young men are going off to the cities in search of the fortunes they never can find

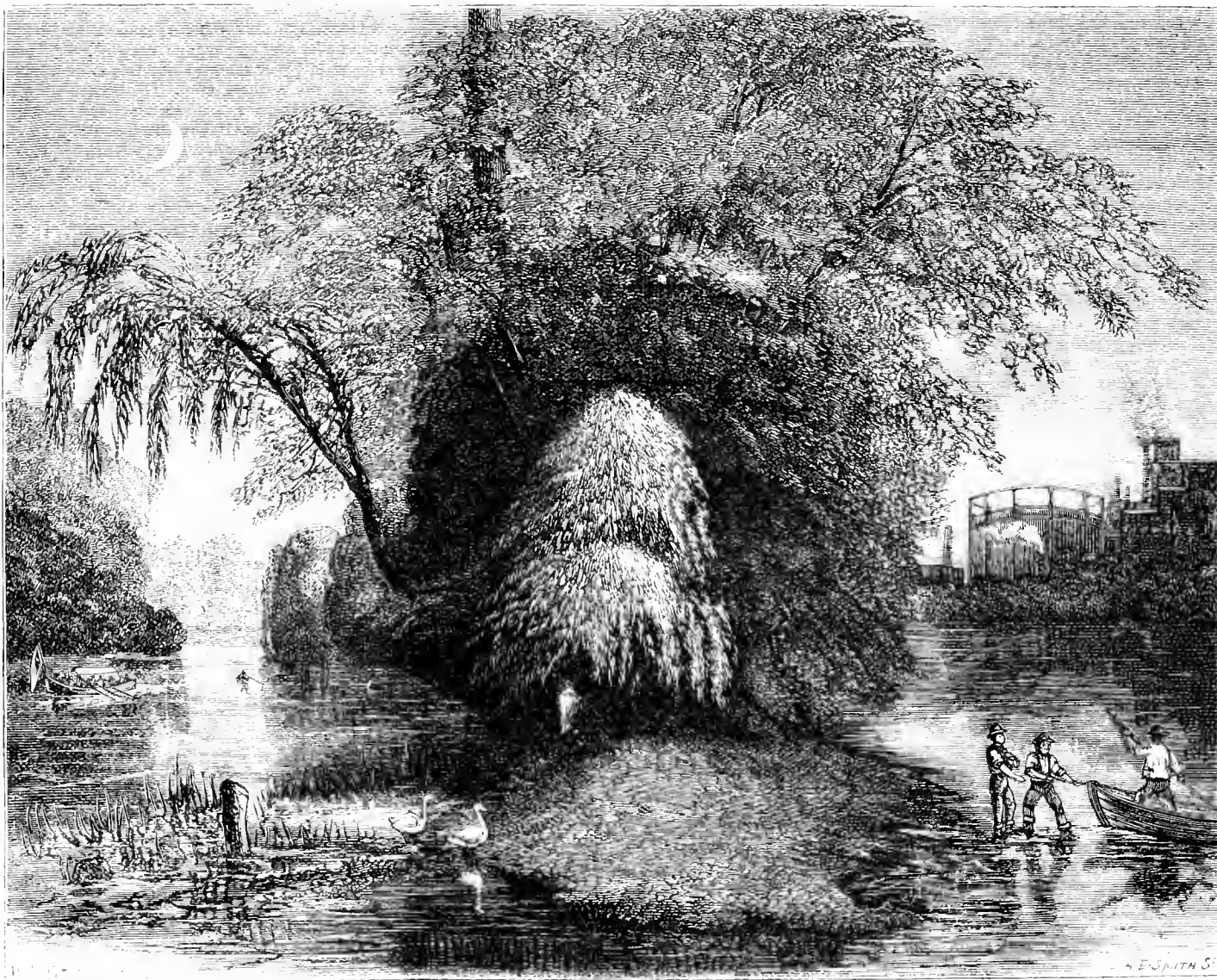


FIG. 17.—THE KEW EYOT.

sonii, the spikes with sky-blue coloured flowers, and stems about 15 inches, narrow, with finely divided leaves, is very effective. Tufts of Dianthus alpinus and D. crenatus showed themselves to great advantage, standing as they did in close proximity to the turf, as also the several varieties of Armeria, Aubrietias, including A. Hendersoni, Veronica prostrata, Pansies, &c. I must not omit mention of a group of Cypripedium spectabile in fine flower that stood close to one of the small glasshouses; these plants are growing in peaty soil placed on an artificial stratum of clay, which just suits these moisture-loving plants. They are slightly shaded from the mid-day sun by a neighbouring shrub. This species

THE KEW EYOT.

Now that the fate of this beauty spot is under discussion, we give an illustration (fig. 17), showing its condition some fifteen years ago. The illustration will suffice to show what has been lost in the interval, and it feebly indicates what we shall gain by the extension of the view over Brentford!

What should be done to save and protect the islet, is so perfectly well-known, that we need not repeat what has been said so often. Our impression is, that the island should be placed under the management of the authorities of the Royal Gardens, Kew, and utilised for the growth of Alders and Willows,

in the country! Now while this melancholy company may feel better for their wailing, it doesn't do a particle of good to anybody else. If they were polite they would pull down the curtains and have a good cry all by themselves where nobody could hear or see them.

It is not wise, it is "not good business" to listen to these people. It is one of the everlasting verities that out of the ground come all food, all raiment, all wealth, all good things worth having. One kernel of corn will grow into a plant bearing two ears of corn containing 200 kernels, or an increase of 400 per cent. in six months on a piece of the earth measuring 2 x 2 x 1 feet. Where is the trade or

business in any city that will pay such an increase? Wall Street is ridiculous beside such a percentage, and yet they say it does not pay to raise corn! It pays Nature—she grows rich. And if a field of corn increasing at this rate, does not pay the owner, there is something the matter with the man. It is not the plant, or the field. Forever and ever, so long as the world holds men, there will be a demand for food, and every particle of it must come out of the earth or the sea. Every ounce of food is, first of all, a plant. Forever and ever, then, will there be a demand for plants. The growing of food can never be unprofitable, if the right man be at the plough.

Never in the history of the world were there so many to eat in proportion to those who gather food from the earth. Never did the earth yield so much in proportion to the labour spent upon it. Never before did it cost so little labour to earn food. The great cities of to-day would be impossible if the food they consume had to be raised by hand tools or teamed to market by horses. There are not horses enough in the world to haul the food from the farms to the towns. There are not men enough in the entire country to cut the grass or gather the grain by hand. How then is it possible that the ancient art of gardening is falling into unprofitable decay? It is not. Gardening or producing plants and food on small pieces of ground is simply in a transition state. Take the Potato. It was a garden crop, it is now a farm crop. To raise Potatoes at a profit it must be treated as a manufacture; it must be done on a large scale, with the largest, best and most powerful tools.

The man who harvests one acre of Potatoes by hand cannot compete with the man who harvests a hundred acres by machinery. Shall he, therefore, give up his acre garden and say that gardening does not pay? Not a bit of it. Cover the acre with glass and don't raise Potatoes. It's business, not sentiment. Gardening will pay, always did pay—the business gardener.

Moreover, never before did the great mass of the eating population (that's everybody) want so much food. Never before were the eaters so particular as to what they eat. The American wants the best, and he can pay the best. He uses more fruit than any man who ever lived. His wife wants more flowers than ever woman wished for before. It is idle to say that it does not pay to produce fruit and flowers. Perhaps it doesn't pay you. It pays somebody, and if it is not you, why, did it never occur to you that there was something the matter with you?

You and I and all of us who are producing food from the ground, are tired of the people who wail about the unprofitable farms and gardens; we are too busy to stop to listen to such creatures. Let them go off to the cities and stay there. They are not worthy to live in God's country. We know that seed time and harvest shall not fail. We know that the food-producing business is simply suffering a great and grand change for the better. The changing may be a trifle uncomfortable (moving day always is), but the move is an advance. Gardening is growing safer and surer. It is becoming more scientific, more exact, more like a manufacture, and therefore more profitable. We are looking forward and not backward, and much prefer those who will lend us a hand to those who merely sit on the fence and howl. What is the use of wailing? *Charles Barnard, in "Canadian Horticulturist."*

REMARKS ON THE FRUIT CROPS OF 1891.

[For Tabulated Summary, see p. 97.]

SCOTLAND.

ABERDEEN.—Owing to slight frost and cold N. and N.E. winds when in bloom, Apples set badly and are a poor crop, with the exception of a few trees growing against walls, which carry a heavy crop. Pears are a fair crop for this district. Plums are also a fair crop. Cherries had an abundant

blossom, but they set badly. Bush fruits had also plenty of blossom, but are a miserable crop. Strawberries and Raspberries will be good and abundant. Everything is about two weeks later than usual. *John Forrest, Haddo House, Aberdeen.*

AYRSHIRE.—The fruit crops in this neighbourhood are, without exception, a complete failure, and the poorest that we have known for years past. The mild weather which we had in February, followed by the severe frosts in March and April, are the chief cause of the failure. *N. McKinnon, Dumfries House, Cannoek.*

— Apples are looking very well at present, and should be much better than usual, being a fair size already. Gooseberries are a good crop, other small fruits not so heavy as usual. The weather has been too dry for the Strawberries, and the fruits are, therefore, much smaller than we usually have them. *W. Priest, Eglinton Gardens, Irvine.*

EAST LoTHIAN.—Apples blossomed profusely, but the weather was too dry and sunless for a good set. Pears are generally clean and good. Apricots are a very poor crop indeed. Small fruits are, in some places, abundant; in others there are none. Strawberries, and all other crops up to date, are suffering from the intense drought. *R. P. Brotherston, Tynninghame.*

FORTHSHIRE.—On account of the dry, hard weather experienced in spring, the fruit crops in this district are not up to our expectations. Excepting Pears, all kinds bloomed well. Peaches, Nectarines, and Apricots, are not much grown out-of-doors, but what there is, especially Apricots, are much finer than usual. The blossom of Pears, Plums, and Cherries, was much injured by 10° of frost on May 17. The Apple blossom, which was unusually fine this season, got severely cut by the severe frosts in the second week of June (8° on 9th, 6° on 11th, 3° on 13th). Early Strawberries and small fruits suffered severely by same frosts. Crops about a fortnight late. *Jas. Whitton, Glamis Castle Gardens.*

— Strawberries and all small fruits very abundant, and of excellent quality in this neighbourhood, but later than usual, owing to the low temperature up to the second week in June—on the 18th, 63°, 22nd and 26th, 70°. Rain fell on one day, but only slight showers. *James Mitchell, Panmure Gardens, Carnoustie.*

KINROSSHIRE.—The mild month of February, succeeded by a very severe March, had a good deal to do with a scarce crop of small fruit. Last year's cold, late season is, in my opinion, to blame for the failure of Apples, Pears, and Plums in this district. *John Fortune, Gardener, Blair Adam.*

MIDLoTHIAN.—Fruit trees were remarkably late in flowering this season, especially Plums and Pears, and although there was an abundance of blossom, the raw harsh weather which prevailed in April and May, when the trees were in flower, caused much of it to drop without setting, and what did set was much thinned by the cool dry weather which followed till near the end of June. Since then the weather has been very favourable, moist and warm, and fruit of all kinds is promising to be a much finer crop than could have been anticipated a month ago. The trees and bushes have been very free from insect attack, and the genial rain and heat have caused the fruit to swell freely, and it now promises to be of large size and good quality. Apples, Apricots, Cherries, Pears and Plums are all excellent; but Peaches and Nectarines suffered from the cold spring, and are below the average, the finest being the early varieties, especially Hale's Early Peach and Lord Napier Nectarine. All small fruits are abundant and very fine, but much later in ripening than usual. *Malcolm Dunn, The Palace Gardens, Dalkeith.*

BANFFSHIRE.—After the fine ripening autumn of last year, fruit trees of all sorts showed an abundance of blossom, and most sorts have set a fair crop. Victoria, Early Prolific, and Jefferson Plums are heavily cropped, both on walls and standards. All

the early Apricot blossoms were killed on March 14, but the later ones set well, and we have still a good crop of clean healthy fruit. Peaches are thin, but trees healthy and vigorous. Small fruits abundant, but later than usual. *C. Webster, Gordon Castle.*

NAIRN.—The fruit crops have not fulfilled the early promise when in flower; all the larger fruit on walls and in the open garden dropped, and left but a sprinkling on most of the trees. Small fruit, such as Gooseberries, Currants, Raspberries, and Strawberries, are a full crop. *James Maitland, Cawdor Castle.*

PERTHSHIRE.—We have been gathering Strawberries since June 28 in fine condition. The Captain is our best early this year; Noble is also very fine. Peaches on open wall are very good crop; also Nectarines. The sunshine enjoyed recently is greatly in their favour. *P. W. Fairgrieve, Dunkeld House.*

SUTHERLANDSHIRE.—Apples and Pears are very much under average; many trees which were heavily cropped last year show no crop this season. Plums, as well, are a short crop. Gooseberries are thin. Early Strawberries are giving good gatherings. Raspberries look well, but Black and Red Currants are thinner than usual. The inclement spring has left its mark on our fruit crop. *D. Melville, Dunrobin Castle Gardens.*

ENGLAND.—NORTHERN COUNTIES.

NORTHUMBERLAND.—The fruit crop here is exceptionally fine. Apples above the average; Red Calville (the best early), Lord Suffield, Keswick Codlin, Lord Grosvenor, Stirling Castle, Yorkshire Beauty, Ecklinville, Bismarck, Alfriston, Glamis Castle, Ribston (on walls), and many others, good. Of Pears on walls, Beurré Diel, Beurré Clairgeau, Broxmouth Park, Beurré Superfin, Louise Bonne of Jersey, Marie Louise, Keele Hall Beurré, Hacon's Incomparable, Easter Beurré, are a full crop and good. Doyenné du Comice promises to be good here. Plums (Victoria) are extraordinarily fine on walls; also Jefferson; Coe's Golden Drop, Kirke's, &c., good. May Duke Cherry very fine. Apricots, Peaches, and bush fruit are all very fine. *George Harris, The Castle Gardens, Alwick.*

WESTMORELAND.—The spring of this year was the coldest in the memory of our oldest inhabitant, and 13° of frost on Whit Monday destroyed the remnants of a once promising show for fruit. Apples in orchards did not show much blossom, but wall trees had plenty. Strawberries are fine, although the first and largest blooms were frosted. *W. A. Miller, Underley, Kirkby Lonsdale.*

DURHAM.—Owing to the cold east winds during the time when in blossom fruit did not set, and on May 17 and 18 sharp frost with snow prevailed. The frost caused part of the Currants and Gooseberries to fall, but I have a fair crop owing to not pruning, the foliage protecting them in early spring. Strawberries are very small, the very dry weather in May and June, and little rain so far in July, having told on them disadvantageously; all other crops are suffering, and the grass is burnt up in many places. *R. Draper, Seaham Hall.*

— The unusually late spring we have had made us hopeful that the abundance of bloom of all kinds of fruit we had would escape the much-dreaded spring frosts, but on May 17 we had occasional snowstorms during the day, and in the evening a blinding storm, which lasted upwards of an hour, leaving quite a thick covering, which was followed by 13° of frost, totally destroying all unprotected bloom, and it is only the late blooming varieties of all kinds that are fruitful now; notably so are the two Codlin Apples, Keswick and Manx, both bearing abundantly. One strange phenomenon of the storm still visible is that no damage was done more than 20 or 30 feet high, the foliage beyond that height retaining its spring glory, whilst all the lower portions had the appearance of having been boiled. *Richard Westcott, Raby Castle, Darlington.*

YORKSHIRE.—The fruit crops, on the whole, are

much better than could have been expected, after the severe frost—15°, May 17—which took the first bloom of the Strawberries, which are plentiful, but rather small. Apricots are very thin on the open walls, plentiful in the open shed. Cherries and Currants suffered a great deal from the frost; Morellos are a good crop, being late in flowering. Pears are a fair crop on walls. Standards of the Hesse Pears have a heavy crop. *Bailey Wadds, Birdsall, York.*

YORKSHIRE.—The 10° of frost which we experienced on Whit Sunday night played sad havoc here. In the thirty-four seasons that I have been gardener here, I never saw such a scarcity of fruit. Strawberries are the only things that are passably good. Peaches come the next, all other things are a long way below an average. *Thomas Jones, Ribston Gardens, Wetherby.*

— All fruit trees bloomed abundantly and looked very promising until May 17 and 18, when we had 13° of frost, which destroyed all the blooms expanded. Gooseberries and Currants set well; but on the top part of the trees the fruit was blackened and killed. Strawberries good. Raspberries an abundant crop. *Robert Kingston, Brantinghamthorpe.*

— The severe frosts of May 17 and 18 ruined Pears and Plums; small fruits, such as Gooseberries, Black and Red Currants, also the first and best flowers of the Strawberries. The frost of the 18th killed the leaves on the green and Copper Beeches. A week afterwards they had the appearance of autumn, and are only now recovering. *R. Cook, Edenthorpe, Doncaster.*

LANCASHIRE.—The frost destroyed nearly the whole of our Pears on the morning of Whit Monday, and every Apple blossom that was showing colour was blackened in the centre. The same may be said of Strawberries, but there were only two or three blooms much advanced on most of the plants. The weather since has been all that could be desired for them, except that we had too many dull damp days last week. Caterpillar has considerably reduced the Apple crop, but at present there seems to be a fair average. *W. P. Roberts, Cuerton Hall, Preston.*

— Apples and Pears are not much good in this part of Lancashire, even in the best of seasons. Plums have very few fruits, and the trees are full of aphid. Too many tall chimneys about us. Morello Cherries on north wall look well and have good crops; other Cherries do no good here, and Peaches and Apricots will not grow here outside. *S. McMaster, Gauthorpe Hall, Burnley.*

EASTERN COUNTIES.

LINCOLNSHIRE.—The fruit crops this year are very disappointing, as we had an abundant show of bloom of all varieties of fruits; but the cold north-east winds, with sharp frosts, made sad havoc with all kinds of fruit not protected, Plums and Cherries suffering the most. The dry weather has been very much against the Strawberry crop, and it will not be more than half a crop. *David Lumsden, Bloholm Hall Gardens.*

— Apples will be quite a great crop in this district. Pears are about an average crop, but the fruit somewhat small for the time of year. Strawberries are very fine, and good in quality. Plums, not very heavy crop, are very fine and clean as yet. *J. Rowlands, Bardney Manor, Lincoln.*

NORFOLK.—The fruit crops have not turned out so well as their promise was at one time, in consequence of the frost and snow. The best crops are Pears and Plums, and although Apples are an average crop, many of the trees do not look healthy. Cherries are very thin; Peaches and Nectarines are very good, an average crop; Apricots bloomed very irregular, the first flowers set best; there is a good crop of Gooseberries and Black Currants; but much fruit fell off—in many places nearly all. Strawberries have been very fine. There are a few small Nuts, but Walnuts are quite a failure. *H. Batchelor, Catton Park, Norwich.*

SUFFOLK.—Apples still falling fast, though possibly an average may remain. The same holds good

of Pears, though hardly to the same extent. Plums are the crop of the season, though many dropped. Cherries have dropped wholesale with few exceptions. Gooseberries and Currants are both under average, though Raspberries are magnificent. Strawberries an average, with the exception of Noble, which is almost a failure. *D. T. Fish, Hardwicke, Bury St. Edmunds.*

SUFFOLK.—The fruit crop in this district gave promise of being unusually good, but the cold east winds, with very severe frosts, have considerably lessened them, especially in exposed situations. Strawberries and bush fruits have been an abundant crop. *H. Rogers, Rendlesham Gardens, Woodbridge.*

CAMBRIDGESHIRE.—The bush fruit in this district is very light; Black Currants a total failure. Acres of bushes have not 1 lb. weight per acre. Gooseberries generally about a quarter of a crop. Raspberries look well, and promise an average crop. Apples are very light. Pears about half a crop. Of Plums, Victorias are a full crop; Early Rivers', Gisborne's, Blue Diamond, and Pond's Seedling, about half a crop; and Gages not more than one-sixth of a crop. Strawberries are very good. The frost of May 17 did some damage, but the caterpillars of the winter moth did much more. *Andrew Grant, The Vineries, Willingham.*

ESSEX.—The fruit trees in this neighbourhood were a grand sight in the spring, as far as bloom was concerned; in fact, it was regarded as being one of the best promises for fruit we have had for many years. In the evening of May 16 we experienced a most severe hailstorm, and on the following morning we had 9° of frost, which made havoc in the bloom. The earlier sorts, which were set, passed off fairly well, and the later varieties, which have not yet opened, have a capital crop. Greenfly on Plum and black-fly on Cherries have been most troublesome. Apples and Pears are very healthy. We have the best crops of Pears on walls. Apples are good on cordons and bush-formed trees. Strawberries have been very good. I consider this a very fair year for fruit for this neighbourhood. *Arthur Cooch, Havering Park, Romford.*

— Apples are dropping off badly, and what promised to be an over abundant crop can barely be described as average. Pears are rather better, and the quality is even better than that of the Apples. Plums promised a most abundant and good crop, but the "blight" aphid has been very bad, and the quality of the fruit is poor. Cherries are good on walls and standards, with the exception of Morellos, which have nearly all dropped off, and the trees are badly blighted. Peaches and Nectarines are an abundant crop, the trees are clean. Apricots have set well, trees healthy. Strawberries have grown rather too much, and a good deal of fruit has been spoiled by wet. *Jas. Douglas, Great Gearies, Ilford.*

— Amongst Plums, Orleans, Green Gage (especially Oullin's Golden), and Victoria are break-down crops. Apples, such as King of the Pippins, Hawthornden, Whorle Pippin, &c., excessively heavy crops; Emperor Alexander, Blenheim Pippin, Kerry Pippin, &c., good average crops. Many Raspberry canes were killed outright by frost; such as passed the ordeal are cropping heavily. Black Currants hereabout are a heavy crop of fine fruit. Apricots abundant. Peaches and Nectarines still an average crop, though fruits have occasionally failed at the "stoning." Nuts are almost nil, owing to earliness in flowering, and concurrent sharp frosts. *William Earley, Double House, Ilford.*

— Fruit crops in this neighbourhood are generally good, particularly stone fruits, which are better than we have had for the last ten years. Small fruits, Currants and Gooseberries, suffered a good deal with the late frosts, which caused a good many to drop. *James Vert, Audley End Gardens.*

MIDLAND COUNTIES.

LEICESTERSHIRE.—Frost, but not of sufficient severity to injure the blooms of certain kinds, occurred during the blooming period, which was

remarkable for its abundance, followed by the result of setting heavy crops of Pears and Plums and Cherries; but in the case of Apples the promise encouraged by bloom was only partially realised. There are many failures in Apple orchards; Frogmore Prolific maintains its character, and Bramley Seedling, which gave heavy crops last year, is again loaded with fruit. Black Currants are very thin; Gooseberries only half a crop, and Red Currants hardly an average; Raspberries abundant; Strawberries also. The good result of covering Apricots with tiffany while in blossom is seen this year in improved crops on the protected walls. I never saw such heavy crops of Pears on walls. *William Ingram, Belvoir Castle Gardens, Bottesford.*

WARWICKSHIRE.—Apples this year are a fair average crop, and the trees free from blight. Pears a heavy crop, trees and fruit looking healthy. Plums and Damsons also a heavy crop, especially the latter, the trees requiring propping. Apricots are unusually good and fine, and the trees healthy. *J. Rodger, Charlecot Park, Warwick.*

— Peaches and Nectarines outside showed well for bloom, but the set was very bad, owing to the frost. Pears suffered in the early part of season with maggot, but there is, notwithstanding this, a good crop. Damsons bloomed very well, but the crop is a poor one. The Gooseberry bushes are not so much infested by caterpillars as usual as with red-spider. I find lime-water good for them, and use it about three or four times a week with the engine. For the caterpillar on Pears we pick the leaves and burn them. *T. Beddard, Stoneleigh Abbey, Kenilworth.*

RUTLANDSHIRE.—One of the best seasons we have had for Strawberries; a few of the earliest flowers were killed by late frosts; the flavour is good and the crop is finishing off well. Apples and Pears have not set such heavy crops as were anticipated, but there is plenty for a good crop. Those few trees which bore well last season have the fewest this year. We had no frost worth mentioning while the flowers were opening, but the weather was very dull, snowy, and wet, and the failure of many of the blossoms in setting is probably due to depression of vigour when it was most wanted. *W. H. Divers, Ketton Hall, Stamford.*

BEDFORDSHIRE.—Fruit trees on the whole carry healthier foliage than for the last three years. Caterpillars have not been so destructive, still quantities of the best Apples and Pears show scars from their early attacks. Considering the snowfall and severe frosts in the middle of May, crops all round will be more favourable than expected. Apples, Pears, and Apricots are an average crop, as are Plums—Victoria again proving the heaviest cropper. Morello Cherries lost much fruit at stoning time. Small varieties of Damsons carry good crops. Currants are thin, particularly the Blacks. Strawberries bear well, but the fruit is not so fine as usual. *A. MacKay, Woburn Abbey, Beds.*

BUCKS.—With the exception of Black Currants all the rest promise to yield abundant crops, and the trees taken collectively are less subject to the attacks of insect pests this year than is generally the case. The crops of Peaches and Nectarines on the walls out-of-doors this year set in such quantities as I never in my experience beheld before. *G. T. Miles, Wycombe Abbey.*

— We had a grand promise for a fruitful year on our large Plum orchards until the frost of the nights of the 17th and 18th of May. The trees being in full bloom, it cut off more than half the crop. We shall now have nearly half a crop of most varieties of Plums and Damsons, and Apples are a good average crop, and the trees clean and healthy. Strawberries have been a very heavy crop, and small fruits of all kinds abundant and good. *J. Smith, Mentmore, Leighton Buzzard.*

— The fruit crops generally are fairly good in this neighbourhood. Apples are rather under average, but as this district was favoured with a very good crop last, a full one could scarcely be expected

this year, although the trees were laden with blossom. Among orchard trees, Cox's Orange Pippin, Blenheim Orange, King of the Pippins, Calville Rouge, and Sturmer Pippin are cropping well; also the following pyramid trees on Paradise stock:—Cox's Pomona, Grenadier, Cox's Orange Pippin, Lord Derby, Bramley Seedling, Lord Grosvenor, Bismarck, and Prince Albert. Pears about half a crop. Peaches and Nectarines a good average crop; trees now making good clean growth. All Apricot trees carrying a heavy crop—more than for several years past. Plums of nearly all kinds are heavily laden with fruit, especially Victoria and Golden Drop. Cherries also are plentiful in this district, both orchard and wall trees. Bush fruits and Strawberries plentiful and good. Black Currants suffered rather from late frosts, crop consequently rather under average. Filbert and Cob Nuts a fair crop; Walnuts none. *C. Herrin, Dropmore, Maidenhead.*

HERTFORDSHIRE.—Apples, where sheltered, have a fair crop of clear-skinned good fruits; where exposed to the late spring frosts, they are a failure. The nice rains, which came just right for the Strawberries, greatly helped to bring the late blooms on, the earliest being killed by the late frosts. Pears are an excellent crop, and the trees clean; also Peaches, Nectarines and Apricots are very good all round. *Joseph Pitt, Panshanger Gardens, Hertford.*

— Heavy crops of Apricots on all the trees. Apples thinned by the late spring frosts, but some trees have fair crops, conspicuous among them being Prince Albert, Lord Suffield, Lord Grosvenor, Worcester Pearmain, Irish Peach, Keswick Codlin. Pear trees are well cropped. Plums have heavy crops mostly, as have the Damsons. Strawberries plentiful but not such fine fruit as last year's, the foliage being much injured by caterpillar. Currants, Gooseberries, Raspberries, the heaviest crop we have had for the past ten years. Filberts not so good. Peaches and Nectarines well cropped; Cherries plentiful. *James Charles Mundell, Moor Park.*

WESTERN COUNTIES.

GLOUCESTERSHIRE.—All stone fruits on walls bloomed, set, and are swelling well. The fruit on the majority of the trees required a great deal of thinning. Pears and Apples are an average crop, and look very promising. Plums and Damsons on standards are very poor, owing to the destructive frost on May 17. Gooseberries, Currants, and Strawberries: fruit very fine, the bushes not being so heavily laden as in previous years. Outdoor Figs killed back by severe winter. *Arthur Chapman, Weston Birt, Tetbury.*

MONMOUTHSHIRE.—Eight degrees of frost in the third week of May destroyed here a splendid prospect of hardy fruit. Pears, Plums, and Cherries, which were in full blossom, suffered disastrously; Apricots were frozen through, Strawberries and Currants also suffered, while Gooseberries were only slightly injured, and Raspberries escaped through being later in flowering. Early flowering Apples were likewise considerably injured, but some of the late kinds carry good crops. Strawberries are abundant, although rather small. Raspberries are also plentiful. On higher elevations near us the crops of Cherries, Pears, and Plums are good, but the quality of the first-named is second rate. Altogether for us this is an unsatisfactory year for hardy fruit. *Thomas Coomber, The Hendre, Monmouth.*

WORCESTERSHIRE.—Apples of Keswick Codlin, Ecklinville Seedling, and Stirling Castle types are full crops, Cox's Orange Pippin and King of Pippins are all well laden, Blenheim's and many other of the large and early flowering kinds very sparse and lightly cropped. The hardy cider fruits more abundant. Apricots are clean and good, but there are many cases of branch dying, especially where the trees have been planted in loose soil, making rank growth whilst young, and heavily cropped afterwards. Plums are abundant, especially of the Pershore Egg Plum. Damsons partial. Victorias and Early Prolifics heavy crops. Coe's Golden Drop

and other choice dessert kinds good on walls. Cherries nearly a failure in this district, except Morellos on walls. Peaches and Nectarines very good crop, and trees healthy, although aphid has been persistent and troublesome. Small fruits on bushes were injured by frost on Whit-Monday night, 7° thermometer below freezing from 10 P.M. to 7 A.M. Strawberries: early bloom suffered, nevertheless full crop. Walnuts scarce. *W. Crump, Madresfield Court, Malvern.*

WORCESTERSHIRE.—Apples and Pears generally are light crops, but there are exceptions, and in some few cases heavy crops are noticeable—these in sheltered situations. Trees are very healthy and vigorous, and show but little of the ravages of caterpillar; this pest appears to be very much on the decrease—for this we are no doubt very much indebted to the birds, for nearly all kinds took them freely, especially so during the breeding season. There appeared to be no perceptible difference on trees that were dressed and those that were not. *John Austin, Witley Court, Stourport.*

— Taking orchards and gardens round about us, there is an excellent crop of fruit, and the trees, as a rule, are clean and healthy. Apples, without exception, are carrying a full crop, also Pears on walls and as standards. The crop of Plums and Damsons is the heaviest seen for years, and the trees, though supported by numbers of props, are breaking in all directions; bush fruits, too, are quite a full crop, and very good in quality, ripening up very rapidly. *Walter Child, Croome Court, Seicrux Stoke.*

SALOP.—Good old standard sorts of Apples are a good average crop; Pears much the same; Plums in this immediate district under the average, but in places that I have heard of, Damsons are a very heavy crop. *James Loudon, The Quinta, Chirk.*

CHESHIRE.—The Apple crop in this district, if taken collectively, will reach the average, the early varieties carrying good crops, the later ones rather light. All fruit trees have suffered considerably from blight. Pears are rather under the average, but Damsons are above it. Small fruits are fairly good, with the exception of Black Currants, which are almost a failure. Strawberries are bearing heavy crops, Noble being very fine; but it is very deficient in flavour, yet valuable for its size and earliness. Good crops of Waterloo, President, and other main varieties, and promising well. *Jno. V. Smith, Arley Hall, Northwich.*

— A magnificent show of blossoms on nearly all fruit trees gave promise of a very plentiful fruit crop; but a continuance of east and north-east winds, with occasional frosts during the time of flowering, reduced the quantity of fruit set to little over an average crop of Apples and Pears. Small fruits, Strawberries, &c., are a good average; Gooseberries very plentiful, but Black Currants a very light crop. Damsons, in sheltered situations, very plentiful, but exposed to north and east, not above average. Fruit trees, generally, look healthy. *Wm. Whitaker, Crewe Hall, Crewe.*

SOUTHERN COUNTIES.

MIDDLESEX.—Many of our hardy fruits gave great promise early in the season, but the severe frost and hail-storm on May 17 did much damage to trees in bloom; many of the best kinds of Apples have not a fruit on them, but Manx and Keswick Codlin have good crops; there are a few Kings, Quarrenden, and others. Peaches, Nectarines, and Apricots set heavy crops, and are now looking well. Cherries and Plums, which gave promise of heavy crops, have mostly dropped prematurely; those left are good-sized fruits. Pears very thin, and in same condition as Apples, our best trees being Nouvelle Fulvie, Beurré Diel, Beurré Capiaumont, Williams' Bon Chrétien (very good), Beurré d'Amanlis, Ne Plus Meuris, and Louise Bonne of Jersey, the latter very good on all aspects and on pyramids in the open; Marie Louise and Glou Morceau also. The best Plums are Coe's Golden Drop, Rivers' Prolific, and Kirke's Victoria. *G. Wythes, Syon House, Brentford.*

SURREY.—Never was the fruit prospect so good as this year, every twig well studded with good flower buds, which opened well, and set freely, Pears, Apples, Plums, and Cherries alike. The storms of snow, hail, and sleet, which fell on the eve of Whitsuntide, spoilt all this fine show. The snow lay on the ground to the depth of 4 inches, with eighteen degrees of frost in the morning, and every fruit was cased in ice; even then there was a large percentage of late bloom to open, but owing to the often sudden low temperature through June, which checked the sap, it has caused a severe thinning of the fruit. Peaches and Nectarines are good and clean, but, like other things, are late. Apples promise to be of good quality, although thin. Pears are better than for some years. Red and White Currants are good crops but have short racemes. Blacks are a very thin crop, the worst I have had for twelve years. Strawberries are a heavy and fine crop. Raspberries also promise to yield a good return; we have only just begun picking. *A. Evans, Lythe Hill, Haslemere.*

— The fruit crops of the present year are, with the exception of the Gage varieties of Plums, remarkably prolific, and of excellent quality. Strawberries have suffered somewhat from the heavy rainfall. *James Gold, High Ashurst, Dorking.*

KENT (see ante, p. 104).—Apples may be considered an average crop, but many trees are fruitless; the blossom was very abundant. Cherries bloomed well, but many orchards very short of fruit. Plums bloomed and set very well; crop good. Aphid very abundant, and especially damaging to Plum and Cherry trees. Peaches on walls much curled in leaf, and not looking very satisfactory at present date—much wood killed by frost. Figs killed back, and not likely to bear crop this season in many places. On the whole the crop of fruit not up to the expectation formed from the abundant blossom. Caterpillars have done very much less harm this season than in two previous ones; orchard here quite clear of them. *G. A. Don, Bedgebury Park, Hawkhurst.*

SUSSEX.—The spring was cold and late; the result was, that the blossom did not open till late, and but little frost came afterwards, and now we have in this part of Sussex a magnificent crop of fruit of all kinds, such as we have not had for years. The gardens here are 400 feet altitude, so that we escape many of the late spring frosts, and I do not prune small fruit bushes so much as one generally sees, with the best possible results. I also am a great advocate for bees being kept in gardens; they help to set the blossom. *Joseph Rust, Eridge Castle.*

— Apples and Pears are much cleaner grown this year than usual, and some Pear trees have had to have their fruit thinned considerably, whilst others have only just a crop. In small fruits the late frosts ruined the crops of Black Currants, but reds and whites are about average. *Alexander Reid, jun., Possingworth, Cross-in-Hand.*

HAMPSHIRE.—Trees of all kinds bloomed very freely. It was thought though that the 7° frost experienced here on May 17th would have utterly ruined the crops, but the amount of leafage which the trees had on them no doubt protected the fruits somewhat. All kinds now look healthy, Pears on walls especially so; and with the exception of a few aphid the trees are clean. The early blooms of the Strawberry plants were all spoilt by the frost in question, which has retarded the crop and lessened the price obtained by the market growers in the neighbourhood, of which there are many. *E. Molyneux, Swanmore Park, Bishops Waltham.*

— Generally speaking, the fruit crop about here is not so bad as in past years. Apples, although under the average, are very much better than they were in 1889 and 1890; Pears are much under the average. *Geo. Rea, Heron Court, Christchurch.*

BERKSHIRE.—All kinds of fruit are much more plentiful and good about this neighbourhood than for many years past. Apples are the thinnest crop, so many having fallen off after the frost on May 17. *Jas. Tegg, Bearwood, Wokingham.*

BERKSHIRE.—Apples in this district will be good both in gardens and orchards. Plums in abundance on walls and standards. *J. Rose, Lockinge, Wantage.*

I have put the Apple at two-thirds of a crop in this neighbourhood, and a great proportion of trees in my survey are without any fruit upon them. Pears in the same condition. Plums are simply an enormous crop; but Damsons are very capricious, some bearing enormously, whilst others alongside have none. Cherries, wherever I have seen them, are bearing heavy crops, but the fruits are small. Peaches, Nectarines, and Apricots bear off the palm this season. Small fruits, taking them altogether, will be a good average; mine are all extraordinarily good, though none of them run large, which I consider to be in their favour. My Grapes will be late, and my unprotected Figs will present me with a few dishes. My Wellingtons or Dumelow's Seedling fail to crop this year, but the foliage is very healthy. *Robert Fenn, Sulhamstead Abbots, Reading.*

Apples, which promised well, have, with a few exceptions, dropped too many of their fruits, some trees becoming almost bare. Wellingtons and Blenheims, which last year had very heavy crops, are thin this season. Pears abundant; Plums in profusion. Cherries a good crop, but attacked with black fly a good deal early in the season. Peaches and Nectarines rather irregular; better on an east than on a south wall. Waterloo, Amsden's June and Alexander Peaches will be ripe by the end of July. Gooseberries abundant and of good quality. Currants and Raspberries good. Strawberries good; Jubilee and Eleanor prolong the season better than other late kinds with us. *George Stanton, Park Place, Henley-on-Thames.*

WILTSHIRE.—I presume an examination of the reports of the Apple and Pear crops in the southern and western counties for the present year will show a good average. The situation here being low and close to the water, we suffer much from late spring frosts, which this year extended into June, to the detriment of many crops. However, although our Apple and Pear crops are below average, we have a pretty fair crop on the whole. Some trees of Early Juneating, Early Nonpareil, and the always sure-cropping variety, Keswick Codlin, and several local Apples are heavily cropped, espalier-trained; while in our orchard, some large trees of Blenheim Orange are fairly well cropped. Green Gage Plums in every position, including trees which were not protected while in flower, as well as those which were, are immense crops, the trees being in fine condition. Peach, Nectarine, and Apricot trees had to be severely thinned of their fruit, so thickly did they set. Small fruits and Strawberries are immensely heavy crops, the weight of fruit bringing Gooseberry bushes to the ground. *H. W. Ward, Longford Castle, Salisbury.*

DORSETSHIRE.—All varieties of Pears here have done remarkably well; Apples had a promise of doing the same, but some varieties have suffered from late frosts. Apricots are quite exceptionally good for this district. *T. H. Crisp, Canford Manor Gardens, Wimborne.*

SOUTH-WESTERN COUNTIES.

DEVONSHIRE.—All fruits named on the accompanying list are a full average. Stone fruits, excepting Cherries, are all a most promising crop, and much above average. Apples and Pears of the best kinds are not so good as the promise of the spring-time; nevertheless, I think they will yet prove an average crop. *James Enstone, Wear, near Exeter.*

Apples abundant blossom; did not set well; caterpillars destroyed nearly all the rest. Some trees in orchards loaded with fruit, but a large number with not an Apple on them. Strawberries: early blossoms killed by frost, but Noble on an early border escaped, having set its fruit. I have gathered fruits of this variety 1 oz. in weight. *G. J. Barnes, Stoodleigh Court, Tiverton.*

Our fruit prospects early in the season were

most promising—all trees covered with blossom. The Strawberry blossom suffered from frost; the first flowers opened strong, to be cut off by 6° of frost—consequently we lost the best fruit. Apples are still more disappointing, a splendid bloom, and to all appearance good. The blossom remained on so long as to give us confidence of a crop, and now we find quite a tenth of the trees with no fruit at all on them, and the trees are suffering from canker. In gardens and orchards the crops and trees are much the same. *Geo. Baker, Membrand.*

CORNWALL.—The fruit crops in this district were very much injured by the frost on the 17th May, when 5° was registered. Apples are reduced to a very scanty crop. Pears are better, especially on the walls. Raspberries are thin and small; many canes were completely killed. Gooseberries and wall Plums, that were of good size and healthy, withstood it, and these fruits are very plentiful. The Red Currants are hardier than the others, and the frost did them no harm. Damsons and Plums on standards have nearly all dropped. To a close observer of fruit that has been injured by cold, it is interesting to see how each individual fruit has its peculiar deformity. Some are cracked in various forms, others with only a horizontal crack on the face; some are completely coated with rust, others partially so; some have large black spots on them which become rotten if the weather continues wet. When fine growing weather sets in they seem to struggle for existence; some very soon succumb, others become turgid and linger on, ultimately dropping. *C. Lee, Boconnoc, Cornwall.*

WALES.

GLAMORGANSHIRE.—The fruit crop in this district is above the average. Plums are carrying heavy crops, especially the varieties Victoria, Green Gage, and Washington. Strawberries have also been very prolific, President, Vicomtesse, and Noble being the varieties chiefly grown in this district. After a remarkable promise of fruit, the Apple crop will be much lighter than we expected, great quantities having fallen off. Nevertheless, the following varieties are carrying heavy crops:—Blenheim Orange, Lord Sutfield, Lord Grosvenor, Early Margaret, Wellington, Tom Put, Cox's Orange Pippin, and Hawthornden. All kinds of small fruits are plentiful and very good. *R. Mulner, Penrice Castle, Swansea.*

Pembrokeshire.—Apples in this district are almost a total failure. On May 19, when the trees were in full bloom (and splendid bloom it was), we had 7° of frost, followed by showers of hail and sleet, and high winds, with sharp hoar frosts, which had the effect of making this the most disastrous season for fruit ever experienced in this county. The only variety of which we have a crop is King of the Pippins and a partial crop of Keswick Codlin and Hawthornden. The above remarks apply to orchards. Trees on walls are with us fairly well-cropped. Pears and Plums were also very much damaged. *Geo. Griffin, Slebeek Park.*

IRELAND.

KILKENNY.—On fruit trees in general we had an abundance of blossom, but owing to the late frosts and heavy hail-showers experienced during the flowering period, Apples and Pears set badly, and are a light crop. Small fruits in general are plentiful, but about a fortnight later than the average of seasons. *William Gray, Woodstock, Inistioge, Kilkenny.*

CHANNEL ISLANDS.

JESEY.—The fruit crops, taken as a whole, are fair this season. Apples are but a partial crop; some of the early-flowering varieties show no evidence of fruit-bearing. The same remarks apply to Pears, the late varieties being most abundant. Plums and Cherries are abundant crops, although the climate and soil are not congenial to the growth of these fruits, being too moist. Peaches are a good crop, especially the later kinds. Nectarines are not so

abundant, and Apricots are comparatively scarce. Small fruits are neither so fine or so abundant as usual. Strawberries have been larger and in greater abundance than usual. Nuts are not grown, owing to the cause that applies to Plums and Cherries: the moisture of the climate induces growth, and not fruitfulness. *Chas. B. Saunders, St. Saviour's, Jersey.*

PEAS AT CHISWICK.

THE trial of Peas, which has already received adequate attention from the Fruit and Vegetable Committee, shows that in spite of the wonderful variety of Peas in existence, raisers still have faith in their capacity to produce better ones, or else believe that there is room to obtain Peas of higher quality. It may be after all a moot point whether we shall ever in Wrinkled Marrows attain to a higher excellence than some of our older Marrows gave. It may be, too, that to some consumers these exhibited too much of sugar and not enough of flavour; but, at least, myriads of our later-raised Peas have given neither sugar nor flavour, but simply size and abundance. It is true that the later-raised race of Peas do excel all others perhaps in prolificacy: we have them now so productive that it seems hardly possible to excel in that respect. Generally, if the pods are not too long, at least in many, the Peas are too large, and too hard and flavourless. No such Peas now should ever receive any award of merit. We want a rather dwarfier race generally, and especially we want more quality in our first early sorts. Not only in fact are these of indifferent quality, but they are poor podders and croppers. That there is hope of some improvement in the desired direction, some of the newer ones this year on trial at Chiswick show. A first early, really as early as is First Crop, Sangster's No. 1, Eclipse, or others having the height, cropping qualities, wrinkled peas, and general excellence found in Triumph, would indeed be an immense gain, and I do not see why it should not be eventually produced. It would have been more interesting at Chiswick could space have permitted many of the old sorts to have been grown also for comparison, but the members of the Fruit Committee are presumed to know all about Peas when they go to Chiswick. In any case, there exists the most anxious desire to do justice to all.

Sutton's Bountiful, somewhat like, but rather better than Harrison's Ameer, showed undoubted advance in size of pod as an early Pea, and a good type of what should now be set up as a standard, as the very small podded whites of the Sangster's No. 1 type hardly merit recognition. If Sutton's Bountiful, which is really a much finer and better Pea, should prove to be as early as Sangster's No. 1, a great gain will be found. There is one great thing to be said in respect to the Pea trials at Chiswick. It is that they are conducted without trade bias. Whenever a private trial ground is looked over where the firm has specialties or novelties of their own, somehow it always happens that the best doers are almost always of the firm's varieties, and thus some sort of suspicion is bred that all is not quite correct. At Chiswick, at any rate, we see every variety grown absolutely on its merits, and void of all trade preference. The committee examine the sorts free from all interference from interested people, and all exactly as their unbiassed judgments dictate. Of other varieties which met with full approval here, Duke of Albany and Telephone, older sorts; Eckford Essential, a tall and very fine Pea, already in commerce; Critic, of the Ne Plus Ultra type, tallish, and having fine green pods; Alderman, 6 feet, a great cropper; Chelsonian, also of the Ne Plus Ultra style, a very fine cropper, and of good quality; Marquis, another 6 feet Pea, but a grand cropper; Daisy, a capital 2 feet Pea; and the Echo, a really fine cropping dwarf Pea, standing about 2½ feet high, and full of capital pods, with Peas of excellent quality; Early Marrowfat, very dwarf; Optimum and Sutton's A 1, very early, but carrying single pods on the stems, only had two marks each. Some

of the points which threw otherwise fine-looking Peas were as follows:—Pods and Peas too pale in colour, presenting undoubted objectionable features in market sales. Want of flavour and rather hard Peas—a too common feature, and one which serves to properly discount more new Peas than any other.

We really do not want any Peas of indifferent quality, let their other merits be ever so great. As matters stand at present, it is not easy to set up a very high ideal at Chiswick, because the committee come to their task of awarding Certificates of Merit to Peas without first determining on what principles awards should be based. It would be well if some recognised high standard were set up, and that no Certificates of Merit should henceforth be awarded to anything which did not reach pretty closely to that standard. It cannot be doubted but that these awards carry with them a certain trade value. The Certificate of the Fruit Committee is equivalent to a trade mark. It is a stamp of excellence, and has its weight with the public; but when we have of all sorts of Vegetables, and Peas especially, such exceeding abundance, and of such general excellence, according to the old standards, it is time that a higher degree of excellence was looked for. We want fewer of very tall Peas, and if 4 feet were made the standard for tall ones, dwarfier ones being judged solely according to crop carried, we should do something to get rid of those ambitious sorts which seem anxious to touch the clouds, and need very costly stakes to support them. We have too many Peas of the curved-pod type, and want straighter-podded forms; these latter always open well, whilst the former are far too commonly puff-podded, and open badly. We want a rich, natural green colour in Peas more largely also, and we do not want large Peas, but rather long pods, straight, green, and handsome, well filled with quite medium-sized Peas, sweet, soft, and pleasantly flavoured. We have very abundant croppers already, but in new varieties, even with the best of flavour, good cropping would be an indispensable feature. In first early kinds, improved quality is sadly needed, and should be rigidly insisted upon. After all, during the past twenty years we have made very little progress in the production of really good first early varieties. *A. D.*

FLORISTS' FLOWERS.

BORDER PINKS.

On the occasion of the recent meeting of the Royal Horticultural Society at Chiswick, the Floral Committee inspected a collection of border Pinks, which Mr. Barron had secured. The inspection was done after the heavy rains and wind of the day before had disfigured the flowers. Still, the Committee were able to form a tolerably approximate estimate of their value as border flowers, and three marks, which is the Chiswick equivalent to an award of merit, were put to the following, viz.:—Mrs. Dark, one of the florists' laced varieties, of compact, robust growth, and very free blooming, the medium-sized well-formed flowers having dark lacings on the petal-margins; the calyx of this variety does not split quite so much as other laced varieties, and it is in all respects admirable for cutting from. Her Majesty, a large white variety, of robust growth, and very free, said to be a seedling from Mrs. Sinkias, but with the conspicuous fault of that variety of bursting its calyx badly. Beauty of Bath, said to have been sent as a white variety, but the flowers are of a pale pinkish-purple colour, with a dark centre; small well formed, very freely produced on vigorous-growing plants of compact habit. These came from Mr. F. Hooper, Widcome Hill Nursery, Bath. To Modesty, a very pretty, medium-sized, laced variety of the florists' section, white-laced, with pale rose; a capital grower, very fine and early, and good for cutting. This came from Mr. C. Turner, Slough. To white Pink Mrs. Lakin, pure in colour, with edges a little fimbriated, and slightly dark centre; a hardy, vigorous and free grower. On account of its purity

of colour, and not being much given to bursting its calyx, it is likely to become popular for cutting from. This came from Mr. J. Lakin, Temple Cowley, Oxford, who raised it from a laced variety; and to two Bedford-raised seedlings, sent by Mr. R. Dean, Ranelagh Road, Ealing; one named Charmer, having small, compact white flowers, with dark centre, and somewhat fimbriated on the edges; and Hetty Dean, bright rosy-purple, with dark centre, both of very dwarf, compact habit, and singularly free of bloom. It may be said of the two last, they are little given to split the calyx. *R. D.*

ANEMONES AND RANUNCULUSES.

These thrive in a cool moist season, and produce larger flowers than in a hot dry one, when the leaves soon become yellow, sometimes before the flowers generally and fully expand. Ranunculus roots will be ready to dig up before those of the Anemones, although the latter flowered first, and both should be taken up as soon as their leaves have turned of a yellow tinge; for if the tubers are left in the ground after this point is reached, they will start again, and be much injured. Spread out and dry the tubers in an airy room, not scorching in the sun. I may add that the dry tubers of both were frozen hard last winter, and were not injured. If seed is being saved of either, the bulbs cannot, of course, be lifted until it is ripe; but in this case, the tubers will not start to grow, as would be the case with non-seeders. *Jas. Douglas, Great Gearies.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

STRAWBERRIES.—Plantations that have cropped heavily for three or four years are seldom profitable enough to retain, unless the soil is deep and in good heart, when, if the routine pursued has been good, they will stand in fair condition some few years longer. The better practice, however, is to plant yearly in sufficient quantity to keep up the necessary beds, and destroy an equal area of old ones. Before planting trench the land some few weeks previously, so as to allow of its settling, as the plant does best on soil that is firm. If trenched in winter, and cropped with early Potatoes, all that will now be required is cleaning and levelling, and if light, trampling it firmly before planting. If plenty of rich rotten manure is put at the bottom of the trenches, the subsoil need not be brought to the top, and should not if it be of a poor character. Ground which has been prepared, and is waiting for the plants, should be hoed and made moderately fine on the surface. As soon as the runners have plenty of roots, remove them from the parent plants carefully, and plant without delay, putting some fine soil about the roots, and pressing the soil tightly about them. For the first year these plants may stand at 12 inches apart, each alternate one being removed after one year's fruiting. To secure good results the first year after planting, the runners must be got out as early as possible.

PLUMS AND DAMSONS.—In many orchards these trees are bearing heavily, especially Denyer's Victoria Plum, and the Farleigh Prolific Damson, and supports of some kind must be afforded the trees if the branches are not to break down. If the trees are not too high, a good way to support them is one that is much practised hereabouts: the number of branches on a tree is first counted, then as many pieces of string are fastened to the end of a pole, which is a little higher than the tree; the pointed end of this pole is then sunk into the soil close to the stem of the tree, and fastened to it, the strings are then attached to each branch and slightly drawn upwards; secured in this manner the branches seldom get broken. Plums on walls should have the young wood shortened back, and enough laid in all over the tree to bear fruit in two years' time. It is from this two-year-old wood that the finest fruits are produced.

BUDDING.—This operation should be pushed forward—the bark of Peaches, Plums, Cherries, Pears, Apples, Quinces, Medlars “running” well. Those who are capable of budding Roses successfully can bud fruit trees, but care ought to be taken to employ suitable stocks in vigorous health. The grafts put on in the spring will now stand in need

of support, which is best afforded by fastening them loosely to thin sticks stuck into the ground near the stocks. *H. Markham, Mereworth Castle, Maidstone.*

FRUITS UNDER GLASS.

POTTING STRAWBERRY LAYERS.—Many of the earlier layered runners will be in a fit state to pot if these have been detached from the plants about one week and placed on the north side of a wall or otherwise shaded, and syringed several times daily to prevent their flagging. Pots and soil should be got in readiness, so that no delay will occur when the job is started. Stand the plants when potted, where they will stand whilst growing, and choose a hard coal-ash bottom to stand them on, and afford them ample space for growth. Endeavour as far as possible to secure plants with one crown, but this is difficult with some early varieties, which commonly have divided crowns which give only small fruits, although even these may be reduced in number. When potted, Strawberry plants are often stood at the sides of gravel walks with nothing under them to prevent the ingress of worms, and much mischief is done—a strip of wood or slate should be put under the pots. Firm potting should be the rule, and the watering carefully done, affording clear water only till the new roots get round the sides of the pots; damp them over slightly in the evening when the days are sunny, and cut off all runners as fast as they show. Prepare for the next season's supply by planting runners when ready, on trenched, and well-manured ground. I plant in rows 2 feet apart, and 12 inches apart in the rows, and cut out each alternate plant when the runners have been secured the following season. It is advisable if ground can be spared for the purpose, to plant a few more rows than are really wanted, as these plants will lift readily in March, and if fruit be scarce, they may be forced gently in ordinary cold frames.

FIGS.—The earliest crop of Figs is now finished, but the trees will continue to fruit if they are allowed to do so, but this will be at the cost of next season's early crop, so that it is better economy to stop the formation of fruit, and ripen the wood by free exposure to the air, all useless wood being cut out to let light into the trees. If the Figs are in pots or tubs, remove them to a sunny border and plunge the pots. Figs in borders indoors must not suffer for want of water and manure-water. I find that a top-dressing of fresh cow-manure at this date is of great benefit to the trees in the early house. The syringe must be plied vigorously, so as to maintain healthy foliage; and, if scale be troublesome, sponge the leaves with soft-soap and water, and use a brush to get at the insects in the crevices of the bark. Trees having ripe fruit hanging on them will now require more ventilation and less moisture in the air. Late Figs should not want for water, or stimulants to growth; the shoots should be thinned out, and a mulch of manure put on the root.

CUCUMBERS.—It is now time to prepare for winter Cucumbers, and seeds of Syon House and Telegraph should be sown in small pots, and grown sturdily and free from all insects, shifting them into 6-inch pots if the house is not ready for them; pot-bound plants often split at the base of the stem, and fall a prey to canker. This lot of plants is generally more difficult to manage than those which are grown in the warmer season, so that every care should be afforded them from the beginning. For winter Cucumbers it is better to have the plants in pots; and if beds of soil are used, they should not be wide or deep. Plants may still be planted for late supply, and these may be fruited heavily; not so the winter fruited, which should be encouraged to grow and cover the trellis with bine. I would here remark on the prudence of thoroughly cleaning the winter Cucumber-house before putting a plant into it.

ORCHARD-HOUSE.—Trees in pots should be abundantly supplied with liquid manure, a sharp watch being kept for red-spider. Syringe the trees heavily when the last fruits are gathered, and add flowers of sulphur or soft-soap to the water used, if spider is present. Some of the early fruiting trees may be removed to sunny positions out-of-doors, and the pots plunged in coal-ashes or soil, with a bit of tile or slate under the hole in the pot-bottom. Cut out all weak shoots, or such as have borne fruits. *G. Wythes, Syon House, Brentford.*

THE KITCHEN GARDEN.

SOWING CABBAGE SEEDS.—A piece of ground should be prepared for sowing forthwith Cabbage seed for the main crop of Cabbages for next year in

late parts of the country; but for the generally warmer south the second week in August will be soon enough. I make two sowings, one on or about August 5 and another about the 19th, the latter answering my purpose better than the first, the garden being a warm one. If good seed be obtained there will be less fear of the Cabbages bolting; not less than four varieties should be grown, and those which I would recommend for trial by those growers who may not be acquainted with the varieties, are Sutton's Flower of Spring, Earliest, and All Heart. I trust to these varieties and find them to be the best that I can grow here, although they are not recommended by Messrs. Sutton & Sons for sowing at this season. Not half a dozen of any of these varieties bolted this season. The first two may be planted 12 inches apart, but All Heart should be allowed 18 inches. Ellam's Early and Mein's No. 1 are excellent Cabbages, and may be planted quite as close together as the first two above named.

Sow the seeds thinly in shallow drills, made 9 inches apart, on well-tilled beds, and cover lightly. Label each variety, and it is advisable to make a note of the order of sowing in case the labels should get removed; put a net over the bed to protect the seeds from the birds, or, in lieu of nets, cotton thread may be twined over them.

A bed of the Red Cabbage should be sown at the same time. Dwarf Blood Red is an excellent one, of dwarf and compact habit, and the earliest Red Cabbage that has come under my notice.

ENDIVES.—Sowings should again be made of the round-leaved Batavian, Incomparable Green, and moss-curl varieties. Heavy soils are not suitable for growing Endive for winter, and the plants are liable to turn out badly; but the land may, nevertheless, be made suitable. An open situation should be chosen, and a shallow hole of the size of the bed dug out, some kind of a foundation of rough garden rubbish put into it to act as drainage, and over this place sandy soil 1 to 2 feet thick, which will form a bed for the plants, raised somewhat above the general level of the garden. Such a bed will cost but little, and if it be annually manured, and dug over as occasion requires, it would supply good Endive in winter, and salads, &c., in summer. Where the staple is of a light and dry nature, no such bed is needed. Sow the seeds very thinly in shallow drills made at 15 inches apart, and if the weather be warm and dry, water the drills before sowing. Thin out the plants as soon as large enough to 12 or 14 inches apart, and plant the stronger thinnings on a south border, to be lifted for filling cold frames in the autumn. Endive should never suffer from drought, and it should receive occasional waterings with liquid manure.

LETTUCE.—More seed may be sown, the produce to be transplanted into cold frames for early winter supply. Where these frames can be spared at this season, it is better to sow the seed in them, the soil being lightly forked over and made firm and level, the seed being sown thinly in drills 9 to 12 inches apart, according to the size the variety attains to. There is no necessity to make use of the lights, unless it be to protect the plants from heavy rains. Lettuces treated in this manner are better than transplanted ones, no check being given them.

SEAKALE, ETC.—The flower-heads should be cut off at the level of the ground, inattention to this operation impoverishing the plant and causing loss of crowns. Keep Asparagus beds free from weeds, and if Lettuces have been grown on beds newly-planted, clear off all the plants before they run to seed. *C. J. Waite, Glenhurst, Esher.*

THE ORCHID HOUSES.

EAST INDIA HOUSE.—Remove to a cooler house out of strong heat, Dendrobiums, when the new growth is finished, or they will break from the base, which is not of much matter early in the year, or up to midsummer, as then there is time to ripen the growth. The evergreen species, *D. thyrsiflorum* and *D. densiflorum*, I find are very apt to break if left only a day or two too long. An early vinery, after the fruit is cut, will suit these Dendrobiums very well. Many of the earliest flowering Dendrobies, as *D. heterocarpum*, *aureum*, *Findleyanum*, *nobile*, and *Wardianum*, will be those which are ready for removal. Another plant which does well and blooms freely when treated in the same manner as these Dendrobiums, is *Laelia majalis*. I failed to flower this plant for years, till I gave it a long rest and a place in the warmest house when in growth. *Vanda teres* and *V. Hookeriana* should be repotted,

if this be considered necessary, as soon as the flowers are past their best. I have previously described my method of growing both of these plants, and the position that they should occupy the whole year, excepting when in flower—that is, to stand them with the flowering Cattleyas. A small brown scale infests these species of Vandas, which if allowed to remain soon deprives them of the green colour in their leaves. Thrips are also very troublesome, and I find it necessary to fumigate with tobacco twice a week. These fumigations should not be very powerful. Ventilation needs to be well attended to or "spot" will be very likely to make its appearance on Phalenopsis; moreover, the rotting of the leaves of these plants is often brought about by a deficient circulation of air.

CATLEYAS.—Plants of *C. Trianae*, which flowered early, and whose new growth is well advanced, will now give some idea of what they are likely to be at their flowering season. *Laelia anceps*, both red and white varieties, are already showing their flowering spikes, and may be watered abundantly, and if the sphagnum moss is growing well, the young roots will ramble over and through it very fast; if the plants are suspended from the roof, they should be syringed freely in the morning—the plants getting dry again before night-time. The present comparatively quiet time allows the Orchid grower to examine his plants, and ascertain their precise condition. Woodlice, slugs, and cockroaches must be searched out nightly by the aid of a lantern; this is work which is apt to be neglected now that the evenings are so long. *A. G. Catt, Parkfield, Hallow, Worcester.*

PLANTS UNDER GLASS.

POINSETTIA PULCHERRIMA.—Young plants raised from cuttings taken early in the month of June last, should be potted into their flowering pots, and if large heads of bracts are looked for, the plants should not be stinted of rooting space. If these young plants are strong and healthy, and have made roots freely, 8-inch pots will not be too large for them. Keep them in a pit of moderate warmth, and close up to the glass, so as to prevent the plants becoming drawn, or losing their lower leaves. Plants which bore heads of flower last season and were cut back previous to starting them into growth, and partially shaken out of the soil in which they had grown, and placed in larger pots, should not carry all the shoots that are made, but these ought to be reduced to half a dozen, or fewer, or the bracts, which are the beautiful part of the head of flowers, will be small. These plants will require liquid manure afforded them regularly, and also sufficient heat to keep them growing freely. Examples which were planted out in the borders of warm houses should be frequently supplied with liquid manure.

CYCLAMENS.—Young plants which should bloom during the next winter and spring should be moved into their flowering pots without delay, and in most cases, if these are 5-inch pots, they will be found to be sufficiently large. A good compost for them consists of loam, leaf-mould, sand, and dried, decayed cow-dung, and great care must be paid to the drainage. In potting, make the soil of moderate firmness, and place the potted stock in a cool pit or frame well up to the glass, which will preserve the leaves from lengthening, and keep the frame or pit rather close for a few days, that is until fresh roots are made. Syringe the plants freely in the afternoon at closing time if the weather is sunny; and keep them quite free from red-spider and aphides, either of which, if allowed to go unchecked, will hinder growth and spoil their flowering.

PELARGONIUMS.—Any of the show varieties, which bloomed early in the season and were afterwards stood out in the open to ripen their wood, should be cut in, to within one or two buds of the point to which they were previously cut-back, standing them in a cool frame or turning them on their sides at the foot of a wall till they break. Late bloomers may now be stood out in the open, it being undesirable to allow them to bloom any longer. The present is a suitable time to put in Pelargonium cuttings which should be taken from the extremities of the shoots which have been cut from the plants that have flowered and matured. Each cutting should have about three or four joints, and if any variety be found in insufficient numbers the hard matured wood may also be utilised. Place the cuttings singly in 3-inch pots, in a compost consisting of loam, leaf-mould, and sand; standing the pots in a cold frame or in the open air, fully exposed to the sun.

The Fancy Pelargoniums will not require to be cut

in so close as the show varieties, but four joints of this season's growth should be left, or the break of the young shoots will be very indifferent.

Before cutting back any of these plants, the soil should be almost dry, as there is a great danger of the roots rotting. After the fancies are cut back they stand them in a cold frame, so as to prevent the soil becoming wet before the shoots break, the roots being very susceptible of injury from too much moisture at this stage. It will help the plants to break freely if the syringe be used lightly overhead on fine afternoons, and the frame kept close. *R. Milner, Penrice Castle, Swansea.*

THE FLOWER GARDEN.

DAHLIAS.—The single and Cactus Dahlias have been regarded for some years past as showy and suitable subjects for planting in mixed beds of good size in the flower garden, and as masses in shrubbery and other borders; and owing to the beauty, diversity and richness of their colours and their usefulness from the decorative gardener's point of view, they have in a great measure supplanted the double varieties in general esteem. The Tom Thumb section of them raised by Mr. T. W. Girdleston, and now being distributed by the Messrs. J. Cheal & Sons, Crawley, bids fair to surpass in effectiveness, utility, and easiness of production such old flower-garden plants as the Pelargonium, Calceolaria and Ageratum. There can be no doubt respecting the effect produced by planting the Tom Thumb section in masses of either separate or of two colours, planting some of the taller growing varieties in the middle of the beds, and the dwarf ones round the outside. The plants of the twelve varieties composing this section, and which doubtless will be increased as time goes on, range in height from 9 inches to 15 inches, and one (Maud) is 18 inches high. The colours, distinct, being bright and dark scarlet (Midget and Bantam), light orange (Miss Grace), deep mauve (Pearl), bright yellow (Miniature), and maroon (Bo-Peep), with flowers of 2½ inches to 4 inches in diameter. Some of the Single and Cactus varieties have foliage and blooms very useful for cutting. Foremost among these are Constance, pure white; Mrs. Hawkins, sulphur colour; Juarezii, crimson; Paragon, rich velvety maroon, with purple at the edge of each petal; Mrs. Cleveland, terracotta red, shaded with pale cerise; and Excelsior, white, with broad margin of lilac. The plants, now in full beauty in many places, must have the small shoots kept well thinned out, and the principal ones secured to the stakes. In order to secure fine blooms the plants must be kept uniformly moist at the roots, and the light let well among the shoots, and where mulching will not be objectionable, it should be done at once. I am only referring to decorative blooms, because for special purposes only a limited number of blooms should be permitted to develop, supplies of liquid manure being given at the roots to increase the size of the blooms. Earwigs are sometimes very destructive to the Dahlia, eating into the florets. A flower-pot half filled with moss, or a Bean-stalk placed among the plants, will trap them most surely, the traps being examined daily, and the insects destroyed.

BORDER CARNATIONS.—Beds of the old dark-coloured Clove Carnation have greatly benefited by the rain which fell at the beginning of the past week, and having been recently disbudded, the plants are now flowering freely. It is not yet too late in late districts to thin out the flower-buds of Carnations, the buds on either side the crown or central bud being removed, as it is necessary to take 2 inches of the flower-stem when the flowers are cut; moreover, these side buds seldom develop into passable blooms. In order to prolong the supply of Cloves as long as possible, it will be necessary to remove the crown flower-buds from some of the plants, allowing the two side ones to develop, which they will do, later. Support the stems as advised in a previous Calendar.

VASE, BOX, AND POT PLANTS.—In most flower gardens well-filled vases and specimen Pelargoniums in boxes and large pots are stood about at intervals, and contribute largely to the general effect. These should receive due attention in the matter of laying on an occasional surface-dressing of some kind of plant manure; and the watering at this season should be frequent and liberal, as the plants benefit but little from rain owing to the mass of leaves preventing any of it reaching the soil. Pinch out the points of very strong shoots, and remove decaying leaves and over-blown flowers. *H. W. Ward, Long-ford Castle, Salisbury.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY, AUG. 3. Last day of Southampton Horticultural. Northamptonshire Horticultural (two days). Beddington (near Croydon) Horticultural.

TUESDAY, AUG. 4.—Mansfield, Notts, Horticultural.

WEDNESDAY, AUG. 5.—Ancient Society of York Florists.

SALE.

FRIDAY, AUG. 7. Orchids, including some novelties, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.3.

What is a Seedling Plant? VAGUENESS in the wording of schedules is a fertile source of trouble and unpleasantness, the more to be regretted, as much of it might be prevented by previous arrangement even if purely arbitrary. In the present case, as in so many others, the vagueness arises from the fact that the word "seedling" has in daily use more than one signification. Botanically a seedling ceases to be fitly so called after the full expansion of the seed-leaves, and prior to the formation of any new leaves or shoots. So limited, the seedling stage comprises those parts, and only those parts, which were originally contained within the ripe seed. The seed-leaves, for instance, may be much larger after germination, but they are the same organs that were wrapped up within the seed. Of course there are botanical minutiae which, as in the case of most natural objects, vitiate this definition, but in natural history mathematical accuracy is unattainable, and for all practical purposes the above statement is accurate enough.

When we look upon the subject from a horticultural standpoint, we get, as usual, into a chaos of uncertainty and varied application. Some say a seedling remains a seedling so long as it has not been propagated; others so long as it has not been "let out," or put into commerce. One correspondent asks, "Is a Gloxinia raised from seed in 1888, considered a seedling in 1891? Has it not passed from the stage of seedling after the first year's growth and rest?"—

thus making one season's growth the touchstone. Another correspondent is of opinion that a plant raised from seed is always a seedling, no matter to what age it attains, as it is different from a plant grown from cuttings, layers, buds, or grafts. But if this view is to be taken, the old Oaks and Beeches in Windsor Forest are still seedling plants. Fine babies these! We should have thought they had cast their milk-teeth long ago!

The term seedling is also used by gardeners in a special sense to indicate a variety or a variation raised from seed. In such a case we say seedling for brevity sake, but it would be preferable to say always seedling variety. However these are matters of custom, concerning which people vary very much in their usage, but with a view to elicit the views of our correspondents, and in the hope of being able to formulate something more definite than we have at present, we ask, "What is a seedling?"

ORCHID BASKET PRESENTED TO H.I.M. THE EMPRESS OF GERMANY.—Never on any occasion when a foreign potentate has visited these shores has such a group of Orchids been seen as that presented at Buckingham Palace on July 10 to the Empress of Germany by Mr. F. SANDER, of St. Albans, and of which we give a supplementary illustration. It consisted of the rarest and most costly flowers in the collection at St. Albans. It was a work of artistic merit, and was so highly appreciated that the Empress ordered the basket to be taken from room to room during the remainder of her stay at Buckingham Palace. Mrs. WILLS, of the firm of WILLS & SEGAR, was deputed by Mr. SANDER to arrange the flowers, giving the final touches to what was certainly the most magnificent basket of Orchids ever presented to any royal lady visiting these realms. Among the flowers employed were numerous Cattleyas, such as Mendelii in variety, Sanderiana, chrysotoxa, Gaskelliana, Leopoldii, all cut with pseudobulbs and leaves; Oncidium crispum grandiflorum, Gardnerianum, macranthum, undulatum, Loxense; Odontoglossum crispum, Peacatorei, hystrix, Wilekanum, Harryanum, Schroderianum, vexillarium; Aerides Leonis, Sanderianum and Lawrenceanum; Cypripedium caudatum, Schroderae, Rothschildianum, Sanderianum; Epidendrum Frederici Gulelmi, vitellium majus, Wallisii; Dendrobium formosum giganteum; Cymbidiums, Thunias, Saccolabiums, Masdevallias, &c. The photograph whence our illustration was taken was executed by Mr. VERNON KAYE, of Onslow Place, South Kensington.

FATAL STORM.—The Rev. Mr. WALLACE, of Bromley, was lecturing on bee-keeping at the flower show at Lacy Green, near Aylesbury, when a flash of lightning struck the speaker and several of the by-standers, some of whom were assisting him. Three men were killed, three, including Mr. WALLACE, much injured, and others less severely hurt. It is not often a flower show has such a calamitous ending.

COUNTY COUNCILS AND BEE-KEEPING.—The Essex County Council, at their quarterly meeting at the Shire Hall, Chelmsford, on the 7th ult., recommended:—"That a sum not exceeding £500 be granted to the Joint Committee (composed of six members respectively of the County Council and the Essex Field Club), for the purchase of apparatus and diagrams, which are to be the property of the Council, and that a sum not exceeding £100 be granted to the committee for the storage and carriage of such apparatus and diagrams; that a sum not exceeding £50 be granted to the same committee, to be expended in lectures under the direction of the Essex Bee-keepers' Association; and that local committees throughout the county, especially in rural districts, be recommended to make application to the said Joint Committee, or

the Essex Agricultural Society, for aid in lecturers or teachers, obtaining apparatus or materials, the conducting of examinations, and seeking help and guidance generally." The Northamptonshire County Council has also voted the sum of £25 towards the funds of the North Hants Bee-keepers' Association, to be spent in instruction and demonstrations in bee-keeping within the county. It being an accomplished fact, that bee-keeping has been found a fitting subject for technical instruction, there is now a prospect that the art will attain such additional importance as presently to rank as a recognised British industry, and that we shall not long be behind Germany and other countries in this respect. If other councils follow suit, and the system of instruction can be made successful, it will be a means in the near future of so increasing the number of honey producers, that the large sum annually expended on imported honey may be very considerably reduced. A healthy and interesting occupation will be assured to many, if a proper system be adopted, and the necessary attention given, and one that can be worked profitably either alone or in conjunction with other undertakings in suitable localities at home. The following are the members of the Joint Committee for Technical Instruction of the County Council and the Essex Field Club. Nominated on behalf of the County Council:—Mr. E. N. Buxton, J.P.; Mr. E. A. Fitch, F.L.S.; Mr. J. H. Burrows, Mr. S. W. Squier, J.P.; Mr. F. West, and Mr. W. B. Whittingham. The Essex Field Club members are:—Professor G. S. Boulger, F.L.S., F.G.S., Professor of Botany and Zoology, City of London College; Mr. F. Chancellor, J.P.; Professor R. Meldola, F.R.S., &c., Professor of Chemistry, City Guilds Technical Institute; Sir H. E. Roscoe, M.P., LL.D., &c., one of the authors of the Technical Education Act, and Honorary Secretary to the National Association for the Promotion of Technical Education; Mr. F. W. Rudler, F.G.S., Curator of Museum of Practical Geology; and Mr. J. C. Shenstone, M.P.S., F.R.M.S.

STRAWBERRY, LAXTON'S NOBLE.—We find this novelty highly spoken of in Germany as a market fruit. In the Leipzig market it obtained the highest price this season. It is found to bear carriage for long distances with less injury than any other variety; moreover, the plant is less liable to be damaged by the hard frosts of that country, and the berries stand wet weather for longer periods without rotting or becoming spotted. It crops abundantly, and the flavour is said to be mildly vinous, and without the acidity usual with large-fruited Strawberries.

CONSETT PARK.—On Saturday, July 11 last, the town of Consett, in Durham, celebrated the opening of its new public park, which was performed by Mrs. DALE, the wife of Mr. D. DALE, the Chairman of the Board of Directors of the Consett Iron Company, who have not only presented the land, amounting to over 30 acres, to the public, but have been at the sole cost of laying it out as a park and recreation ground. This land was for many years little better than a waste, the upper part of it being a receptacle or "tip" for all kinds of rubbish and debris, and it was altogether one of the most unpromising looking places for a park. The firm of Messrs. J. Ronson & Son, Hexham, supplied the designs for the laying-out of the park, and superintended the execution of the work, besides supplying the trees and shrubs with which it is planted. One of the principal difficulties which had to be overcome was the selection of trees and shrubs which would thrive at this high elevation, and withstand the smoke and fumes from the chimneys of the Consett Iron Works, which are close at hand. The selection has been very carefully made, and has been thoroughly successful. Over 40,000 trees and shrubs have been planted. The park stretches the whole distance between Blackhill and Consett, and has an entrance at the north end of St. Aidan's Street, Blackhill, and another at the south end, for



TROPHY OF ORCHIDS.
PRESENTED TO H. I. W. THE GERMAN EMERALD
BY MESSRS. GANDER & CO.

the convenience of the inhabitants of Consett. Entering by the approach from Blackhill Railway Station, the road traverses, with many graceful curves and sweeps, the whole distance from Blackhill to Consett. It is laid with 12 inches of broken rubble, and finished with red ash. There is a wide margin of grass on each side of this and all the other roads. The whole of the land planted has been trenched from 18 inches to 2 feet deep, and a dressing of 40 tons of manure per acre was laid upon the surface and dug in, with evident benefit to the subjects planted. There are two tennis-courts and a large bowling-green in the park. *Local Paper.*

PHORMIUM TENAX.—Regarding the flower-spike of this plant exhibited at the last meeting of the Royal Horticultural Society, and which was briefly referred to in the last issue of the *Gardeners' Chronicle*, Mr. JAMES BATEMAN, F.R.S., who exhibited it, informs us that it is the only one he has ever seen in flower, either in his own most interesting garden at Worthing, or in the gardens of other people. Mr. CARRICK MOORE, to whose kindness Mr. BATEMAN owes the plant which has now flowered, says that it never flowered with him, either at Brook Farm, Cobham, or at Corswall, Wigtonshire, although his neighbour Lord STAIR has a lake near Stranraer which is fringed for miles with flowering masses of the plant. Can it be that it prefers a "whiff" of sea air?

PYRENEAN PLANTS.—Dr. BLANCHET has published a Catalogue of the Vascular Plants of South-Western France, comprising the districts of the Landes and the Basses Pyrénées. It forms a pamphlet of 172 octavo pages, and may be obtained from the Imprimerie Lasserre, Rue Gambetta, Bayonne. The catalogue is arranged according to the Flora of GRENIER and GODRON, and consists of a list of names and localities. This little work supplies a need greatly felt. There has hitherto been no good local botanical guide for visitors to the Landes and the Basses Pyrénées. Bentham's *Catalogue*, published in 1825, is long since out of print. There is, indeed, the larger work on the botany of western France by LLOYD in its latest edition. For the higher mountains, Mr. PACHE had done something in his guide-book; there were also some good local botanists, as PHILIPPE of Bagnères de Bigorre, and the MM. FROSSARD, father and son. M. BORNÈRES, the schoolmaster botanist at Gèdre, and a few others, supplied a certain amount of assistance. In the Landes there was the *Essai d'une Chloris*, by THORE, and some papers by a very zealous botanist, DARRACQ of Bayonne; but all these were incomplete, and it is only since the publication of LACOIZQUETA's two works, *Catalogo de las Plantas del Valle de Vertizcarana* (Madrid, 1885), and *Diccionario de los nombres Euskaros de las Plantas, con los Vulgares, Castellanos y Franceses y científicos Latinos* (Pamplona, 1888), for the southern side of the mountains of the Pays Basque, that any real assistance has been given to amateurs. Dr. BLANCHET does for the northern slope of the Western Pyrenees, and its adjacent plain, what LACOIZQUETA has done for part of that of Navarre. His book, too, has the advantage of being written in French, a language more generally understood than Spanish. Dr. BLANCHET's list is especially interesting, from the details given on the accidental invasion of foreign plants on ballast-heaps, &c., the way in which they spread and establish themselves, sometimes permanently, sometimes for a few years only. The Catalogue does not profess to be exhaustive. Part of the district Dr. BLANCHET has long studied; for the rest, he has made good use of the materials supplied by others. In some cases he is supplemented by LACOIZQUETA; but every amateur and botanist will be grateful to him for supplying so great a want, and supplying it so well. In the present volume we note twenty-two species of Saxifrage, eighteen of Sedum, four of Sempervivum, while under the head of Amaryllidæ eleven species of Narcissus with certain varieties are mentioned. A

note tells us that these plants, till lately, formed a special ornament of the country around Bayonne, but are rapidly being exterminated. "Elles sont depuis quelques années l'objet d'un commerce effréné, qui a pris les proportions d'un véritable vandalisme, d'une dévastation. C'est par milliers que chaque année on les expédie au-delà de La Manche, non cueillies mais arrachées sans pitié et par conséquent désormais perdues. Les pourvoyeurs font leur malheur eux-mêmes et ne le comprennent pas."

MR. A. DEAN.—In reference to the paragraph inserted in our issue for July II, concerning Mr. A. DEAN's retirement from the management of his brother's business at Bedford, Mr. RICHARD DEAN requests us to state that he still carries on his seed business at Bedford as heretofore.

FOR SALE!—Two remarkable estates are now in the market, one in a beautiful suburb of greater London, and interesting as having been for a time the residence of the late Emperor NAPOLEON—we allude to Camden Place, Chislehurst, the freehold of which is to be sold by Mr. WILLETT, 2, Sloane Gardens, and to Saltwood Castle, near Hythe. This last is remarkable for its old castle, almost an exact copy of the noble West Gate of Canterbury, and built in the fifteenth century by the same architect. It is in a beautiful country, a short distance from, and in full view of, the sea. The old castle has recently been restored, so as to adapt it for modern requirements, and the situation is so sheltered and the climate so mild, that a great scope is afforded to the landscape gardener and lover of plants. Messrs. HAMPTON & SONS, Pall Mall, are the agents for the sale.

MEADOW HAY.—M. A. CHATIN, treating in the *Comptes Rendus* of natural grass lands and the best methods of forming them, says that the following grasses should be rejected:—1, coarse-growing: *Festuca heterophylla*, *F. pratensis*, *Avena elatior*, *A. pratensis*, *Bromus erectus*, *Dactylis glomerata*; 2, species which grow too early in spring, e.g., *Anthoxanthum odoratum*, *Holcus lanatus*, *H. mollis*, *Phleum pratense*, on the other hand, which, though later in growth, is yet not dry and hard at the time of mowing. The grasses principally selected by M. CHATIN are *Avena flavescens*, *Briza media*, *Cynosurus cristatus*, *Alopecurus pratensis*, *Agrostis vulgaris*, *Festuca ovina*, *duriuscula*, and *rubra*; and though rather early, *Poa pratensis* and *P. trivialis*. To these M. CHATIN adds various Clovers, such as *repens*, *Medicago lupulina*, *Lotus corniculatus*, various species of *Galium*, which add honey-like fragrance to the hay; *Salvia pratensis*, and *Centaurea jacea*. It should be remembered that M. CHATIN's meadows are situated in the Department of Seine and Oise, but the principles of selection are the same, whatever the country or climatal characters.

"KEW BULLETIN" this month is devoted to an account of the Gold Coast Botanical Station, in charge of Mr. CROWTHER at Aburi. One of the main objects is to induce the natives to cultivate certain plants of economic value, and not confine themselves to the mere collection of wild products, which are showing signs of exhaustion. Aburi, it appears, is at an altitude of 1400 feet, and the shade temperature does not exceed 88°, with a rainfall of 60 inches. Speaking of the Bahamas, the *Bulletin* notes the great importance of the plantations of the so-called Sisal Hemp or Agave rigida, var. *Sisalana*. Jaborandi (*Pilocarpus pennatifolius*), a drug used in medicine as a diaphoretic, &c., has been found in Paraguay, as well as in Brazil, but the southern variety is found to be less effective.

POTATO EXPERIMENTS.—The Royal Agricultural Society is carrying out in six separate districts of the country experiments on plots, each 3 acres in extent, with sulphate of copper. One acre is to be treated early, to prevent the disease if possible; 1 acre later on, when the disease has become apparent; and 1 acre to be untreated. We are heartily

glad to see some steps at length taken in the matter. For the sake of the farmer, we trust the Royal Agricultural Society may have the same experience as the Royal Horticultural Society, a committee of which for two or three years undertook trials of various kinds, and prepared elaborate records, but the amount of disease which appeared was so small that the experiments were relatively valueless. An impromptu experiment in a subsequent year, however, proved most instructive. We perceive some of our contemporaries are blaming the Royal Horticultural Society for not taking up the subject; but it must be remembered that the Royal Agricultural Society can effect this matter much more readily and extensively, having a paid consulting botanist to direct and overlook the experiments, and a sum of £300 allowed towards the expenses. The former experiments at Chiswick involved a severe tax on the time and labours of the working members of the committee, who did not even receive the thanks of the Society for their labour. We regret to record the appearance of the disease at Chiswick and elsewhere, but so far not to a great extent.

A CLIMBING ROSE.—One of the most beautiful of climbers, says *Garden and Forest*, is the so-called Prairie Rose (*Rosa setigera*), which is now covered with flowers after the general Rose display is over. This plant is much more beautiful than the double varieties. It is a free grower, and will cover easily a hundred square feet of trellis with its bold healthy foliage, which is as clean and free from fungi and insects as that of *Rosa rugosa*. The large rose-coloured flowers, with conspicuous clusters of yellow stamens, come in corymbs, and keep opening one after another for several days.

ILLUSTRATIONS OF THE FLORA OF JAPAN.—This consists of a series of lithographic plates illustrative of interesting Japanese plants. In the numbers before us several species of *Goodyera* are figured. The figures are so accurately drawn that they will be very serviceable to botanists. The work is published by Mr. TOMITARO MAKINO. The text is in Japanese, but the names are fortunately repeated in Latin.

THE SOCIETY OF AMERICAN FLORISTS is to hold high festival at Toronto from August 18 to 20, and will, in all probability, be attended by large numbers of the horticultural trade in Canada and the States. All the "live men in the trade" will be there, says the *American Florist*, "and they are the men who are quick to discern merit in anything that really possesses it." True enough, from the point of view of trade and fashion.

CARBONATE OF COPPER FOR THE TOMATO FUNGUS.—Professor BAILEY recommends a mixture thus composed:—Dissolve three ounces carbonate of copper in a quart of liquid ammonia; of this, two fluid ounces are mixed with two gallons (a pail) of water when required.

INSECTS AND FUNGI.—We are glad to see that in the *Journal of the Royal Agricultural Society*, dated June 30, is a useful summary as to the best methods of prevention of these pests from Mr. WHITEHEAD. It is a cause in which the more recruits the better.

CHICAGO EXHIBITION.—This promises to be a "big thing." It is to be held in Jackson Park, an area of 586 acres on the banks of Lake Michigan; over 100 acres of this space will be roofed over! The space allotted to horticulture is 6 acres, that to agriculture 15 acres. So Protectionist a nation as the United States can hardly expect, it would be thought, to induce many foreign exhibitors to present themselves or their goods.

ROTHAMSTED LECTURES.—One of the provisions of the Lawes Agricultural Trust, is that a course of lectures shall be given in the United States on the Rothamsted experiments. At the next annual meeting of the Association of American Agricultural Colleges and Experiment Stations,

Mr. ROBERT WARINGTON will deliver six lectures. The first lecture, to be illustrated by magic-lantern slides, will be "On the Rothamsted Station."

THE WINTER.—At the high tide of summer we are apt to forget what the winter was like. It may, however, be useful to record that whilst the average of foggy days in London during winter is twenty-five days, in the winter of 1890-91 we had no fewer than fifty. The rainfall was also less than half the average.

"LES ANTHURIUM."—M. E. BERGMAN has published a second edition of his list of species of Anthurium, comprising no fewer than 180 species and varieties, and has added directions as to their culture.

CATTLEYA BRYMERIANA.—We are informed that the statement that *Cattleya Brymeriana* is flowering for the first time in Belgium in the establishment of M. Peeters, is inaccurate, inasmuch as the species in question flowered at the Horticulture Internationale for the first time in 1877, and has since continued to bloom there every year.

HOME CORRESPONDENCE.

TRANSPLANTING EVERGREENS.—After the experiences of last winter, few planters will defer the removal of evergreens till September and October. It will be more prudent to start operations in August, choosing, if possible, a showery time. The great thing to be particular about is to dig them up and replant again quickly, and to do this it is necessary to have men used to the work, and well directed, and to get the holes dug out before lifting any shrub, that it may go at once to its place, and have its roots covered up. Before the final filling is done, it is important to afford water in quantity, and with such force as to flood the hole, and fill in with soil every crevice about the roots, which will almost insure the plants living. It is also of great assistance to the plants, whenever the weather is dry, to syringe the foliage night and morning, using, if possible, the garden engine, or a hose. To be successful in transplanting at this season, it is hardly necessary to say that the evergreens must be on the spot, and not have to come from a distance. If the planting cannot be carried out during August and September, it is better to wait till April, when most evergreens can be removed with safety; but if the young growths are hard, and weather favourable, early autumn is the time, and the finishing up can be carried out in the spring. J. S.

LABELS FOR GARDEN PLANTS.—Reference to the label question on two occasions lately in the *Gardeners' Chronicle* induces me to say that in my opinion there is no label for use out-of-doors that approaches in efficiency those made of zinc and properly written upon, when it is necessary to consider the combined qualities of durability, cheapness, and such a degree of conspicuousness or inconspicuousness that they are neither obtusive nor difficult to find and read when wanted. Labels come and labels go, in various forms, but when the above qualities are in question, zinc labels have long reigned, do reign, and probably will reign for a long time to come. I send you an example that has been in use all but ten years (the date is on the back), and which is not a selected specimen, but one that chances to be out of use by the felling of a tree. According to all appearance, it would, I think, be as good practically in ten years' time as now. [The writing as legible as the day it was written. Ed.] For the mere preservation of names zinc labels are not easily surpassed for use under glass, though it is difficult, more especially in warm houses, to keep the surface of the label in clean condition. At the same time, the worst label that could be found, among those that have been properly treated, could be read easily by any one familiar with plant names. The want of a fixture to the ground would be a fatal objection, in almost all gardens, to the labelling mentioned by "F. O." In some gardens useful results might be got by numbering in correspondence with a book of entries, say by impressed numbers on zinc supported on wire. By the way, I have heard that plants, even in old times at Kew, were once numbered to prevent "theft" of the names. An old Kew hand used to tell me of a time when it was

regarded as stealing to take the name of a plant. What foundation was there for this in fact? R. Irwin Lynch.

CELOSIA PYRAMIDALIS.—I have a bed of these graceful plants in these gardens which everyone who sees them greatly admires. I had my doubts about their suitability for bedding, and kept a number of *Begonias* in reserve in case they should turn out a failure, but they have done so well that I shall not fear failure again. The weather was not the most favourable when they were planted out. They are in the centre of the lawn and fully exposed to the sun. I sowed a packet of Veitch's mixed seed in a pan of sandy soil on January 21st, the colours being from the brightest red to golden yellow. The pan I plunged into a hotbed, pricked off the seedlings three weeks later, four into a small 60, and plunged them as before, potting them off singly about the middle of the month of March, still keeping them in the same hotbed. Their final shift into 48-pots was afforded them in the third week in the next month, when I then placed them on a shelf in a warm greenhouse, and gradually hardened them off, planting the bed in the first week in June. They are now by far the most conspicuous bed in the garden. I have also some very fine specimens of the same in pots, which look beautiful in the conservatory. I kept the plants well syringed all the time that they were under glass, which I think is one of their chief requirements. W. Perry, Higham House Gardens, Colchester.

GRAPES SCALDING AND CRACKING.—Mr. Sheppard's remarks on the above subject contain much that is true, but, as in all other things, circumstances alter cases. I have this year proved fully that the sun does scald the berries even when all other conditions such as heat and ventilation are attended to both night and day, and the internal warmth kept as near to the desired point as possible. For several years we have been much troubled with scalded berries on a Madresfield Court Vine which is in a late vinery, and this in spite of all precautions. The vinery is a high lean - to facing south, the end of which is due east and exposed to that quarter thoroughly, except by the garden wall close by, but which is not a high one. During the month of June the sun shines with great force on that end of the vinery early in the morning, and gradually overtops the garden wall, and at certain times strikes right through the vinery from the end; the bunches of Madresfield Court receive the full glare from the point referred to, and we have had whole bunches on the side facing the end of the house spoilt by scalding. At the opposite end of the same house, which is 30 feet long, is a Vine of Lady Downes, which in some seasons has had its berries badly scalded. This year it occurred to me to shade the east end of the vinery during the critical period with lime, which was thickly laid on the glass a few squares deep, sufficiently so to prevent the sun shining direct on to the berries of either Vine, with the result that not a berry of Madresfield Court is scalded, and only about one-third of those of Lady Downes' Seedling. This, I conclude, is a case where the direct sun's rays do scald the berries irrespective of atmospheric conditions, which I have no doubt have been the proper ones. I am well aware that Madresfield Court is a very thin-skinned Grape, and it is subject to the evils of being readily scalded, and of splitting. The next Vine to the Madresfield Court red is a Black Hamburg, upon which I have never observed any signs of scalding. The best means to adopt to prevent the berries of Madresfield Court splitting is only to pay strict attention to the roots and maintain a buoyant atmosphere in the vinery by means of artificial heat in the case of dull weather and to allow a free, but not crowded extension of laterals on the first signs of colouring. Since adopting this system I have not been troubled with the berries splitting at all. S.

CHRYSANTHEMUMS SHOWING FOR BLOOM.—Plants which are grown for large blooms sometimes form flower-buds during the month of July, which are known amongst growers as July buds, and are considered to be freaks, and in nearly all cases they are useless. One variety only do I know which will develop perfect blooms from July buds—this is Mrs. Alpheus Hardy; therefore if "Young Gardener" has plants of this variety which have already set buds, I would advise him to retain them, even if there is but one to each plant—and there is not much likelihood of more showing at the present time, if the plants are being grown on the

non-stopping method. The variety in question requires such a long time to develop its blooms from the bud stage, that the middle of July has not been found any too soon to "take" buds of it. Although the buds which form at the points of the shoots on any variety during the month of July cannot be called other than crown buds, they are not what is termed the regular "crowns" which cultivators are anxious to procure, but are the result of a freak caused probably by some check in the regular growth of the plants, and too early maturation of the lower part of the plant, perhaps by its remaining too long in a low temperature. It is difficult to account for such freaks of growth, even in *Chrysanthemums*, but "Young Gardener" need not be alarmed; if he will promptly remove the buds, thin the number of shoots on each stem down to the orthodox one, he will find, if the plants receive correct treatment in other respects, that he will have "crown" buds show at a very good time, *i.e.*, from the middle to the end of August. The great point is to remove instantly all superfluous growth from the side branches and main stem directly it is seen that such is not required. Where many growers make a mistake, is in allowing these extra growths to extend 4 inches or so before plucking them off, and such treatment cannot be beneficial to the plants. E. Molynceux.

CAMPANULA PUMILA ALBA is a very old plant, and a very charming one. I have met with it in so many gardens lately, where borders of it are so white and pleasing, with clear white small bell-shaped flowers, and very dwarf habit. Then it gives no trouble, as it is an herbaceous plant, and once planted goes on spreading and lives for years. In the Warwickshire district it is repeatedly met with. *Campanula*.

EARLY TOMATOS.—Mr. Cook's remarks on early Tomatos in your last issue contain valuable hints on the selection of varieties for early work. For earliest crops out-of-doors, and indeed throughout the summer, I have not yet found any excel, and few to equal, the Old Large Red. There are more than one form of it in commerce, some being much earlier than others. I grow the form sold by Messrs. Sutton & Sons, Reading, which I find to be the earliest to ripen of all the varieties as yet tested here. This year I raised about 200 plants in March, grew them in heat until May, when they were transferred to a cool-house, and finally planted in the open on June 3. On June 10, 5 lb. of ripe fruit was gathered from the Old Red, while our first dish from Orange-field, and a variety which greatly resembles it, Earliest of All, was not obtained until June 27. We have gathered good fruit from the preceding varieties since the above dates, at intervals of about three or four days. The Old Red is superior to Orange-field and its varieties in size and flavour, and crops equally well, if not better. Of the smooth-fruited varieties, Horsford's Prelude was the first to ripen fruit under glass. I have not tried it as yet in the open. Ham Green Favourite is considered the best flavoured of all the Tomatos grown here, and several dishes have been included in the dessert. Among the large-fruited Perfection type, Sutton's Perfection was the first to ripen, a good dish being obtained in the open on July 4. Mr. Cook includes Dedham Favourite in his list of varieties for small establishments. I do not believe that there is a better all-round variety in commerce than Dedham Favourite, it being a certain cropper of good weight and quality, in colour a deep carmelian red. Plants for fruiting out-of-doors in June and early in July should be established in 8 or 10-inch pots not later than the last week in April. Throughout May they should be liberally treated, for if at all starved the fruit will refuse to swell, quick swelling of the fruit being of the utmost importance if early dishes of ripe fruit are required. A week is quite long enough for the early plants to batten off in a cool house, planting out as early in June as possible, and protecting if necessary rather than delay planting. If a few pit-lights can be spared, they will be found a help to weakly plants on walls if placed endways. Plants thus protected will require frequent watering until established in their new quarters. For the main crop out-of-doors, 6-inch pots can be made to answer, if the pots are plunged in short dung or other rich medium, and allowed to root through. Plants raised in March, and thus treated, have with us set two, and in a few cases three, clusters of fruit. The fruit does not swell much, but as soon as they are planted out in June it swells to its normal size, ripening from the middle of July onward. Plants

carrying heavy crops require plenty of food. The only manure I use is two parts superphosphate of lime, and one part sulphate of ammonia, well mixed, and applied frequently in quantities, large or small, according to the requirements of each individual plant. *W. R. Williams, Great Marlow.*

PLANTS AT OAKWOOD AND THE LATE WINTER.—On my return from Scotland, I looked round my garden at Oakwood to see what plants killed or injured by the winter and spring could be removed or cut in, and I send a note on some of them, as perhaps some other owners of gardens may like to compare their experience with mine. From what I have seen and heard of gardens in usually not good climates, I believe they have suffered less than those in warmer situations; on the other hand, the same description of plants have, in our garden, been killed in some parts, hard hit in others, and wholly untouched in other parts, showing the effect of different situations. Among shrubs, *Cistus* have suffered most; happily we had struck cuttings of most of the species, so can make a fresh start. Among the species killed are *Cistus monspeliensis*, *C. hirsutus*, *C. Corboriensis*, *C. tauricus*, *C. lusitanicus*, *C. florentinus*, *C. algarvensis*, *C. Cypricus*, *C. creticus*, *C. ocyroides*, *C. cymosus*, *C. villosus*, *C. salvifolius*, *C. oculus*, *C. crispus*, *C. albicaos*, *C. ladaniferus*. *Cistus formosus* is killed in some situations, hard hit in others; uninjured in a recess on our "mountain" side. The only *Cistus* which has proved perfectly hardy is *C. laurifolius*, and as this has beautiful flowers, and makes a fine shrub, I think it would be well that it should take the place of *C. ladaniferus* and *C. Cypricus* where only few species are grown. *Veronica* have also suffered much. *V. parviflorus* has been killed with us everywhere; we grew it by scores, and had a low hedge of it. It bloomed quite into the winter, and was always considered quite hardy. It has sown itself about very freely, so leaves plenty of young plants behind it. *V. salicifolia* is dead; *V. Haastii* hard hit in most places. *V. Traversii*, of which we have many plants, some very large ones, is a complete puzzle to all to whom I have shown it. It has been suggested that difference of constitution of individual plants might account for some being killed, and some untouched. No doubt, to a certain limited extent, seedling plants do differ in hardiness, but in the present case the difference is much too decided to be thus accounted for. We have a hedge of this *Veronica* in fine flower; it had hardly any twigs hurt; it stands on a hill, in a fully exposed situation. *V. epacridea*, hard hit in most situations, was untouched in a few favoured ones. *Eurybia Gunnii* is killed; *Olearia Haastii* touched, but recovering. Of *Azara microphylla*, large plants have the top branches and tips killed; a large number of small plants are most of them killed, some are shooting up from the bottom, and a few in sheltered cool situations are untouched. *Garrya elliptica* is hit very hard, *Raphiolepis ovata* killed. Among rather unexpected survivors are the different *Agapanthus*; *A. umbellatus albiflorus* has a spike, *A. Mooreanus* many spikes of flower, *A. umbellatus* growing well; these are all in beds, without protection. Seedling *Sikkim Rhododendrons* were unhurt in several sheltered situations. *Bulbs* have not suffered. *Iris Kämpferi* have bloomed especially well; *Lilium Kramerii*, *L. giganteum*, *L. Brownii*, and *L. pardalinum* varieties are fine, and *L. auratum*, just coming out, promises to be finer than ever. Taking the garden as a whole, we have lost much less than I expected. I may add that the Lilies here planted in casks, with the bottoms out, some of them now in their third year, show conclusively the advantage of keeping them free from the roots of shrubs and trees. *George P. Wilson.*

FRUIT SOCIETIES.—I strongly approve of your remarks on the action of the Fruiterers' Company. We want now more work and less talk, and I hope the Fruiterers' Company will make the best use of the information already at their hands. We have too many societies dabbling in fruit-growing with very little result. The older societies, like the Horticultural and the Caledonian, have laid an excellent foundation, and the newer societies cannot do better than lend their aid to the older ones. *Fruitus.*

CATLEYA CITRINA GROWTH.—I have a piece of *Cattleya citrina* on a block of Teak consisting of thirteen pseudo-bulbs, and hanging vertically, its leaves downwards, and its last growth, which has

just bloomed, lowest of all. What seems to me unusual is that it is now putting on a new growth next to the top or upper pseudo-bulb but one; does anyone know of a similar instance? *T. B. C.*

THE WEATHER IN THE LOTHIANS.—During the past fortnight it has rained almost daily, and the Strawberries, which in the early districts are at their best, have suffered in consequence. Plenty of warmth accompanied the rain, and everything in field and garden looks well. *W. Sutherland.*

THE HARDINESS OF JAPANESE BAMBOOS.—In the *Gardeners' Chronicle* of July 18, Mr. Gerard speaks of the hardiness of many of these plants. There are two or three plants of *Bambusa aurea* planted out around the large circular basin of water in the kitchen garden at Umberslade Hall, near Birmingham, which have stood the winter uninjured and without protection, and the position is a very low one, almost on a level with a large lake of water just outside the kitchen garden. *D.*

THE ROYAL HORTICULTURAL SOCIETY AND FRUIT CULTURE.—I have been amused to read the report furnished in your columns of the speeches of the mover and seconder of the resolution relating to the Royal Horticultural Society and Fruit Culture, passed at the recent meeting of the Fruit and Veg-table Committee. Had I been present, I should have been tempted to say something concerning that proposition and its promoters. I have a vivid recollection of a meeting of the British Fruit Growers' Association, held at the Crystal Palace nearly two years since, over which Mr. Rivers presided, and when Mr. Wright proposed a vote of thanks to the Fruiterers' Company for what that body had then done on behalf of hardy fruit culture. I ventured, then, to object to that resolution, not only on the ground that the Fruiterers' Company had so far done nothing worth mentioning, especially remembering how long that Company had in the past contented itself with doing nothing at all but giving the Lord Mayor annually a costly present of fruit, and then partaking of a costly banquet with that potentate; but also that the Royal Horticultural Society, which the resolution in question literally ignored, had done so much through its conferences, its committees, and meetings, its publications, and its Chiswick gardens, to promote fruit culture, as well as to spread abroad really useful practical and tangible information on the subject, instead of tall stupid talk which was so often misleading. I got into hot water over that matter, and because I took so prominent a position in protesting against a course which was mere flattery of an effete Company, and which no one else but the *soi-disant* British Fruit Growers' Association thought of offering. Conceive of my interest now that I learn the gentlemen whose action I two years since criticised had really taken my line in relation to the Royal Horticultural Society, and recognised that some credit was due to it for what it had done in the past, and could do in the future. I am not at all surprised that even the greatest adulators of the Fruiterers' Company should have had enough of that body after the truly absurd meeting which that Company recently held at the Mansion House. Generally, its nature was well summed up in the utterance of one of our best known market growers of fruit on the Fruit Committee: "Does the Company think that we are all fools, that after so many years of hard experience in fruit culture, we should need teaching by a Mansion House meeting?" It is all very well to circulate information respecting hardy fruit culture, but when it is urged that cottagers, allotment holders, and small farmers, as well as amateurs, should be instructed in fruit planting and culture, there must be established on their behalf such a system of land tenure as shall encourage them to plant not vegetables only, which are of but a few months' duration, but fruit trees and bushes, which endure for a life-time. Who will plant trees or bushes on a few months' notice to quit? And all the best information in the world will be wasted until that point is settled. All this the huge imposture of the Mansion House meeting ignored. If the Royal Horticultural Society is induced to act upon the resolution carried at the meeting of the committee which I have referred to, it will also have, of course, to face the sterner and most important question of the tenure in land granted to those who may wish, as occupiers, to plant fruit trees, and have no tangible hold on the soil. It is one thing to urge planting fruit trees

that some may sell. It is quite another to see that those who plant may be enabled to reap the reward of their outlay. *A. D.*

FOREIGN CORRESPONDENCE.

ORCHIDS AT THE BRUGES EXHIBITION.

Among the 600 Orchids lately shown by the firm of G. Vincke Dujardin, which won so many honours, a few, at least, of the more remarkable must be mentioned:—1. A hybrid *Odontoglossum*, sepals and petals pure white, much spotted with chestnut-brown; claws of the petals madder-red, the pure white lip marked down the centre with a wide stripe (at least 1 cent. by 1½ cent.), and bearing a very tiny patch of the same colour on either side. Flower-stem bearing sixty-five flowers, recalling in size and form those of *Odontoglossum Andersoni*, but in colouring quite distinct. 2. A hybrid *Odontoglossum*, sepals and petals pure white, marked with many large spots of rich reddish-brown, about three-quarters of an inch in size. In the centre of the lip is a large round mark of the same colour; lip citron-yellow, striped with deep carmine, the form recalling that of *Odontoglossum Alexandræ*. 3. A hybrid *Odontoglossum*, the flower of which resembled *Luckerianum*, but which was quite different in colour; the sepals and petals are rose, plentifully sprinkled with carmine spots; the lip is pure white, slightly spotted with carmine. The stem bore a dozen fine flowers. 4. *O. crispum* var. *Pacho*, very large flowers, nearly 4 inches in diameter, sepals and petals much rounded, snow-white. 5. *O. crispum*, sepals and petals pure white, spotted with pale madder. 6. An *Odontoglossum* of the Andersoni section, sepals and petals notched, pure white, with differently-sized blood-red spots. 7. *O. Princess Clementine*, very graceful flowers, white, thickly covered with small pink spots of pale carmine. 8. *O. crispum*, sepals and petals very fine, violet fading into white, the claw bordered with white, speckled with chestnut brown, flower stem bearing sixteen very large blooms. 9. *Cattleya Mossia Reine des Belges*, six very fine flowers, rich violet, lip well fringed, the centre violet fading into golden yellow, and finally into white, with a border of pale violet streaked with crimson. 10. *C. Mossia*, flowers large, white, flushed slightly with pink, lip in centre violet, veined with white, fading into golden yellow, and finally into pure white. 11. *C. Mendeli*, a splendid specimen, sepals, petals, and lip pure white, saffron yellow in centre, passing into pale mauve, veined with white. 12. *Vanda tricolor Vinckii*, sepals snow-white, petals white, covered with small spots of reddish brown, lip reddish violet, a very handsome variety. *Ch. De Bosschère, Liège.*

BRUGES.

The Queen of the Belgians and Princess Clementine paid on Saturday, July 18, a visit to the horticultural establishment of M. G. Vincke-Dujardin, at Scheepscade, near Bruges. The royal visitors were taken through the eighty-two glass-houses, and expressed pleasure at the sight. The fine collections of Orchids especially attracted notice from the Queen and Princess. Much admired also were the fine Palms, which are another specialty of this firm. This visit, and that recently paid to the Bruges Exhibition, furnish additional proof of the interest taken in horticulture by the Belgian Royal family.

EXHIBITION AT LEDEBERG, NEAR GHENT.

This will be held in a building specially constructed for the purpose, which will quite cover the Place de Congrès. It will measure 120 feet in length by 156 feet in breadth, and will have direct communication with the galleries of the Town Hall, in which will also be placed many plants. The new building will be elegant, well lighted and ventilated, so that the whole effect will be imposing.

ANTWERP.

The formal opening of the International Exhibition of vegetable products, horticultural and micro-

scopical exhibits, will take place in the presence of various civic and military authorities, on August 9, at 11 o'clock. The permanent horticultural exhibition will be very fine, thanks to the assistance given by the largest horticultural firms in the country.

THE SEED TRADE.

CABBAGES BOLTING.—The subject of the "bolting" or premature running to seed of Cabbages is one which has engaged considerable attention of late, because of its being a matter of importance to all gardeners, and especially so to those who grow for market. It has long been held by gardeners that there is an intimate connection between the time of sowing and the bolting of Cabbages, and in order to practically test this matter, Messrs. Hurst & Sons last year made at their trial grounds at Chelmsford, a series of experiments, which took the form of successive sowings extending over a period of six weeks.

Four leading varieties of Cabbages were selected for the purpose, viz., the Improved Nonpareil, Early Rainham, Myatt's Offenham, an early dwarf Cabbage of excellent quality, having peculiar white veins on the leaves, a remarkably good variety introduced by Mr. Myatt, of Eversham; and the Early Higham, one of the Enfield Market type—all leading market garden varieties which are largely cultivated round London. The first sowing was on July 7, the second on the 14th, the third on the 21st, the fourth on the 28th, the fifth on August 4, and the sixth on August 11. A piece of ground in an open field was prepared, and twenty plants of each variety planted out on the same date, in lines containing that number, the produce of each sowing being kept by itself, that is to say, four rows of the sowing of July 7 side by side, and so on. When the plants were examined at the end of May, it was seen that out of the 20 plants of the Nonpareil 11 had bolted to seed; of the Rainham, 5 had bolted; of the Offenham, none; and of the Early Higham, 2 only. The sowing made on July 14 showed the following results: of the Nonpareil, 13 had bolted; Rainham, 4; Offenham, 1; Higham, 1. July 21: Nonpareil, 12 had bolted; Rainham, 5; Offenham, 3; and of the Higham, 5. Of the sowing made on July 28, Nonpareil, 2; Rainham, none; Offenham, none; Higham, none had bolted. Of the sowing made on August 4, Nonpareil, 2 only; and of the other three, none. Of the last sowing, made on August 11, not a single plant of any of the sowings had run to seed.

If any inference can be drawn from these trials, it appears to be this: that early varieties of Cabbage for spring use should not be sown until the second week in August, and the later varieties from the first to the second week. Mr. Circuit, of Rainham, who grows the Rainham Cabbage very largely for market, commences to sow about July 25, and continues to make successive sowings of this variety up to the middle of August. One of the finest types of an early Cabbage I have seen of late is Sutton's Earliest, a variety with very few outer leaves that hearts in very quickly; and they recommend that the autumn sowings of this Cabbage should not be made until the early days of September.

That sowings made during the first two weeks in July do not produce a corresponding advance in the time of turning in was seen from the fact that between these and the last two sowings in the corresponding weeks in August there was the difference of a fortnight only in turning in.

A word of commendation is due to the Offenham Cabbage. This has evidently been carefully selected, and the stock as seen at Chelmsford is very true and fine. It is an early variety, very hardy, that stood the severe winter remarkably well; it produces but little in the way of outside leaves, and it stands well before running to seed. And referring to the records given above, it does appear that whether the Offenham be sown early or late it stands without bolting to seed better than any other of the varieties sown with it. *Pisum*,

NURSERY NOTES.

GLOXINIAS AT MESSRS. J. PEED & SONS' ROUPELL PARK NURSERIES.

The annual display of these beautiful flowers at the above establishment maintains its previous high standard, the plants exhibiting a remarkable robustness of growth and freedom of flowering. Amongst this year's novelties noteworthy of mention are:—French Grey, a delicately spotted variety; and Loveliest among the Lovely, a superb flower. Seedlings in all stages of growth meet the view, some 10,000 of these utilising every inch of spare space on the long tiers of shelving running the whole length of the houses in which the yearly display is made. Good flowers amongst the older varieties were noted in A. Luff, John Peed, The Chinaman, Loveliness, and Her Majesty.

The Gloxinia has been well stated to be a bad "traveller." Exhibitors and growers generally have often found this out to their cost. To obviate this difficulty, Mr. Thomas Peed has hit upon a most useful invention for supporting the blooms, this consisting of a wire support and india-rubber ring placed round the stem of the flower, serving the double purpose of keeping it firm, and showing it to the best advantage. X.

ORCHIDS AT McARTHUR'S NURSERY.

At the London Nursery, Maida Vale, Orchids form the greater part of the stock, and care is taken to provide neat and well-grown plants of all the rare things at as cheap a rate as possible. Among the batches of uncommon things which are specially noteworthy are *Cattleya Warocqueana*, of which there is a good stock of unflowered plants, as well as many of the fine named varieties of this beautiful autumn-flowering labiate. *Lælia autumnalis alba*, too, is well represented by several specimens; the plants of *Vanda Kimballiana* and *V. Amesiana*, and a fine lot of *Dendrobium Dearei*, are noticeable for their vigorous growth. A number of *Miltonias* are in a flourishing condition, the foliage not exhibiting the yellow hue usually seen on these plants when under cultivation. The large demand for cut flowers for the heavy business in furnishing for balls and general decorations which this firm undertakes, being unusually pressing this season, the Orchid-houses have been invaded, and many of the showier Orchids have been cut; but still many good things are in bloom, and among them we noted some superb forms of *Odontoglossum Harryanum*, a fine specimen of *O. Uro-Skinnerii*, in bud; and several *O. crispum*, *O. Pescatorei*, and various *Masdevallias*. Also in bloom are some good forms of *Miltonia vexillaria*, a specimen of *Aërides odoratum*, some good *Cypripedium Curtisii*, *C. superbiens*, and other *Cypripediums*; some *Cattleyas*, a plant of *Phajus Humblotii* in bud, which promises to be the white form; the curious little *Dendrobium macrostachyum*, and the large and showy *D. McCarthiae*, both of which are imported together, and are much alike in growth; *Saccolabium guttatum*, several of the pretty white and fragrant *Angraecum falcatum*, and several specimens of the handsome *Utricularia montana*, which is generally associated with the Orchids.

Lilies and other bulbous plants are also a specialty at this neat and well-tended nursery, and the show-house is very effectively arranged with plants of them in flower.

STRAWBERRIES AND VEGETABLES AT BURGHLEY HOUSE.

That fine specimen of a gardener, Mr. R. Gilbert, of Burghley House, Stamford, has always surprises in store for every visitor to the gardens. And this year the greatest surprise to us was a dish of British Queen Strawberries, every fruit of which would measure 8 inches in circumference, and ripened to the very tip. The old man was undis-

guisedly proud of them, and to convince us that he had not searched the bed over for them, we were taken to see it; and to our surprise, many such dishes could have been gathered that morning, and many more at a later date.

There must be something in the soil and the air on Burghley Hill which favours early maturity, and perfect development; in corroboration of which, several things were observed during our short stay. The soil is deep, warm, dry, and overlies a stratum of red sandstone, which will answer for a good deal in garden crops, be they Peaches, Strawberries, Onions, or Cabbages.

Another fine-looking Strawberry was Gilbert's seedling Chief Secretary, which is good in colour, fair in flavour, and firm of flesh, bearing carriage uncommonly well, and the plant a vigorous grower. It has the making of a good market fruit, and everything being marketed at Burghley, its merits in that way were put to a good test this season. A number of Strawberries are grown, and all well, but they consist mostly of the standard varieties. The rows of plants are set wide apart, generally some 3 feet, and none was more than three years old. The best fruits are borne the first and second years, but they are later in coming to maturity the second year, and still later the third year than the second. The Strawberry quarters, when the plantations have reached full age, are skimmed over, the plants carried away, or burnt on the ground, which is planted with Kales, Broccoli, and the like, Gilbert's beloved crowbar being brought into use to make the holes for them.

Some very fine things in Peas were noted. Charles I., raised by Mr. Myatt, of Ovington, is a good productive Pea for early sowing. It has the flavour of Ne Plus Ultra, but is a better cropper by far, and does not grow so tall as that variety. It was shown at the Vegetable Conference at Chiswick, and was then stated by the judges to be Standard, which is a variety of Mr. T. Laxton's raising, and something very different. Very fine White Elephant Onions (transplanted) at about 1 foot apart were noticed. It is an admirable early winter variety that looks like an enlarged edition of the Queen. The earliness of Burghley Gardens was well shown (July 12) by some ripening Tomatos—the old red or one much like it—on a warm border, in the open, and tied to sticks.

Wall fruits are generally abundant. Morello Cherries especially so, although some of the trees are full of yellow fruits, which will fall—the effect of the late frost in May.

Much of the fruit on the fine old Vines and Peaches in the early houses was already marketed, but enough remained on those in the late houses to show that good crops and fine fruits only are tolerated. *A Roamer*.

ROSES.

ROSE LA FRANCE OF 1889.

This fine hybrid Tea was raised by M. R. Moreau, Angers, from seeds of Reine Marie Henriette, sown in 1883, which in the previous year had been fertilised with pollen of La France. Only two of these seeds germinated, one a very weakly growing plant; the other with a strong bushy habit, which in two years had formed a bush 1 metre high by $\frac{1}{2}$ metre in diameter, with three strong shoots $1\frac{1}{2}$ metre long. In the spring of 1886 these shoots, which hitherto had carried no flowers, were cut back to 1 metre in height, and all the other wood was removed. In the course of that year, a bloom of extraordinary size, and of a bright cherry-red colour, appeared. This novelty appears to possess much affinity with Guillot's La France, in habit of growth, freedom to bloom, and in foliage. Hence the above name.

Later observations show that it possesses a vigorous habit with very strong shoots, having a few slightly-bent thorns. The bloom is spherical,

and large; the very strong bud short, egg-shaped, in colour red, edged with carmine. It has a pleasant fragrance. It is a Rose that will be very generally cultivated, *Extract from Moller's Deutsche Gartner Zeitung.*

EPIDENDRUM VITELLINUM.

MR. SWAN, of the Gardens, Castle Hill, Englefield Green—one of our old correspondents, especially upon matters relating to Orchids—sends us flowers of *Epidendrum vitellinum*, nearly regular in form, and semi-double. One of these flowers is shown in Fig. 18. No two flowers were quite alike, but broadly speaking there were three regular sepals, three regular petals (regular peloria), three petaloid stamens, and within them an indefinite mass of filaments, some of which represented, no doubt, the second row of stamens and the three carpels.

A section across the pedicel showed six equal vascular bundles in a ring, besides a vast number of smaller ones irregularly distributed, and doubtless arising from the forking and subdivision of the six primary ones. The same plant produced similar flowers last year.

VARIORUM.

WINE FROM BLACK CURRANTS.—The wine which is properly made from the black Currant may be said to be the best of those made from small fruits, and is equal to the best French red-wine, and similar in tint. It also possesses a particularly fine flavour, and is perfectly free from deleterious ingredients, and is therefore of much benefit when partaken by the sick and convalescent, as it never causes headache. No wonder that the fabrication of this wine has greatly increased in recent years. Those who possess bushes of this variety of Currant should not neglect to make a cask of the wine every year, which when the labour and the fruit cost nothing, comes to about 12 to 18 kreuzern=*3d.* to 4½*d.* English, per bottle of 1½ pint.

The fruit must be picked in dry weather, and cleared from the stalks, put into broad pans or dishes, and squeezed with the hands, and subsequently shaken about in a hair sieve till the juice has run off. The latter must be put into a clean cask to ferment, with water in the proportion of 1 litre juice to 2 litres water, and to every litre of the mixture 1 to 2 lb. loaf sugar—the greater the proportion of sugar the stronger the wine. The quantity of sugar is, for ordinary wine, 425 to 500 grammes sugar; for dessert wine, 600 to 700 grammes; and liqueur wine, 1000 grammes=1 kilog. Rum and brandy casks may in case of need be used for holding the wine, but these should be first washed out with a hot strong soda-ley, and afterwards with clear water. If the cask is without smell, and quite clean, the whole may be put into it, and it should be placed in a cellar where there is a temperature of 62° to 66°, covering the bung-hole with an inverted wine-glass, and the fermentation awaited, which will be set up in a day or two. When the ferment is fully commenced, a yeast-pipe should be fitted tightly into the bung-hole, otherwise the wine will readily set up an acid (vinegar) ferment. When the hissing and bubbling noises are no longer heard when the ear is placed to the bung-hole (October or November), fill the cask with wine, or failing that, with sugar-water, and so that it remains always full to the bung-hole; it must frequently be examined.

In March the wine will be quite clear, the yeast has sunk to the bottom, and then is the time to run it off into another clean cask, which must also be kept quite full. If another cask be not to hand, the wine may be run out into clean vessels, the fermenting cask made clean, and the wine returned to it. The dregs should be allowed to run through a thick flannel cloth, and the clear liquor put with the rest of the wine. In a few months, in a cool cellar, the wine will be fit to drink, and may be drawn off into

bottles, and well corked and sealed; and these may be stored horizontally or upright.

If the cask is not wanted for some time, it should be washed out with hot soda water several times, and when dry, a little sulphur-paper, or rag, burnt inside of it, suspending the former with a piece of wire, and letting it burn with an almost closed bung-hole. This process of sulphuring must be often repeated, if the cask remains a long time unused. *Mittheilungen der K. K. Gartenbau Gesellschaft in Steirmark*, for July, 1891. A yeast pipe, it may be explained, is a large tin pipe, made with an obtuse angle about the middle, and is used for conducting the yeast into a tub that is stood alongside the wine cask. *Ed.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 21.—Present: Dr. M. T. Masters, in the chair; Mr. Morris, Mr. Blandford, Rev. W. Wilks, Rev. G. Henslow, Hon. Sec.

Comifers attacked by Chermes.—With reference to this subject, brought before the committee at the last meeting, Mr. Blandford remarked on the difficulty of destroying the insects with the paraffin spray, inasmuch as it was practically useless for large trees, and could be only applied to small ones; moreover, it will not remove them unless it be applied with force, and in that case water alone would answer the purpose. The only effectual method was



FIG. 18.—EPIDENDRUM VITELLINUM: REGULAR PELORIA, ETC.

to nip off the galls made by the chermes. From some observations of Dr. Masters, it would seem that the gall-making species does not appear to attack the Larch, but only the Spruce Fir, though other species of chermes attack various members of the Conifera.

Microscopical Structure of Hybrids.—Dr. McFarlane sent photographs illustrating the microscopical structures of *Lapageris*, *Philesia*, and of the hybrid between them, *Philageria*. In all cases the anatomical details of the hybrid were intermediate in character between those of the two parents.

Primula sikkimensis attacked by Slugs.—Rev. C. Wolley Dod sent plants from which the cortical chlorophyllaceous tissue had been gnawed off by the common white slug. As a proof of their partiality, he observed that stalks of *P. rosen* and of *Dodecatheon*, growing side by side with the above, were not touched. If the *P. sikkimensis* is barked soon after flowering it withers and develops no good seed.

Loranthus (?) from Bechuanaaland.—Mr. Johnstone forwarded a specimen of what appeared to be a species of *Loranthus*, on which he observes: "It had a small berry, not quite round, of a colour similar to red coral, on a short stalk." It was referred to Kew for identification.

Apple and Pear Twigs Barked.—Mr. G. Lee of Clevedon sent some more specimens, but no new light could be thrown upon the injury. A method adopted by Mr. Bunyard, who is familiar with the fact, may be mentioned. In cases where nocturnal beetles or other insects attack young trees, he lays a sheet under the tree, and by violently shaking it, the insects fall upon it, are easily seen, and then dispatched.

Strawberries attacked by Beetles (?).—Messrs. Wood & Ingram, of Huntingdon, forwarded specimens of beetles of two species, *Harpalus ruficornis* and *Terostichus madidus*, supposed to have been the depredators. They are nocturnal, but very exceptionally vegetable feeders, hence some suspicion was felt as to their being the right insects; and the question was raised as to whether they had been actually observed eating the seeds of the Strawberries as described. If the above beetles were the real enemies, hand-picking at night is the only method of destroying them, as they are nocturnal in their habits.

Plants, &c., Exhibited.—Dr. Masters showed a specimen of *Weigela sessilifolia*, with small scentless and yellowish flowers, a dimerous *Cyrtipedium*, a pelorian *Linaria vulgaris*, and a prolific Carnation. Mr. Henslow exhibited a white Iris with two flowers, both being dimerous instead of trimerous. Members of the Scientific Committee may be reminded that the next meeting on August 15th will be the last of the session. The first meeting of the winter session will be held at Chiswick on October 6th on the occasion of the Conifer Congress.

NATIONAL PINK SOCIETY.

NORTHERN SECTION.

THE annual exhibition was held in the Botanical Gardens, Manchester, on July 18, and there was a good competition in all the classes.

For twelve blooms, six at least dissimilar varieties.—1st, Mr. A. K. Brown, Handsworth, Birmingham, with very fine blooms of Boiard, Amy (Brown's), Bertram, Maud (Brown's), Ethel, Minerva, Mrs. J. Cronk, and Modesty; 2nd, Mr. S. Barlow, Chaderton, Manchester, with Boiard, John Dorrington, Nothing Better, Hooper's No. 1, Mrs. Barlow, George Hodgkinson, and Defiance, an excellent stand.

Six blooms, dissimilar.—1st, Mr. C. H. Thurstan, with Boiard, John Dorrington, Mrs. Thurstan, and three seedlings; 2nd, Mr. A. K. Brown, with Mrs. Dark, Bertram, Ethel, Amy, Modesty, and George White.

For six blooms, not less than three dissimilar varieties.—1st, Mr. A. K. Brown, with Bertram, Amy, Minerva, The Rector (Fellowe's), and Mr. J. Cronk; 2nd, Mr. W. Taylor.

For three blooms, a purple-laced, a red-laced, and a black-and-white, 1st, Mr. Taylor; 2nd, Mr. Barlow.

Single-bloom of purple-laced.—1st, Mr. A. K. Brown, with Bertha; 2nd and 3rd, Mr. Saml. Barlow, with Boiard; 4th and 5th, Mr. Taylor.

Single-bloom, red-laced.—1st and 3rd, Mr. Brown, with Empress of India, and 2nd with Amy. 4th and 5th, Mr. Taylor, with seedlings.

For collection of Pinks set up in bunches as cut from the borders.—1st, Mr. T. Walkden, Sale, Manchester, with a group in which Souvenir de Sale, William Brownhill, and Mrs. Walkden were the most noticeable.

The Premier blooms were:—red-laced, a fine bloom of Empress of India, by Mr. A. K. Brown; and purple-laced, for a fine bloom of Boiard, both in Mr. Brown's 1st prize stand of twelve.

First-class Certificates were awarded to Mr. A. K. Brown, for seedling Amy, a very first-class flower; and Bertha (Paul), a very fine purple-laced flower. Also to Mr. J. Edwards, for James Percival, red-laced, a fine flower; and to Mr. J. Walkden, for a very fine white self, with broad petals and smooth on the edge.

ACTON HORTICULTURAL.

THE twenty-fourth annual show of this Society, which was held on Wednesday, July 22, proved to be a success. Much interest centred on the event, as it may be remembered that last session an Act was passed which, dealing with open spaces, enacted that they might be closed (at stated times) for horticultural and agricultural purposes. Taking advantage of this Act, the Committee of this Society secured the consent of the local authorities for the holding of this year's show in the Acton Park and Public Recreation grounds.

The exhibition was certainly one of the best the Society has had, and the gardeners of Acton are to be congratulated upon being able to produce, amongst so much bricks and mortar, such satisfactory results.

For a group of stove or greenhouse plants, arranged for effect, Mr. T. Butcher, gr. to J. Toynbee, Esq., East Acton, 1st, with a pretty arrangement.

Mr. G. Reynolds, gr. to Messrs. de Rothschild, Gunnersbury Park, put—not for competition—a

group of a very choice description, which was much admired.

Specimen plants, both foliage and flowering, were not of gigantic size, it is true, but were nevertheless well grown, the foliage stuff being finely coloured. The principal prize-winners were Messrs. J. Fraser, C. Burrows, S. Beech, T. Butcher, G. Benham, C. B. Green, and W. Polley.

Fuchsias were a feature to be remarked. The special prizes (Mrs. Walker's) were the means of bringing forward eight entries, or 48 plants, a beautiful and effective feature. In this class the successful competitors were Messrs. J. Fraser and G. Benham.

Rose blooms were shown in very fine condition (not for competition) by Messrs. C. Lee & Co., Ealing. Very highly commended, was Mr. G. Weedon, St. John's Nursery, Ealing, for tastefully arranged floral decorations.

Fruits and vegetables were shown well by the gardeners; and Mr. S. Beech, gr. to C. Essex, Esq., Oldfields, gained the special prizes offered by Messrs. Sutton & Sons and James Carter & Co. for collections of vegetables. The cottagers' exhibits were good throughout.

The management of the show was admirably carried out by Mr. C. B. Green, the Society's Hon. Secretary.

THE DITTON HORTICULTURAL.

The fourth annual exhibition of this Society took place on Wednesday, 22nd ult., at The Cedars, Thames Ditton, by kind permission of H. Cooper, Esq.

It is gratifying to record that it was a distinct advance upon previous shows, particularly amongst the groups of plants arranged for effect, which formed a pretty and attractive feature. The prize-winners in this section were:—Mr. J. Plowman, gr. to L. Smith, Esq., Woodstock, Long Ditton; Mr. W. Palmer, gr. to the Right Hon. W. F. Hume Dick, Thames Ditton House; and Mr. H. Farr, gr. to Hannibal Speer, Esq., Manor House, Thames Ditton.

Stove and greenhouse plants were shown in fine condition by Messrs. Farr & Palmer, the latter exhibitor taking Messrs. Sutton's special prize for a collection of vegetables, with some extra fine samples. Non-competition groups formed an attractive feature. Here Messrs. Barr & Son, King Street, Covent Garden, whose nursery-grounds are in the neighbourhood, sent a fine collection of hardy flowers.

Messrs. Lewis & Williams, Ember Nurseries, a good display of bouquets and other cut flowers. Mr. R. Lambert, Thames Ditton, some fine Poppies, Roses, and Stocks. Messrs. John Laing & Sons, Forest Hill, a first-rate, well-arranged collection of hardy flowers, and Messrs. Peed & Sons, Streatham, fine Gloxinias.

The cottagers made a good display of flowers, fruit, and vegetables.

The show was a great success, being well attended, and a word of praise should be accorded in this connection to the Hon. Secretary, Mr. W. Palmer, and the Hon. Treasurer, Mr. A. W. Cousins, for their well-directed efforts in arranging so good a show.

LUTON HORTICULTURAL.

JULY 22.—The annual exhibition of this Society took place in connection with the meeting of the Bedfordshire Agricultural Society at Luton, three large tents being set apart for the purpose. It is almost invariably noticed that when this occurs, horticulture takes only the secondary place; the horse-ring, with its jumping attractions, puts the garden and its products completely in the shade.

Luton not being a plant-growing district, there was not a great display of specimens, but Mr. W. Baillie sent from Luton Hoo Gardens three fine groups, and Mr. Hempson, gr. to Lady Wingfield, Amphill House, a large and imposing one, and in each case a high commendation was awarded. The best collection of plants arranged in the form of a decorative group, came from Mr. W. Cook, gr. to B. Bennett, Esq., Cheverells Park; Mr. A. Barford was 2nd, and Mr. H. Brown, Highfield, 3rd. Coleus, Fuchsias, Begonias, foliage and flowering, &c., were fairly well shown, but not of a character to require particular notice.

The great feature of interest consisted of the Rose competition, which was an open one. The best twenty-four came from Mr. C. Turner, Royal Nursery, Slough—a superb lot of H.P.'s, large, full, and brilliantly coloured. The following well deserve special mention:—Pride of Waltham, Sir Garnet Wolseley, Marie Banmann, Her Majesty, grand;

Duke of Edinburgh, Duke of Teck, fiery crimson-scarlet; Charles Lefebvre, L'Eclair, Gloire Lyonnaise, A. K. Williams, Alfred Colomb, and Mrs. J. Laing. Mr. F. Cant, Colchester, was 2nd, with as fine a bloom of Madame Gabrielle Luizette as has been seen this season; also Jean Souper, Dupuy Jamain, and Dr. Andry. Mr. B. R. Cant, Colchester, was 3rd; but the latter took the 1st prizes in twenty-four Tea-scented varieties—a very good lot of flowers; Mr. F. Cant being 2nd. With twelve varieties, Mr. C. Turner was 1st, and Messrs. Laxton Bros., Bedford, 2nd.

The best twelve Roses staged by amateurs came from the Rev. W. H. Jackson, Stagsden Vicarage, Bedford, who had some capital blooms; Mr. G. Cook was 2nd.

Another prime feature of the show was the bunches of hardy herbaceous plants shown by Messrs. Laxton Bros., Bedford, who exhibited very fine bunches of plants not generally shown, such as *Platycodon grandiflora* and its white variety; *Coreopsis lanceolata*, *Catananche cœrulea*, and *C. bicolor*; *Centaurea macrocephala*, *Scabiosa caucasica*, finely coloured; *Michauxia campanuloides*, *Dianthus Napoleon III.*; a fine form of *Gaillardia hybrida grandiflora*, &c.; Mr. G. Cook was 2nd.

A large and interesting collection of Sweet Peas was also shown by Messrs. Laxton Bros., which attracted a good deal of attention. Other cut flowers were shown, but nothing that was above the average was noticed.

Forced fruits were sparingly shown, but outdoor fruits more largely, and these were generally of good quality.

Vegetables were both numerous and good, the chief interest in them centring round the classes where Messrs. Sutton & Sons, of Reading; Messrs. Daniels Bros., of Norwich; Messrs. James Carter & Co., High Holborn; and others offered special prizes.

Table decorations, bouquets, baskets of flowers, &c., were numerous and good, and, as is generally the case, proved of great interest to lady exhibitors.

WALTHAM ABBEY AND DISTRICT HORTICULTURAL.

JULY 23.—This is one of the best of the suburban horticultural societies, and it is worthy of remark that while most horticultural shows appear to have suffered through the lateness of the season, the one held at Waltham Cross was exceptionally good; the honorary contributions made a good show in themselves. Mr. J. Nicholson, gr. to W. Melles, Esq., Sewardstone, brought a number of orchard-house trees in pots—Peaches, Plums, Apples, &c., all in good fruiting condition. Mr. Melles is going in for fruit culture on a somewhat extensive scale, and it appears quite successfully. Messrs. Paul & Son, Cheshunt, had some capital dwarf-growing *Cannas* in pots, *Disa grandiflora*, a very fine lot of cut flowers of hardy plants and Roses, outdoor fruits, vegetables, &c. Mr. W. Rumsey, nurseryman, Waltham Cross, had a fine lot of cut Roses, which he had backed with Ferns, &c. Mr. Thomas Rochford, Tarnford, had a fine group of Palms, Ferns, Bermuda Lilies, &c. Also Cucumbers, Melons, and very fine Tomatos. Mr. George Poyser, Cheshunt Street, had a fine lot of Trophy Tomato, which appears to be a favourite market sort in this district; Mr. J. B. Riding, florist, Chingford, a remarkably fine strain of erect-flowering Gloxinias; and Mr. J. Riding, gr. to A. J. Edwards, Esq., a large and well-arranged group of plants. All the foregoing were highly commended.

There were two classes for groups of plants arranged for effect, one with Orchids and one without; and some charming features resulted. The best group, including Orchids, came from Mr. Ayling, gr. to A. J. Hollington, Esq., Enfield, who made excellent use of a quantity of fine Cattleyas, interspersed with suitable foliage and other flowering plants. Mr. J. Nicholson, gr. to W. Miller, Esq., was 2nd, with a very good arrangement also; and he was placed 1st in the other class; Mr. J. Turk, gr. to P. Bosanquet, Esq., Little Berkhamstead, was 2nd.

Mr. Nicholson had the best six miscellaneous plants, and Mr. Ayling was 2nd; and they held similar positions in the class for six stove and greenhouse plants, some remarkably good specimens being staged. Mr. Ayling had the best six Ferns; Mr. J. Green, gr. to Sir T. F. Buxton, Bart., was 2nd; but he staged the best specimen Fern, having a fine plant of *Gymnogramma Laucheana*. Mr. E. Ayling had the best Orchid—a well-bloomed piece of *Cattleya Mendeli*.

Caladiums, tuberous-rooted Begonias, and Achimenes were very fine indeed, from Mr. Ayling; Fuchsias, Coleus, &c., were all well shown; the Caladiums from Mr. J. Nicholson were beautifully effective, and the leaf-markings very fine.

Cut flowers were excellent, especially the twelve bunches shown by Mr. Ayling, who had many fine Orchids; Mr. C. May, gr. to H. J. Adams, Esq., Enfield, was 2nd. Roses shown by gardeners and amateurs were good; so were the hardy flowers.

Fruits of the better kinds were sparingly exhibited. Mr. Ayling was successful with white and black Grapes. Outdoor fruits were on the whole very good, but Strawberries a little over-ripe.

Ladies were to the fore with table decorations of various kinds. Miss Vincent, of Waltham Abbey, was 1st with a series of vases, as also for one vase. Vegetables were better than we have yet seen them, but that is to be expected as the season advances.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

Conference in Beddington Park.

At a meeting of this Association held on Thursday last, the following was adopted as the programme for the Conference in Beddington Park on Monday, August 3. Sir James Whitehead, Bart., one of the Vice-Presidents of the Association and Master of the Fruiterers' Company, will take the chair at 4 p.m., and will deliver an opening address, to be followed by Mr. T. Francis Rivers. The next subject is "Object Lessons in Fruit Growing for Cottagers and Allotment Holders," illustrated by diagrams, by Mr. John Wright. Mr. G. Hammond will follow with some hints on "How to Encourage Fruit Culture amongst Small Farmers and Cottagers." Mr. Joseph Cheal will deal with the "Preparation of the Soil for Fruit Trees," Mr. George Gordon will discuss the "Extension of Fruit Culture, and the Work of the British Fruit Growers' Association;" the Rev. T. W. Sharpe proposes to consider the best methods of including fruit culture in the technical education scheme, while several other members have promised to take part in the proceedings, and to contribute hints likely to be of interest.

It was resolved early in the season to render the meeting as useful as possible to the numerous cottagers and allotment holders in the district; the programme has therefore been prepared with a special view to their requirements. The exhibition held by the local Society is expected to be both large and interesting, and if the weather prove favourable, a large attendance is anticipated.

I am also desired to state that important papers and addresses on fruit subjects are promised for the Conferences at Cardiff on August 12th, the Crystal Palace on September 4, and Edinburgh on September 10. *Lewis Castle, Hon. Sec., Hotham House, Merton.*

LAW NOTES.

A NURSERYMAN'S CLAIM FOR WORK DONE.

IN the Westminster County Court on Thursday July 16, the case of *Edge v. The Uxbridge Lawn Tennis Company*, was before his Honour Judge Bayley, and was an action by the plaintiff, Mr. William Edge, who carries on business as a nurseryman at Bedford Park, Chiswick, to recover the sum of £158, balance of account for work and labour done on behalf of the defendant Company.

The plaintiff, Mr. William Edge, was called, and said he was a nurseryman and florist, and carried on business at Bedford Park, Chiswick. In February last he sent in a tender to the defendant in connection with the levelling of a new lawn tennis ground. He agreed to do the work for a certain price, but he had not proceeded very far with it, when he came upon a bed of clay and springs of water. He communicated the fact to one of the directors, and told him that he could not carry out the work for the agreed price. He was then told to continue the work and not to let it stop on any account, and if no arrangement as to price could be arrived at, he (plaintiff) should certainly be paid for what he had done. The work continued until April, up to which time £189 had been paid on account, and witness was asked to

send in a statement of account, which he did, and which showed that there was due to him the amount now claimed. After that a new arrangement was entered into, and it was agreed that the labour and profit account should be paid every week. That arrangement had been continued until the work was finished, but the sum which was due before it came into force, had not been paid.

For the defence, Mr. John George Wiley was called, and said he was a director of the company. He denied that the first arrangement was ever departed from, and contended that the plaintiff had been paid all he was entitled to.

After hearing the whole of the evidence, his Honour said he had no doubt that the contract had been waived, and that extra labour had been entailed in consequence of the clay and water, but he (the judge) was satisfied that the plaintiff had been paid all he was entitled to, therefore judgment would be for defendants with costs.

LOPPING AND TOPPING TREES.

As many farm leases contain a clause to the effect that the tenant may not "cut, lop, top or crop" the trees (except Pollards) on the farm, it may be useful to report the following case, in which the Court of Appeal recently decided that to "lop" a tree is not the same thing as to "top" one. The case (*Uwain v. Hanson**) arose under the 65th section of the Highways Act, 1835 (5 & 6 W. IV. c. 50), under which magistrates have power to order trees which overhang the highway, or damage it by excluding the sun and wind from it, or which obstruct it, to be pruned and lopped so as to prevent such damage or obstruction. The plaintiff was the owner of land adjoining a highway, and he brought his action against the defendant, who was the assistant-surveyor of the parish highways, for injuring his trees by improperly cutting them. The defendant relied for his defence on the above-mentioned section of the Highways Act, 1835, and on a magistrates' order made under it which directed him to "lop and top" the trees in question. The plaintiff contended that "topping" and "lopping" trees were different operations, and that though the Act gave power to the magistrates to order the trees to be "lopped," it gave them no power to order them to be "topped." And so the Court decided.

The Master of the Rolls, in giving judgment, said that when Parliament had to deal with matters relating to the general public, it used words in their ordinary and general sense, but when it dealt with particular businesses or transactions, and used words which had a particular meaning in connection therewith, the words so used must bear such particular meaning. The Highways Act referred to country matters, and had to be administered by country justices, and it spoke of the "lopping" of trees. It would be mere pedantry for the court to pretend not to know that "lopping" was always understood by people, who had anything to do with trees, as meaning the cutting off the lateral branches, and that cutting off the head of the tree was called "topping" it. "Lopping" and "topping" were entirely different, and "lopping" did not include "topping." The defendant, therefore, when he "topped" the plaintiff's trees, exceeded the power given him by the Act, which only authorised him to "lop" them, and he must, therefore, be held liable. *Journal of the Royal Agricultural Society.*

A BEE-SWARMING CASE.

In the Sheriff Court, at Elgin, N.B., on Friday—Sheriff Rampini on the bench—James Dean, Loch-bill, Urquhart, sued John Shand, Urquhart, for 20s., being the price of a swarm of bees which flew away from a hive in the pursuer's garden and entered a hive belonging to the defender. The pursuer stated that on the 29th of June he and his wife were watching a hive of bees which were likely to swarm. The bees went off in the direction of the defender's, and his wife followed them. At night he got two

neighbours to go along with him to claim the bees. They did not, however, see the defender, and his daughter refused to let them see the bees, which, she said, belonged to her father. He never got his bees back. They were well worth 20s. Mrs. Dean said the bees alighted on the hive, and went right into it. Shand and his son admitted that the bees went into their hive, but they stated that there were bees in the hive, and that they were weak. John Shand, the defender, stated that he did not claim the bees, although he admitted that they entered the hive, which belonged to a son who resided in Glasgow. He was quite willing to let the pursuer have the bees, if those previously in the hive were not disturbed. Mr. J. Allan Jeans, who acted for the defender, maintained that the action should have been raised against Charles Shand, a son of the defender's, who resided in Glasgow, and the defender could not be made responsible. Mr. Brown, who defended Shand, contended on the other hand that the bees were on the defender's property, and in his possession, and he was entitled to pay for them. His lordship, in giving judgment, said the story about the son being the owner of the bees, appeared to be an afterthought, and he gave decree for 20s. without expenses.

COLONIAL NOTES.

SYDNEY.

DR. WOOLLS has published a complete list of the plants indigenous and naturalised in the neighbourhood of Sydney, arranged according to the system of Baron F. von Mueller, K.C.M.G. It is an enlarged and revised edition of a list published some years ago, and is now issued under Government auspices. The Tree Ferns and Cabbage Palms, we learn, are fast disappearing, and it is to be feared that the gigantic Lily, *Doryanthes excelsa*, and Bangalore Palm, *Ptychosperma Cunninghamii*, will share the same fate. *Bulbophyllum minutissimum*, the smallest of Australian known Orchids, has ceased to grow in a spot where it was found in 1849, but which is now in the midst of the city of Sydney. Other species are increasing rapidly, and introduced plants are dispossessing the natives. Of such introductions, 175 are enumerated in the list before us, the total number being given as 1465, distributed among 513 genera, and 110 orders. The list is a mere enumeration of names systematically arranged, and with an alphabetical index. The list will be very serviceable to working botanists, and important also as an historical record.

NOVA SCOTIA PROVINCIAL EXHIBITION.

A great exhibition of live stock, agricultural and horticultural products, arts and manufactures, is to be held at Halifax, from September 29 till October 2. The Hon. Sec. is Professor George Lawson. The horticultural section includes cereals, Flax, roots, Potatoes, garden vegetables, Apples (forty-five classes), Plums, and other fruits, cut flowers, and ornamental plants.

THE GRASSES OF NEW SOUTH WALES.

Mr. F. Turner, the botanist to the Department of Agriculture, is giving, in the *Agricultural Gazette* of New South Wales, a series of illustrations of grasses, with descriptions and notes on their importance in agriculture.

BOMBAY GARDENS.

Dr. Carstensen, the superintendent of the municipal gardens of this city, gives an interesting account of the establishment under his care. The temperature ranges from 93°, and a minimum of 63°, the average temperature of the year being 79°·7, the atmosphere usually laden with moisture; the annual rainfall about 82 inches, which falls very irregularly. The period of the monsoon, or rainy season—June to October—is that in which the luxuriant growth of all foliage plants, the splendid colours of their leaves and the profusion of choice flowers are most remark-

able. The most strikingly beautiful plants are creepers, such as species of *Bougainvillea*, *Thunbergia*, *Bignonia*, *Antigonon*, *Ipomoea*, &c. *Poinciana regia* has no rival in point of colour. Palms, of course, are elements of majestic beauty. Dr. Carstensen's paper was read before the Bombay Natural History Society in December, 1890.

FRUIT FROM TASMANIA.

Better even than Britain, and better certainly than most parts of Australia, are the soil and climate of Tasmania suited for fruit culture. Accordingly, when we visited the Shoobridges in their beautiful and fertile homes on the alluvials of the Derwent, in July, 1881, we found that besides hop culture, their enterprise included Apple and Pear orchards, which rank amongst the most extensive and the most productive in the world. By one of the great steamers of the P. & O. and Orient lines, which go to Tasmania regularly to load with boxes of fruit, the Shoobridges alone have shipped 2000 boxes of Apples. As each box contains a bushel, and each bushel is, on an average, made up of 150 fruits, the aggregate is 300,000 Apples. It seems a great point that each particular fruit, free from the slightest bruise, should be carefully wrapped in tissue paper. In Tasmania, we learn, an Apple tree begins to bear in its fifth year, and is in full bearing from the seventh to the twentieth year, the crop being counted by bushels—we feel afraid to say how many, from each tree. Of course, culture and manuring are necessary to enable the trees to produce good fruit in such plenty, although on many farms where labour was scarce, we saw trees laden with fruit amidst grass and weeds 2 feet in height. It was enough to make a man's mouth water to hear from Mr. Shoobridge of the bushels upon bushels of Apricots gathered this season from single trees. Apricots can be seen growing splendidly trained on walls at the exquisitely beautiful botanic gardens on the banks of the Derwent, near Hobart. Amongst the sights at Bushy Park are a fine Oak, an equally splendid Cherry tree, and Hawthorn growing so strong and tall that poles cut from the hedges are exported to parts of New Zealand, where all is grass. When Mr. Shoobridge, senior, originally settled at Bushy Park, he grew Strawberries in such abundance, that it did not pay to send the fruit to the Hobart market. When, more than a century back now, Britain commenced to send her convicts to Australia, and especially to Tasmania, it would have seemed a wild dream to anticipate that from the antipodean colonies, as the products of the enterprise and labour of communities of intelligent freemen the mother country should now be receiving supplies of gold and silver and copper, of grain and fruit and specially wool, the finest in the world. In the romance of emigration and commerce, there are few chapters so striking as that which records the settlement and advance of Australasia. *Condensed from the "Tropical Agriculturist."*

THE TRADE IN FLOWERS.

THE wholesale and retail trade and commerce in flowers, in this and other countries, both growing and cut, is very considerable; the quantity raised in gardens and greenhouses for sale being large. In all cities, where the atmosphere is inimical to vegetable life, continued efforts are made to supply the constant demand for flowers, by artificial means. The trade, both in plants and bouquets, especially in a populous place like London, is enormous.

At a moderate estimate, the value of the flowers sold weekly in the London markets exceeds £2000 to £3000; indeed, a London journal recently stated that during the season £5000 is expended daily on cut flowers. Besides those grown at home, large quantities are imported from Holland, Italy, and the South of France, for room decoration, posies, or ladies' bouquets, dress sprays, gentlemen's buttonholes, &c. The extension of the parcels-post to foreign countries has greatly facilitated the forwarding of cut

* Reported in the *Times Law Reports*, vol. vii., p. 468.

flowers for presents or for sale. The sales in the Madeleine Market, Paris, reach £25,000 a year.

In New York there is a great demand for flowers, and the expenditure on them is considerable. Two millions sterling is said to be invested on land, greenhouses, and stock in the wholesale florists' business there. Wealthy persons will often lavish hundreds of pounds on floral decorations. At dinners, weddings, and other festive occasions £800 to £1000 has been often spent for floral designs, bouquets, and parlour decorations. Lilies of the Valley, choice Roses, and Hyacinths, seem to be the favourite flowers there. Of the Orchid family more than 3000 species are known, mostly indigenous to tropical regions. Some of the rare Orchids are of great value, and most of the British and Belgian growers and dealers have paid collectors, travelling for them in different parts of the world to obtain new species.

The flower shows of the Horticultural and Botanical Societies of London and other cities, testify to what perfection our floriculturists have brought flowers, for beauty of bloom and variety of form and colour. The varieties of Roses, Tulips, Chrysanthemums, and other cultivated flowers, have been greatly increased. Although the Tulip mania, which rose to such an absurd height in Holland in the seventeenth century, has long since subsided, yet the rage for producing fine and choice Tulips still exists. There are more than 600 acres under Tulips in Holland, the exports of flowers and bulbs being to the value of £150,000 to £200,000, of which we receive the bulk.

Flowers are largely used for making odoriferous distilled waters, such as Rose water, Orange-flower water, Lavender water, and others. One known as Marmela water, is distilled from the flowers of the Bengal Quince in Ceylon, and much used by the natives for sprinkling. It is principally for perfumery that odoriferous flowers are most largely consumed, and every day some new and rare perfume is obtained. The south of France, Tunis, Algeria, and other countries on the Mediterranean shores, are chiefly occupied in this manufacture, carried on either by small itinerant distillers, or in more perfect factories.

Of Acacia flowers 150 tons are used yearly in Cannes; of Roses, 1300 tons were used at Nice in 1889; of Jasmine, Grasse, Cannes, and the adjoining villages, use up 180,000 pounds; and of the highly odoriferous Tuberose 35,000 pounds. When we consider that the annual value of the perfumery made in Paris alone exceeds two millions sterling, and our imports and exports average £120,000 each, besides what is used at home, the importance of flowers, the chief source, becomes evident.

Violets are much esteemed for their perfume; this flower is largely grown throughout the valley of the Thames for the London markets. Many acres are grown at Mitcham. Twenty tons of Violets are annually used at Nice and Cannes for perfumes; and about six million bouquets of Violets are sold annually in Paris. The Romans had a wine made of Violet flowers, and they are still used in Turkey in the preparation of sherbets. The most esteemed sherbet in Egypt is from a hard conserve of Violets, made by pounding the flowers and then boiling them with sugar. This Violet-sherbet is of a green colour, and is called the "Grand Seigneur's sherbet." A syrup of Violets is used medicinally, and the whole plant, in a dried state, is to be found as a drug in all the bazaars of Bengal. The petals of flowers are much used in Roumania in flavouring preserves; Violets, Lime flowers, and Rose petals are especially used. Having regard to their flavours, delicate odours, and agreeable appearance, the variety of confections made there is almost infinite.

It is not only for their beauty and perfume that flowers are important in commerce; they have other economic uses. In some countries, as in India and China, they are largely used as food; many have medicinal properties which give them a value, whilst others again yield colouring substances and dyes.

Saffron is but a small article of import here as a flavouring agent in several culinary preparations, but

it is imported into India yearly to the value of £75,000. Safflower, again, was one of the most important industries of Bengal, but aniline dyes have driven it completely out of the market. In place of an export worth £70,000 yearly, it has now dropped to less than £5000 last year. Another flower in which there is now an important commerce as an insecticide, is the florets of the disc of various species of Pyrethrum; these, when powdered, are offensive and stupefying to small insects. One million pounds of this powder are used in Russia, and half as much is exported. It has a large sale also in various European States, North America, and India.

A considerable commerce arises in what is known as "immortelles," or everlasting flowers, which are made into chaplets, wreaths, crosses, and other devices, to decorate the tombs and graves of deceased friends and relatives; especially in France, where the chief demand is in November. An acre of ground will yield 2 or 3 ton weight of these flowers. The head-quarters of this class of plant is South Africa.

The practice of sending wreaths of choice flowers to adorn the collins of friends has become very general of late.

Camomile flowers, Elder flowers, Marigolds, Lily of the Valley, Cowslips, Mallow, Crocus, Linden, Mulleins, and others, have recognised medicinal properties, but are not of any great commercial importance.

But there is a large trade also carried on in imitation or artificial flowers. This manufacture is a great industry in Paris and Lyons, giving employment to many thousand persons, the value of Roses made in France exceeding £1,000,000 sterling. The French long excelled in the exact imitation of the natural flower, their elegance and exquisite finish. Ten or twelve years ago we imported these artificial flowers from the Continent to the value of nearly £600,000, but this industry has been successfully taken up in England, and now our imports are one-half less.

In New York they have also gone into the manufacture, as the imports are subject to a heavy duty, but yet they receive them to the value of £200,000 yearly. Five thousand hands are employed in New York for numerous factories; the work turned out is valued at first-hand at £200,000, a sum doubled by the dealers and milliners, who make a large profit. *P. L. Simmonds.*

Obituary.

WE regret to record the death of Mr. GEORGE STEEL, nurseryman, of Richmond, which occurred on Thursday, July 23, at the age of eighty-two years. He had been in feeble health for three years, but had only taken to his bed about three weeks previous to his end. We are indebted to Mr. H. Herbst, an intimate friend of the deceased, for the following particulars concerning him:—

George Steel was born 1809 in Richmond, in a cottage near Lord Shaftesbury's estate, and close to the spot where Thomson wrote his "Seasons," a locality at that time entirely rural. His father founded a nursery in 1800, and was one of the first and largest growers of early Strawberries for Covent Garden Market.

In 1841, George and his brother William, who survives him, established a nursery on their own account in the Kew Road. George in all his life never quitted his native place except on a single occasion, and then for a month. The two brothers have carried on a successful trade for the last fifty years, and even now are famous for their Lilies and Rhododendrons. They were highly esteemed for their geniality and upright conduct as men of business; both were bachelors, and seemed to have most things in common, even to their quaint, old-fashioned style of dress. They were both most gentlemanly and kindly neighbours, but seemed to belong to a generation of long ago. Mr. William Steel, it is to be hoped, may still live long in his green old age. Mr. George Steel was buried at Kensal Green on Saturday the 25th ult.

CULTURAL NOTES.

ANDROSACE LANUGINOSA.

THIS very pretty little Himalayan plant is looking splendidly just now, with numbers of its little, pale-rose coloured flowers open, and is one of the most attractive plants on the rocky. There are many varieties of Androsace from the Pyrenees and Swiss Alps, but I think the one in question is as pretty and useful, as a rock-plant, as any of those. It has withstood, here in South Devon, the severity of the past winter very well, and has never looked better than at the present time. Its leaves are covered with long, silvery, silky hairs. It does best when planted in a sunny position, and in sandy loam, which should be kept moist. Some people recommend a little peat to be mixed with the loam, but it seems to thrive quite as well without it. It is a plant which is readily propagated by cuttings, and frequently the tufts which grow at the ends of the long stems, which are thrown out by the plant in great numbers, and on all sides, when the plant is in good health, will take root of themselves; but to make sure of them, they should be bent downwards. *H. G.*

CERASTIUM TOMENTOSUM.

THIS plant is a native of Southern Europe, and is naturally a little tender in this country. Portions of it occasionally perish, from the effects of severe weather. Cuttings of the plant may be taken in August, and put into light, sandy soil, in the open border, pressing the soil firmly about them. To make sure of the cuttings in the winter season, frame lights should be placed over them. The plant may also be increased by division. The replanting and filling-up of vacancies in edgings and beds should be done in the spring. *H. G.*

TRADE NOTICES.

MR. P. WEATHERS, formerly of the Royal Gardens, Kew, and late of Messrs. F. Sander & Co., St. Albans, has been appointed as traveller to Messrs. W. L. Lewis & Co., Orchid Importers and Growers, Southgate, London, N.

MR. JOHN M. THOMSON, for the last nine years gardener to His Grace the Duke of Grafton, Wakefield Lodge, Stoney Stratford, has succeeded Mr. Cole as manager, The Royal Nurseries, Ascot, Berks.

MR. JAMES COLE, lately with Messrs. Standish & Co., and previously with Messrs. Ireland & Thomson, Edinburgh, goes as manager to Messrs. John Laing & Sons, Forest Hill Nurseries, London, S.E.

MR. B. RANDLE, for the last eleven years foreman and traveller with Messrs. F. Sander & Co., St. Albans, has been engaged by Messrs. Seeger & Tropp, Orchid Importers, &c., East Dulwich, London, S.E.

MARKETS.

COVENT GARDEN, July 30.

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

LARGE supplies of all classes of goods reaching us, with good trade generally. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	<i>s. d. s. d.</i>		<i>s. d. s. d.</i>
Cherries, $\frac{1}{2}$ sieve.....	4 0-8 0	Melons	1 6-3 0
Currants, red, $\frac{1}{2}$ -sieve 3 9-5 0		Peaches, per dozen...	1 6-10 0
— black, $\frac{1}{2}$ -sieve ...	7 3-7 6	Pine-apples, St. Michael, each	2 0-8 0
Gooseberries, $\frac{1}{2}$ -sieve 2 0-3 6		Strawberries, per lb. 0 2-0 8	
Grapes	1 6-3 0		
Lemons, per case	15 0-25 0		

NOTE.—Bananas and Apricots differ in price so greatly, according to quality and quantity on sale, that no trustworthy quotations can be afforded.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table listing various cut flowers such as Arum Lilies, Asters, Carnations, etc., with their respective prices per bunch or dozen.

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing various vegetables such as Artichokes, Beans, Beet, Carrots, etc., with their retail prices.

POTATOS.—The late rains interfered with the heavy supplies anticipated. Consequently prices have been fairly maintained from 90s. to 110s. for Beauties and Roses, and 120s. to 140s. for other Kidneys. J. B. Thomas.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing various plants in pots such as Aralia Sieboldi, Aspidistra, Bedding plants, etc., with their wholesale prices.

SEEDS.

LONDON, July 23. — Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., report some inquiry for new Trifolium; the offerings at present are limited, and high prices are asked for same. English requirements will not, it is thought, be this season on an extensive scale. For Italian Rye-grass the tendency is strongly upwards. Mustard keeps steady. Rape seed is dearer. Lower rates are accepted for Canary seed, but in Hemp seed the recent downward movement has reversed itself. Blue Peas are used up. There is no change in feeding Linseed.

FRUITS AND VEGETABLES.

BOROUGH: July 29.—Quotations:—Cabbages, 2s. to 3s. per tally; spring Onions, 2s. to 3s. per dozen bunches; Peas, 2s. 6d. to 3s. per bushel; and 4s. 6d. to 5s. per bag.

SPITALFIELDS: July 28.—Quotations:—Cabbages, 1s. 9d. to 3s. per tally; Peas, 1s. 6d. to 2s. 6d. per bushel; do, 2s. to 3s. per sack; Broad Beans, 1s. to 2s. per bushel, and 2s. 6d. to 3s. 6d. per sack; Cauliflowers, 1s. 6d. to 2s. per dozen; French Beans, 4s. 6d. to 5s. per half-bushel; scarlet do., 4s. to 4s. 6d. do.; Turnips, 2s. 3d. to 3s. per dozen bunches; Carrots, 1s. 6d. to 2s. 6d. do.; spring Onions, 2s. 9d. to 3s. 6d. do.; Vegetable Marrows, 2s. per dozen; frame Cucumbers, 1s. 6d. to 2s. 6d. do.; Parsley, 1s. to 1s. 6d. per dozen bunches; Cos Lettuce, 4d. to 8d. per score; Cabbage do., 4d. per dozen; Gooseberries, 3s. to 3s. 6d. per half-sieve; Raspberries, 25s. to 27s. per cwt.; black Currants, 6s. to 7s. per half-sieve; white do., 3s. 6d. to 4s. do.; red do., 3s. 6d. to 4s. do.; black Cherries, 4s. 6d. to 5s. 9d. do.; white do., 4s. to 6s. 6d. do.; foreign Tomatoes, 6d. to 1s. per box; English do., 1s. to 6s. 6d. per 12 lb.; English pickling Walnuts, 2s. to 2s. 6d. per half-sieve.

STRATFORD: July 28.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 3s. to 4s. per tally; Turnips, 1s. 9d. to 2s. per dozen bunches; Carrots, household, 1s. 6d. to 2s. 6d. do.; Onions, Egyptians

5s. to 6s. per bag; Apples, English, 2s. 6d. to 3s. 6d. per half-sieve; Green Peas, 3s. 6d. to 5s. 6d. per bag; spring Onions, 4s. to 5s. per dozen bunches; Cucumbers, 2s. to 3s. per dozen.

POTATOS.

BOROUGH: July 29.—Quotations:—Jerseys, 150s. to 160s.; Cherbours, 100s. to 120s.; Essex and Kent Regents, 90s. to 100s.; Hebrons, 100s. to 120s.; Early Rose, 90s. to 100s.; Kidneys, 120s. to 140s. per ton. Old Magnams unaltered.

STRATFORD: July 28.—Quotations:—Hebrons, 4s. 6d. to 5s. 6d. per cwt.; white do., 100s. to 120s. per ton; Roses, 4s. to 4s. 6d. per cwt.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending July 25, and for the corresponding period last year:—1891. Wheat, 38s. 6d.; Barley, 25s. 7d.; Oats, 21s. 9d. 1890: Wheat, 35s. 0d.; Barley, 25s. 2d.; Oats, 19s. 10d. Difference, Wheat, +3s. 6d.; Barley, +3s. 5d.; Oats, +1s. 11d.

HAY.

Averages.—The following are the averages of the prices paid at the various metropolitan markets during the past week:—Clover, prime, 80s. to 102s. 6d.; inferior do., 40s. to 75s.; best, 60s. to 90s.; inferior do., 25s. to 50s.; and straw, 20s. to 4s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fabr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Table showing weather data for various districts, including temperature (Day-deg., Night-deg., Accumulated), rainfall (No. of Rainy Days since Jan. 4, 1891), and bright sun (Total fall since Jan. 4, 1891).

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 25, is furnished from the Meteorological Office:—

"The weather was cool and unsettled during the greater part of the week, with thunderstorms and heavy showers in nearly all districts. Towards the close of the period, however, a considerable improvement was recorded.

"The temperature has not differed materially from the mean, excepting in 'Scotland, E.' where the average has been 2° in excess of the normal. In other districts the departure from the mean has in no case exceeded 1°, and in 'England, N.E.,' 'England, N.W.,' and 'Ireland, S.' it has been quite inappreciable. The highest readings were observed either at the beginning or end of the week, but the thermometer did not reach 75° in any district, and

in the west and north of Scotland, the north-west of England, and the Channel Islands, it failed to reach 70°. On the 22nd the maximum readings were below 65° in all but the central and southern parts of England. The lowest of the minima, which occurred on various dates, ranged from 45° in 'England, N.W.,' and 'England, S.W.,' to 55° in the 'Channel Islands.'

"The rainfall has been rather more than the mean in the north of Scotland and the eastern and western districts of England, but less in all other parts of the country. In 'Scotland, W.,' the deficiency has again been very large.

"The bright sunshine has been less than the mean in all districts, excepting 'England, N.E.,' and 'Scotland, W.' The percentage of the possible amount has ranged from 13 in 'Scotland, N.,' and 22 in 'England, N.W.,' to 37 in 'England, S.,' and 40 in the Channel Islands."

ENQUIRY.

"He that questioneth much shall learn much."—Bacon.

GLASS FOR GLAZING A PALM HOUSE.—Would any correspondent kindly inform "R. S." the best kind of glass for glazing a conservatory 36 by 66, average height 17 feet, with three gables facing south, and built principally for a collection of Palms.

NOTICES TO CORRESPONDENTS.

AUBERGINE: W. A. C. The method of culture is identical with that usually pursued with Tomatoes in pots, or Capsicums. They must be fully exposed to the sun—say, against, or in front of a south wall. Do not overpot the plants, or the blooms will be few, and growth large. In all but the warmer parts of the country the plants must be grown under glass. Six or eight fruits on a strong plant are a sufficient crop.

BOOKS: W. N. The Orchid Manual, by B. S. Williams, Paradise and Victoria Nurseries, Upper Holloway, N. Price, about 5s.

CLIMAX WEEB KILLER: Boundary Chemical Company. From personal trial we can report this to be effective in removing the green coniferoid growth from the surface of damp stones as well as in destroying weeds. It must be remembered that this like most of its class is a powerful poison, and should be handled carefully accordingly.

CORRECTION.—Royal Western Horticultural Show, Gardeners' Chronicle, p. 113. In the fruit and cut flower classes, for Mr. Cox, read Mr. A. W. Cove. The Peach Corytoni was raised at Pentillie Castle, and not at Powderham Castle.

CRYSTAL PALACE SHOW: H. R. H. The next show occurs on Saturday, August 15.

CUCUMBER ROOT: W. G. Apparently the work of some insect or grub which has attacked the roots. Are the leaves healthy?

FRESHLY-IMPORTED ORCHIDS: T. C. P. If you keep them somewhat moist the pseudo-bulbs will become plump, and put forth roots in the Melon-frame. Some small amount of air should be afforded.

FUNGUS: F. Townsend. A species of Geoglossum, of which we will endeavour to determine the species next week.

INSECTS—PARSNIPS: G. T. The insects which have attacked your Parsnips are a species of aphid, apparently A. Pastinacae; water the plants with gas-tar water and soapsuds.

LARCH DYING: S. E. The work of mice. Judging from the lichen-covered plants that were sent, the land must be ill-drained.

LETTUCES: F. Branton. A very excellent strain of apparently Paris White Cos.

MUSHROOM INSECT: T. Slater. Your Mushrooms are infested with a small species of mite, Hlophora contractilis? belonging to the great division of beetle-mites, so-called from their being covered with a thick, rigid, dark-brown, scaly coat, and which, like many other species, breeds with great rapidity. Bake the earth. I. O. W.

NAMES OF FRUITS: J. E. N. P. Fruit smashed, but not Princess of Wales.—F. C. The Apple you send is one of the latest keepers we have ever seen, though of indifferent quality.

NAMES OF PLANTS: Correspondents whose questions are unanswered are requested to consult our next week's issue.—*J. Kent*, 1, *Aerides crispum*; 2, *Aerides maculosum*; 3, *Cypripedium Lowii*.—*A. W.*, 1, *Lysimachia thyrsiflora*; 2, *Corydalis lutea*; 3, shrub, *Picea orientalis*. What you call a fungus is an aphid allied to that which causes the American Blight in Apples. Use petroleum spray.—*Miss F.*, 1, *Veratrum nigrum*; 2, *V. album*; both highly poisonous.—*W. L.*, *Stanhopea tigrina*.—*C. H.* One of the so-called *Retinosporus*, apparently that named Tom Thumb. It is merely a peculiar stage of growth of some *Thyridium*, probably *T. occidentalis*, as your specimen shows.—*Lilium* should ask such questions of the Editor, not of the Publisher. The name of the Lily is *L. Hansonii*.—*J. T. S.*, 1, *Pyrethrum Parthenium* double fl.; 2, *Claytonia virginica*; 3, *Clematis*; 4, An Umbellifer, not recognised; 5, *Campanula persicifolia* alba; 6, *C. persicifolia* var. *calycanthema*.—*J. S.*, *Francoa sonchifolia*; 2, *Spiraea arifolia*; 3, *Betonica carnea*; 4, 5, 6, all forms of *Veronica longifolia*.—*H. R. H.*, *Stanhopea aurea*, *Epidendrum fragrans*.—*W. B.*, 1, *Polystichum angulare proliferum*; 2 and 3, forms of *Lastræa Filix-mas*; 4, *Polypodium vulgare*; 5, a small frond of *Athyrium Filix-femina* and one of *Lastræa Filix-mas* together.—*W. J. W.*, 1, *Lælia crispa*; 2, *Adiantum concinnum latum*; 3, *Selaginella viticulosa*; 4, *Adiantum fragrantissimum*; 5, *A. decorum*; 6, *A. tenerum*.

PLANTAINS IN A LAWN: *H. W.* Put some vitriol in an earthen pot, and with a pointed stick, or piece of wire, let fall a drop of the liquid into the heart of the plant; or, in September, spud them up, put a little fresh loam on the bare places caused by their removal, and sow a pinch of lawn grass seeds thereon.

POTATO MILDEW: *B.* The formulas vary in their proportions. Recent experiments in France seem to show that the proportion of copper sulphate often used is needlessly large. Try sulphate of copper 3 lb., quicklime 1 lb., water 20 gallons, or it may be used in the form of a powder, with or without sulphur, as in Tait's Anti-blight Composition, a convenient form of administration.

POTATOS: TUBERS ON HAULMS. *T. P.* Very common where the original tuber has been injured by a cut by a spade, or even by wireworm.

QUEEN PINE-APPLES: *R. W.* It is rather late in the season for the above; but as the fruits now showing should ripen in the course of the next three or four months, the plants will be worth keeping. Keep the glass clean, and shade as little as possible.

ROSES DYING OFF: *Foreman.* We have submitted your specimen to one of our largest growers, and have carefully examined it ourselves, but we regret we cannot give you any precise information as to the cause.

UNDERSELLING: *C. B.* There is, so far as we know, no code of ethics in commercial matters to prevent this, but if your neighbour is, as you say he must be, selling at a loss, go you and buy of him, do not continue to grow for yourself under such circumstances. You cannot afford to grow what does not pay you, any more than you can expect to extend your business without advertising.

CATALOGUES RECEIVED.

Messrs. **VILMORIN, ANDRIEUX ET CIE.**, 4, Quai de la Mégisserie, Paris.—Flowering Bulbs, Strawberries, &c.
L. SEATH, Rixdorf, near Berlin.—Flowering Bulbs.
 Messrs. **J. PEED & SONS**, Roupell Park Nurseries, Norwood Road, S.E.—Flowering Bulbs.
 Messrs. **W. CUTNISH & SONS**, Hlghgate, N.—Dutch Bulbs and Bulbous Roots.

COMMUNICATIONS RECEIVED.—*W. P.*—Anderson & Co., Sydney.—*H. Cannell*.—*T. F. R.* (many thanks).—*M. S.*—*J. D. S.*, Baltimore, U.S.A.—*E. F.*—*T. T.*, Denver, Colorado.—*C. H.*—*W. C. & Sou.*—*E. W. B.*—*L. L.*, Brussels (mille remerciemens).—*W. R.*—*W. M.*—*M. D.*—*C. W. D.*—*C. N.*—*L. C.*—*M. L.*—*A. H. C.*, Buenos Ayres.—*J. M. T.*, New York.—*Ewing & Co.*—*W. Clark*.—*G. J. T. N.*—*H. G. B.* (We shall publish your note, it may elicit replies from some of our readers).—*G. F. W.*—*A. D.*—*H. G. Storrie* (next week).—*J. J. Willis*.—*D. G. B.*—*W. A.*—*D. Hooper*, Ootacamund.—*J. S.*—*C. T. D.*—Messrs. *Blackmore & Gillett*.—*John Colebrook*.—*J. Douglas*.—*J. G. B.*—*C. Wood*.—*J. J. Hart*.—*W. Reed*.

SKETCHES, PHOTOGRAPHS, &c., received with thanks from *H. Cannell*, Medley Wood, Natal, and *J. H.*, Dulwich.

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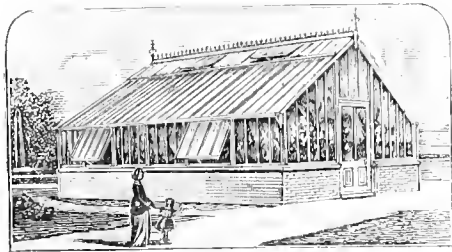
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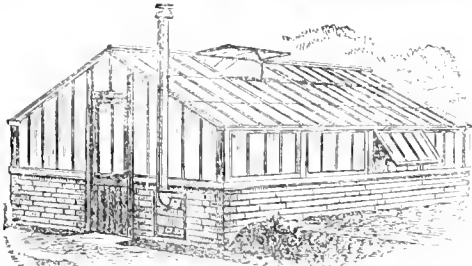
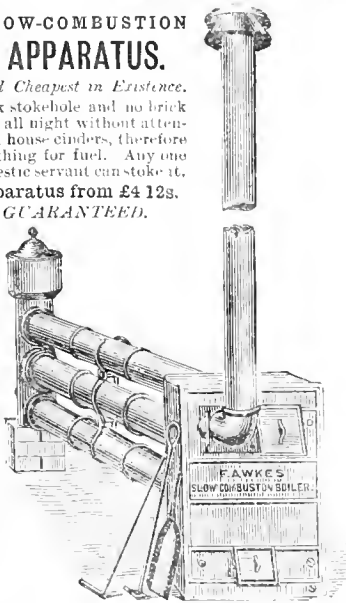
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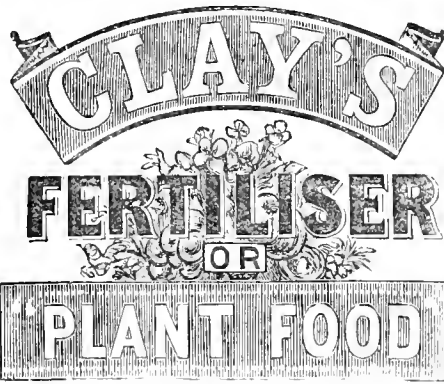
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EXTRACTS FROM THE PRESS.

"THE *Gardeners' Chronicle* has faithfully held to its promise. It is still, to-day, the best gardening journal, being indispensable equally to the practical gardener and the man of science, because each finds in it something useful. We wish the journal still further success."—*Garten Flora, Berlin, January 15.*

"The *Gardeners' Chronicle* celebrated, on Jan. 2, the fiftieth anniversary of its foundation. This is, in [English] garden literature, an unique event. . . . The publication is one of special excellence."—*Vossische Zeitung, Berlin, January 7.*

"The *Gardeners' Chronicle*, one of the most justly renowned horticultural journals of the world, celebrates the fiftieth anniversary of its foundation. The career of this publication, which is an authority in scientific as well as in practical matters, has been most successful and interesting. . . . With such a past, there can be no doubt as to its future."—*Revue Horticole, Paris, January 16.*

"The *Gardeners' Chronicle* is known wherever intelligence in horticulture is appreciated."—*Mechan's Monthly.*

"The first issue of the *Gardeners' Chronicle* for the year is a jubilee number devoted largely to a commemoration of the fiftieth anniversary of that journal's first appearance. Founded by Dr. Lindley and Sir Joseph Paxton, its policy has always been directed by men of accurate knowledge and scientific temper. Its trusted correspondents have been among the foremost of skilled cultivators and recognized authorities in the sciences related to horticulture. During its life of half a century, its influence has tended to elevate and dignify the art of horticulture, not only in England, but throughout the world, and it was never more worthy to command respect than under its present management. Our venerable contemporary is to be congratulated on the possession of so honourable a history, whilst its future is bright with the promise of ever-increasing usefulness."—*Garden and Forest (New York), Jan. 21.*

"We wish to give ourselves the pleasure of recognizing an event in the career of a respected contemporary. . . . The *Gardeners' Chronicle* is the senior by only seven years of the *Journal of Horticulture*, and, to speak paradoxically, we may venture

to say, that both these journals are as young as ever, and disseminate, each in its own way, matter of interest to botanists and horticulturists throughout the world, where the science of botany is studied, and the art of gardening is practised by the community."—*Journal of Horticulture, February 5, 1891.*

"THE JUBILEE OF THE 'GARDENERS' CHRONICLE.'—On January 2, 1841, appeared the first number of a weekly paper which, thanks to the scientific research and practical knowledge of its editors, soon became, and has ever since remained, the principal horticultural medium in England."—*Illustration Horticole, Brussels, Jan. 1891.*

"One of the best conducted English horticultural papers, the *Gardeners' Chronicle*, celebrated the fiftieth year of its existence on January 2. This journal was called into existence by Dr. Lindley and Joseph Paxton. Two of the first and most industrious assistants were the recently-deceased landscape gardener Marnock in the practical part, and James Bateman, who published a series of interesting articles on epiphytal Orchids. Of other eminent writers, there are mentioned the names of Charles Darwin, Dean Herbert, Sir W. Hooker, who, in 1841, was appointed Director of the Royal Botanical Garden, Kew; Sir J. Hooker, Professor Danby, Dr. Royle, Henslow, MacIntosh, Curtis, Phillip Frost, Robert Thompson, Robert Fortune, and Berkley."—*Moller's Deutsche Garten Zeitung, Erfurt, February 1, 1891.*

"For the past half a century, the *Gardeners' Chronicle* has been the leading horticultural and botanical newspaper in the United Kingdom. . . . With such a talented proprietary and staff of editors, it is not surprising that the paper was at once recognized, and took up a leading position as the first horticultural journal of the kingdom. Its success has been very great. . . . Very few of the first working printers on the paper are left to witness the prosperity of the venture, except the writer of these lines (the editor of the *Press News*). . . . The *Gardeners' Chronicle* is still recognized as the leading horticultural journal of the kingdom."—*Press News, January, 1891.*

"The *Gardeners' Chronicle* has just celebrated its jubilee, its first number having appeared January 12, 1841. The founders were Dr. Lindley and Sir

Joseph Paxton. It is to be congratulated upon its long and eminent list of contributors, and upon its constantly increasing usefulness. It is one of those gardening journals that have become a necessity, not only to the practical gardener, but to the professional botanist as well."—*The Botanical Gazette (American), February, 1891.*

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"Let me offer my best felicitation on the semi-centenary jubilee of your splendid *Chronicle*, which you have edited with so much talent, knowledge, and discrimination, for so long a while as the worthy successor of the great Lindley. Wishing the *Gardeners' Chronicle* also in future a splendid success under your able leadership, I remain, Ferd. von Mueller, Melbourne."

"You have brought the *Gardeners' Chronicle* into an admirable condition of prosperity and authority. Of all analogous publications, the *Chronicle*, with no possible reservation, takes the lead. It is more widely read than any of the horticultural journals, owing to its wider circulation. The matter is the most varied, and the illustrations the most correct and elegant. What I wish is, not the continuance and enhancement of your success, for that is certain, as the future will prove, but the continuance of that marvellous energy which has had such excellent results already."—*Maxime Cornu, Director of the Jardin des Plantes, Paris.*

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("The Times of Horticulture")

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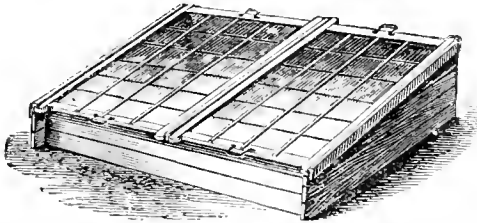
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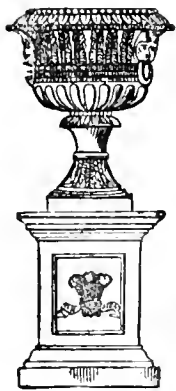
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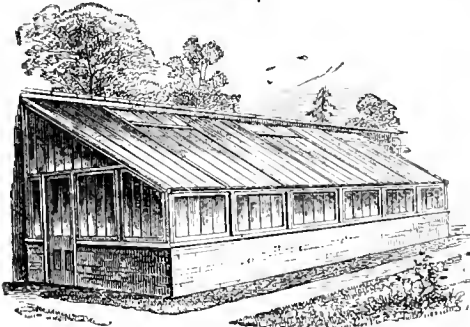
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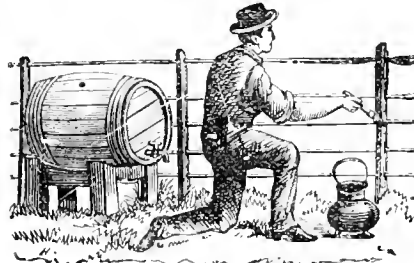


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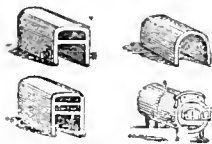
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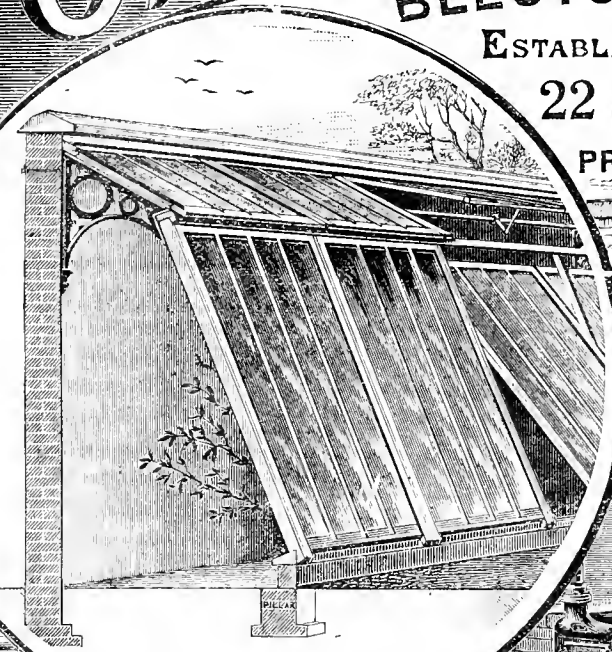
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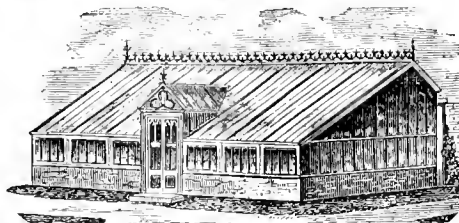
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SATURDAY, AUGUST 8, 1891.

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MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE OF ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 20, and he will be glad if Gentlemen desirous of ENTERING PLANTS for THIS SALE will please send LISTS not later than THURSDAY NEXT.

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MR. C. J. STEVENS has received instructions from the executors of the late Sir G. MACLEAY to SELL by AUCTION on the premises, as above, about the end of the present month, the COLLECTION OF ORCHIDS comprising exhibition specimens of *Cypripediums*, *Cologyne*s, *Sobralias*, *Vandas*, and *Cymbidium*s; also *Cattleyas*, *Odontoglossum*s, *Dendrobis*, &c., including most of the well-known kinds. Specimen Palms, Tree and other Ferns, Aquatic Plants; Ornamental Stove, Foliage, and Greenhouse Plants; Succulents, Lilies, Eucharis, &c. Also three cows, horse and pony, two carts, two racks of hay, iron-tanks, garden-seats, vases, lawn-mowers, greenhouses, water-barrows, and other requisites for the garden.

For further PARTICULARS see next Advertisement.
 Auction Rooms and Offices, 34, King Street, Covent Garden.

Tottenham, N. close to White Hart Lane Station.
ABSOLUTE CLEARANCE SALE of the whole of the GLASS ERECTIONS, STOVE and GREENHOUSE PLANTS, by order of Mr. JOHN MALLER, whose Lease expires at Michaelmas Next.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, on the Premises, the Brunswick Nursery, Tottenham, N., on THURSDAY, August 13, at 12 o'clock, without reserve, the ERECTIONS of 19 GREENHOUSES, with the Hot-water Piping (mostly 4 inch), Boilers, and Brickwork; 150 movable Lights in various sizes, Galvanized Iron Tank to hold 2500 gallons, Pumps and Pony Gear, Pony Cart, Set of Harness; also a large quantity of USEFUL STOCK, consisting of Bouvardias, Geraniums, best sorts; Feus, Stove Chubbers, Clematis Jackmanni, Ampelopsis Veitchii, Chrysanthemums in variety, including 200 Louis Böhmer, the new pink Ostrich Plume, in 48 and 32-pots, and other Stock.

May be viewed one week prior to the Sale. Catalogues can be obtained on the Premises, also of Mr. JOHN MALLER, at the Brimsdown Nursery, Enfield Highway; and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The Annual Sale of Winter Flowering HEATHS and other STOCK will take place as usual at the Brimsdown Nursery on THURSDAY, September 17.

Friday Next.

ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 14, at half-past 12 o'clock, IMPORTED ORCHIDS, comprising Orchid species *Ophidium tigrinum*, *Epilobium* species, *Cattleya citrina*, *Laelia majalis*, and others. Also a fine Collection of well-grown ESTABLISHED ORCHIDS, including *Cattleya Reineckiana*, *Cologyne*s, *Cymbidium*s, *Odontoglossum*s, *Dendrobium*s, *Phalenopsis*, *Laelas*, *Cattleyas*, *Cypripedium*s, &c.; together with two cases of imported *Laela* species, sent home by Mr. Pechacek; and 90,000 PALM SEEDS, *KENTIAS*, *LANTANAS*, and *CORYPHA AUSTRALIS*.

On view Morning of Sale, and Catalogues had.

Friday Next.

LÆLIA SPECIES. Two cases sent home by Mr. Pechacek. 93,000 PALM SEEDS. Consisting of 50,000 *KENTIA FOSTERIANA*, 400 K. *BELMOREANA*, 50,000 *LANTANA BORBONICA*, and 20,000 *CORYPHA AUSTRALIS*.

MESSRS. PROTHEROE and MORRIS will include the above in their SALE of ORCHIDS on FRIDAY NEXT, August 14.

On view morning of Sale, and Catalogues had.

Monday August 17.

DUTCH BULBS. SPECIAL TRADE SALES.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, August 17, THURSDAY, August 20, MONDAY, August 24, and THURSDAY, August 27, large consignments of named Hyacinths, Tulips, Crocus, Narcissus, and other Dutch Bulbs, together with white Roman Hyacinths and Paper White Narcissus, received direct for unreserved sale. These early auctions have been specially arranged in lots to suit the trade, and other large buyers. The Auctioneers will be pleased to enter the names of intending purchasers in their permanent lists, who may desire a regular supply of catalogues for these sales.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

THOMAS B. JAMES (many years with Protheroe & Morris) will SELL by AUCTION, Without Reserve, at the Temperance Hall, Temple Street, Birmingham, on WEDNESDAY NEXT, August 12, 1891, at 12 o'clock, about 700 lots of ORCHIDS, chiefly in Flower and Bud, by order of Messrs. Hugh Low & Co. of Clapton, London, and Messrs. Charlesworth, Shuttleworth & Co., of Bradford and London.

Commissions carefully executed, and purchases promptly despatched. Catalogues to be had of the Auctioneer, 53, Union Passage, Birmingham.

FOR DISPOSAL, a small FLORIST and JOBBING BUSINESS, with Sweet Shop attached, opposite a Board School. Genuine.
 Apply B. C. Fuller, News Agent, High Street, N. Finchley.

A Genuine Compulsory Sacrifice.

FLORIST, SEEDSMAN, and JOBBING BUSINESS for IMMEDIATE DISPOSAL, in a London suburb, within 25 minutes' drive of Covent Garden, doing a good trade, with plenty of scope for increasing same. Handsome Shop, with Dwelling-house and small Nursery.

Price £250. IF SOLD AT ONCE.

Honestly worth £500, but Owner is compelled to give up, owing to private circumstances, which will be satisfactorily explained. Price includes Stock in shop and houses, nearly new Florist Van, Horse, 6 Greenhouses, well heated; Shop-fittings, Counters, Tools, Barrows—in fact, everything.

Every investigation courted. The goods on the place alone are worth more than the price asked.

Apply, FLORAL HALL, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Nurserymen and Florists.

Near Marble Arch and in main thoroughfare.

TO BE SOLD, a NURSERYMAN'S and FLORIST'S BUSINESS (old established), large Glass Houses, Pits, &c., 9-Roomed House, in good repair, and Stable. Price, including long Lease, Horse, Harness, Van, Cart, &c., very moderate.

Full particulars of W. N. INMAN, Surveyor, 124, Maiden Lane, N.W. Folio 1383.

FOR SALE.—GLASSHOUSES, in GUERNSEY. About 1200 feet heated with Hot-water Pipes, in thorough working order; water laid on; packing-shed, store, and every convenience. One of the most compact properties on the island. Situated in the centre of the fruit growing district, 1 1/2 miles from the town. Satisfactory reasons for disposal. Full investigation courted. Apply—
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TO BE SOLD, on very advantageous terms, about ONE ACRE of LAND, with good HOUSE and RANGE of GLASS, about 350 feet long, close to station, and near a good town of about 200,000; good market. Soil and position excellent; just built. To a good man with about £200 or £300 a chance rarely to be met with.
 J. A. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SPAN-ROOF ORCHID-HOUSE.—A Lady wishes to dispose of a Span-roof Orchid-house, built by Boulton & Paul, five years ago. Complete in every particular; in excellent preservation. It is 60 feet x 12 feet, divided into three parts, to vary temperature.
 Address, N. Y. Z., Morley, Forest Hill, S.E.

To Nurserymen, Florists, and Others.

TO BE LET, at Tottenham, and about TWO ACRES of LAND, with good HOUSE, STABLING, and OUT-BUILDINGS. The Land is covered with Glass, which the out-going Tenant would be willing to Sell by Valuation. Full particulars of Mr. ALFRED RICHARDS, Auctioneer and Estate Agent, Lower Tottenham.

TO BE LET, GRASS LAND (1 to 10 Acres), suitable for Nurserymen and others; on Lease for seven, fourteen, or twenty-one years. Rent, from £5 to £12 per acre, with the option of purchasing the Freehold within the first seven years; no title; near the main road, Enfield Highway; about nine miles from London. Apply to—
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J. WEEKS and CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers.
 King's Road, Chelsea, S.W.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.
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SHREWSBURY GREAT FLORAL FÊTE.
 AUGUST 19 and 20, 1891.
 ENTRIES CLOSE AUGUST 12 (Thursday Morning Post).
 ADMITT AND NAUNTON, Hon. Secs.

Cercle Horticole Van Houtte, Leideberg, Ghent.
GREAT GENERAL HORTICULTURAL EXHIBITION, under the patronage of the Government and the Provincial and Town Councils. From SUNDAY, August 23, to SUNDAY, August 30, 1891. For Programmes and Schedules, address—
 ERNEST DELARUYE, Secrétaire du Cercle V. H., Chaussée de Bruxelles, Leideberg, Gand.

VISITORS TO THE CONTINENT are cordially invited to visit the Establishment of L'HORTICULTURE INTERNATIONALE; Directors, Messrs. J. LINDEN and LUCIEN LINDEN, Leopold Park, Brussels. This grand Establishment contains the FINEST and LARGEST STOCK OF ORCHIDS and NEW PLANTS in Europe. Large Conservatories, &c. English CATALOGUE sent gratis.

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J. W. SILVER invites inspection of his immense Stock of PALMS, the Cheapest in the Trade, of *KENTIAS* of all kinds; *CORYPHA*, *SEAFORTHIA*, *COCOS*, *PHENIX*, and many others. LIST of prices on application.

Streatham and Norbury Nurseries, S.W.; and Marlborough Mansions, Victoria Street, Westminster, S.W.

Dutch, Cape, and Exotic Bulbs.

ANT. ROOZEN and SON'S CATALOGUE for Autumn, 1891, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants (104 pages in English) is now ready, and will, as usual, be sent, post-free, on application to their Agents, Messrs. MEERTENS and CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.; or themselves direct, at Overveen, near Haarlem, Holland.
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Lemoine's beautiful new *GLADIOLI*, in mixture, per dozen, 4s. 6d.; *RANUNCULUS*, showy sorts, mix'd, 2s. 6d. per 100; beautiful new large-flowered single 'POPPY' *ANEMONES*, mix'd, 4s. 6d. per 100; *ANEMONE FULGENS*, the beautiful scarlet Windflower of the Riviera, 4s. 6d. per 100; per 1000, 40s. Sweet-scented *PEARL TUBEROSAS*, 3s. per doz.; per 100, 18s.
 Carriage Free on receipt of Post Office Order.
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GARDEN.

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Price Lists of all our Specialities and Testimonials on Application.
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 Kent, who were first, second, and third, respec-
 tively, amongst thirteen competitors.

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 above occasion, and for years, by the three
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 in pronouncing her long-continued success is
 mainly due to the lovely flowers supplied by us).
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THE
Gardeners' Chronicle.

SATURDAY, AUGUST 8, 1891.

FRUIT PACKING.

IT is certain that there is still much to be
 learned in respect to methods of treating
 Apples and other fruits in order to preserve
 them for market. The importance of the subject
 from a chemical standpoint has been acknow-
 ledged by Professor F. H. Storer, who has
 endeavoured to answer the question, "What
 would be the best treatment for Apples and
 other fruits before (as well as after) packing, to
 prevent decay?"

The necessity of handling fruit gently and of
 keeping it cool and not too dry is generally
 recognised, and it is known, too, that in so far
 as may be possible it will be well to shield fruit
 from "germs" which infest the air. But the
 question how best to put these ideas into practice
 is still open, and not a little complex.

An Apple or any other fruit is really a living
 thing. No matter how ripe it may be, it is still
 alive, and undergoing progressive physiological
 changes, which are like to those which occur in
 plants and animals. Long after it has been
 plucked from the tree, the Apple continues to
 develop and to ripen, until it has passed through
 the seven ages which the poet tells of, and has
 run out a term of life which may justly enough
 be compared with the threescore years and ten
 which span our human existence. It is hardly
 to be supposed that it would be possible wholly
 to arrest this natural course of life of the ripen-
 ing Apple, as a means of preserving it in an
 edible condition. To stop the life-action of the
 fruit would cause its death, and death would be
 followed by chemical changes which could hardly
 fail to alter in some way the texture and flavour
 of the materials of which the fruit is composed.
 The rapidity of the change would very greatly
 depend upon external circumstances.

It is true enough that, by keeping the Apple
 cool, it may be made to ripen with extreme slow-
 ness, and thus be granted a long lease of life.
 This is done to-day in many fruit-preserving
 establishments; and it is to be noted that,
 besides putting off, as it were, old age and decre-
 pitude, the method of refrigeration has the
 further merit of keeping quiet, or inactive, the
 microscopic organisms which cause decay.

In cases where refrigeration is impracticable,
 the aim should be to shield the fruit from the
 attacks of the microscopic organisms just re-
 ferred to. Many kinds of Apples—the Russet,
 for example—are tolerably well protected already
 by tough, and, as it were, varnished skins, which
 act as armour to repel the pigmy foe. Every-
 one knows, for that matter, how much more
 quickly decay sets in when the skin of the Apple
 is broken, or even bruised, than when the skin is
 whole. Since the air of most localities, and
 especially of fruit-rooms badly ventilated, con-
 tains many germs of the organism which causes

decay, some slight advantage is probably gained by keeping fruit covered in order to prevent the germs from falling upon it. The putting of fruit into boxes or barrels, the burying of it in sand, or the mere throwing upon it of a layer of straw, or a clean cloth, or some boards, probably helps to shield it. But care must be taken not to pack or cover up fruit in such wise that the conditions shall be favourable for its sweating, for whenever moisture is deposited upon fruit, decay is greatly favoured. It is not well either to leave fruit lying in great heaps or to pack it in very large boxes, lest heat enough be developed to hasten the ripening and to bring on decay, the germs which attach themselves to the fruit gathering strength from the favourable conditions which surround it.

One fundamental trouble is that there are always some germs or microbes clinging to the fruit itself when it is taken from the tree, which are ready to avail themselves of any circumstances, such as a conjunction of moisture and warmth, which may be helpful for their development. If it were but possible to "sterilise" fruit completely, namely, to free it from all adhering germs, it would be a comparatively easy matter to hinder decay by keeping fruit in receptacles to which air should have no access until it had been filtered or made to pass through some disinfecting or germicide liquid.

Indeed, a layer of cotton-wool placed upon fruit that had been completely freed from organisms—supposing it were practically possible thus to free it—would be sufficient to prevent it from rotting. The great difficulty in this matter is to get a fair start.

It is not improbable that some antiseptic agents may one day be discovered, which when applied directly to fruit may serve a useful purpose for killing the attached germs and for retarding decay. But there will be needed agents which while killing the peccant microbes shall not kill at the same time the living cells of which the fruit itself consists. A useful approximation to this suggested system of antiseptics and coverings is seen to-day in the use of salt-marsh hay, which acts fairly well for preserving fruits that are packed in it. This material has the advantage of being both hygroscopic and germicide in some small degree.

For fruits which are liable to begin to decay at the core, as happens with many Pears, it is well to smear the ends of the stems with melted wax, or with a hardening varnish, to prevent the entrance of microbes through this unprotected inlet. *J. J. Willis, Harpenden.*

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM HENNISII, *Rolle, n.sp.**

This is a very elegant and pretty little *Odontoglossum*, sent to Messrs. Charlesworth & Shettleworth & Co., of Heaton, Bradford, and of Clapham, by

* *Odontoglossum Hennisii*, n. sp.—Pseudobulbs densely tufted, ovoid-oblong, subcompressed, 1½ inches long. Leaves oblanceolate-linear, acute, 4–6 inches long, 6–10 lines broad. Scape 8 inches high, 6-flowered. Bracts lanceolate, acute, 2 lines long. Pedicels 1 inch long. Sepals spreading, lanceolate, acuminate, a little more than 1 inch long, yellow, with a large brown area near the base and another about the middle. Petals rather smaller, yellow, with several brown spots in the middle and three or four brown lines near the base. Lip free, unguis 2 lines long, limb spreading, three-lobed, 10 lines long by 8 lines broad; side lobes rounded, denticulate; front lobe triangular-ovate, very acuminate; disc with numerous slender somewhat branched filaments from 1 to 2½ lines long; ground colour white, the front lobe reddish-brown, also the basal part of the disc and a few spots of the same colour on the margin of the side lobes. Column clavate, 7 lines long, yellowish-white, wings brown, nearly entire, the triangular acute apex slightly denticulate. Native of Peru or Ecuador. *R. A. Rolfe.*

their collector, Mr. W. Hennis, from the southern part of the Andes, either Peru or Ecuador. In size and colour it closely resembles *O. odoratum*, Lindl., but its real affinity is with *O. crinitum*, Rehb. f., as the shape of the lip is very similar in the two, while both possess a peculiar bearded crest, consisting of numerous filiform or thread-like hairs. *O. crinitum* is a native of New Granada, and has a very zigzag rachis with very rigid spreading distichous bracts, and the flowers rather crowded, while in our novelty the rachis is nearly straight, the flowers larger, and far more distant, and the bracts different. In *O. crinitum* also the crest is more densely bearded. It is a very interesting and attractive little plant. *R. A. Rolfe.*

ASH ANALYSIS OF WHITE GLOBE ONIONS.

From several barrels of White Globe Onions grown at Green's Farms were selected twenty-two bulbs of fair size, which weighed five pounds and one ounce.

After drying and pulverising them, a weighed sample of the powdered material was burned with the usual precautions, and the ash submitted to analysis with the following results:—

PER CENT. COMPOSITION OF THE PURE ASH. (Station No. 3905)

Potash	43.49
Soda... ..	1.26
Lime	10.87
Magnesia	4.48
Oxide of iron	1.07
Phosphoric Acid	19.03
Sulphuric Acid	15.98
Chlorine	2.33
Sand and Silica	1.96
	100.53
Deduct oxygen equivalent to chlorine	53
	100.00

The fresh Onions contain .27 per cent. of nitrogen and .48 per cent. of pure ash.

From these data are calculated the quantities of these ingredients contained in one ton, 2000 pounds of Onions as follows:—

NITROGEN AND MINERAL MATTER IN ONE TON OF ONIONS (BULBS).

Nitrogen	2.70 pounds.
Phosphoric Acid ... ..	.92 "
Potash	9.03 "
Soda ... ..	.06 "
Lime ... ..	.52 "
Magnesia ... ..	.21 "
Oxide of iron ... ..	.05 "
Sulphuric Acid ... ..	.77 "
Chlorine ... ..	.11 "
Sand and Silica ... ..	.09 "

American Bulletin.

FRANÇOIS LEGUAT AND HIS PLANTS.

(Continued from p. 96.)

THERE is at Rodriguez, as also in the Ile de France, and at Bourbon, a shrub which may be said to be the finest of all the Brambles. At the Ile de France I was told that they call it Bois de Sentier,* because no one can approach it without feeling the pricks of its spines, with which the stem, the leaves, and the fruits are bristling. At Bourbon it is named Cadoque. It is absolutely the same as that which is named Caretti, in the second volume of the *Hortus Malabaricus*—Inimboy, at Brazil, according to Marcgrave, Liv. i. chap. 8, and the Bon Duc of the great species, by other modern naturalists. I have seen them in our islands grow to a height of 7 or 8 feet. The seed of the Caretti of Rodriguez is larger than that of the two other islands; its colour of dark grey predominates over the white, whereas at Bourbon and in the Isle of France it is nearly green. In fact, at Rodriguez it has a flattened elliptical shape, and in the other islands that of an elongated ellipsoid. This seed is a very good vermifer; the wood and root in decoction form a good sudorific. It may be

* Bois de Sentier. *Scutia Commersonii*. Cadoque or Bonduc, *Cesalpinia Bonducella*.

added that in our islands this tree is a sovereign remedy for gonorrhœa, however virulent; some people extend its virtues even to other venereal diseases. I have opened many fruits of the Bonduc. I have always found two seeds, never room for a third. I have never seen this shrub in blossom.

That which I am told in Rodriguez is called Bois Hollandois,* is a very small tree or shrub, from 4 to 5 feet in height, including its branches; the leaf resembles somewhat that of a Peach; it is a bright green, and of agreeable aspect. These trees form small forests, very inconvenient to pass through, or, I should say, traverse. Their stems, although small, are very tough, and I am told that the wounds which they occasion to those breaking through them are extremely dangerous. I have not seen them in blossom or fruit.

The Bois de Cannelle † is a handsome shrub, not even so high as the Bois Hollandois; it only puts forth leaves at the extremity of its branches, in a way that it appears like the hand of a man. At the extremity of each branch is a bunch of leaves; these leaves are of a very fine bright green, and coated with a species of gum. The wood is aromatic, and very good, it is said, for baths. In addition, this shrub no more resembles the Cinnamon (cannelier) than does the Bois d'Olive to the veritable Olive tree. M. l'Abbé de la Caille (*Journal Historique*, p. 226) speaks of another Bois de Cannelle, which I have not recognised.

The Box ‡ of Rodriguez forms a very fine shrub; it otherwise appears to me to resemble absolutely our own, excepting that the fruit of that of Rodriguez has not the species of (*piéd de marmite*) tripod which is remarkable in ours, the three points, which form three feet, being close together, and nearly touching near the heart or eye of the fruit.

There is another shrub closely resembling the preceding. I have, indeed, been deceived by it at first sight. I have been surprised by the facility with which I pulled off the branches. Scarcely had I lifted with a knife some part of the bark when my fingers were found as if bleeding. I have thought I had been wounded. On washing them in a neighbouring rivulet, there did not appear the least sign of a wound. The outer skin of this Boxwood, if I may use the term, covers a thicker skin, filled with a sort of gum, very sticky; the juice of this gum was red, its odour resinous, and very strong. It is said that this shrub becomes a tree, and that then its leaves resemble more nearly those of the Box; it is also said that its flowers have a very sweet smell.

Rodriguez, besides, produces Sugar-canes, Mustard plants, whose leaves we eat in the shape of Spinach; pepper in Pimento, and especially small pepper, called Piment du Diable,§ or Piment enragé, on account of its hotness; Patates (a species of *Convolvulus*), which some call Patates à Durand, whose young leaves applied within to ulcers are an excellent suppurative, as I have myself experienced; but applied without are, I am told, a sovereign desiccative. Sow-thistle; Purslain, which is not regarded as wholesome, contrary to the authority of François Leguat, who valued it highly; *Scolopendria*, whose fronds are 4 or 5 feet long, without being jagged; Capillaires, Prickly Poppies, Poppies, Chiendent, Tobacco, a tree, rather nice, from which they served us its leaves,|| cooked like Spinach, under the name of Senna leaves, which name sufficed to disgust me with the dish, although I was persuaded that it was not the veritable Senna; in short, the island produces an infinity of other trees, shrubs, and plants, among which I am assured that there are only two which can be regarded as dangerous. I could not ascertain their names. I felt much difficulty in defining the first of these two poisons. It is a species of *Dithymale*, which has not any leaves, or, as

* Bois Hollandois. What is this he?

† Bois de Cannelle, *Laurus cupularis*, or *Oreodaphne*?

‡ Bois = *Murraya exotica*.

§ Piment petit = *Capsicum frutescens*. Gros Piment = *C. cordiforme*.

|| Probably *Moringa pterygosperma*, or Brède morouge, cultivated and eaten as Spinach.

one might say, whose leaves are cylindrical, 2 or 3 inches long, of the thickness of a line. Each leaf or each stalk is terminated by a sort of dome, which is not thicker than the circumference of the stalk; above this dome is produced a button, which encloses apparently the germ of the flower and of the fruit. The milk of this plant deprives one of eyesight if touched by it, and it is added that the milk of the woman is the only remedy known to recover the sight.

The other dangerous plant is a poison properly so-called, its trunk is about the thickness of a Briar, it grows to 3 or 4 feet above the ground, it cannot support its branches, and attaches them, if it can, to trees and neighbouring shrubs, otherwise it leaves them to fall and creep on the ground; the leaves have some resemblance to those of the Orange, except that they are more rounded above. By stripping the leaves, the bark, and even the wood and roots of this tree, they extract a juice which is an extremely prompt poison. I have not seen at Rodriguez any flower like that of which François Leguat speaks. (Vol. i. p. 109.)*

This is all that the Abbé Pingré tells us of the flora of Rodriguez during his stay there, and it is interesting as a small contribution towards the chronological history of the plants in the Mascarene Islands. Perhaps some contributor to the *Gardeners' Chronicle* may help to identify some of those plants

According to M. Ernst Benary, of Erfurt, who sent it out in 1886, and who has obligingly supplied us with information concerning it, it was raised in Germany, and is "presumed to have sprung" from *M. alpestris robusta grandiflora* (Eliza Ponrobert), a



FIG. 19.—"HEN AND CHICKENS" FORGET-ME-NOT, MYOSOTIS VICTORIA.

Showing the extremity of the main stem, with the central flower, and the lateral racemes, in which the flowers have ten-lobed corollas, &c. (See text).

name so formidable that we do not wonder the plant is a deformity! It was fully described in Mr. Benary's list of novelties in 1886, and again in his general catalogue for 1886-1887. "It comes quite true from seed."

Last year and this the plant was shown at the Royal Horticultural Society by Mr. W. Marshall from his garden at Bexley, where it originated no one knows how amongst plants of ordinary *M. alpestris*. Mr. Marshall did not, so far as he knows, receive seeds from Germany or elsewhere. The plant received a First-class Certificate when last shown under a name which it is desirable not to perpetuate, as that of "Victoria" has clearly the right of precedence. Mr. Jones, gr. to Edmund Hyde, Esq., of Ealing, kindly contributes the following information as to its culture:—"The plants grow about 5 to 6 inches in height, forming compact little bushes covered with flowers. Ours have received the same treatment as the old variety *dissitiflora*. It is quite hardy, having withstood the late severe winter without any protection whatever. I consider it a valuable variety." It is certainly a pretty form, and one well worth growing, but its chief interest, as we have said is botanical. We will allude to some of the principal points. The stem is as thick as a swan-quill, compressed, hollow in the interior. The leaves are sessile, oblong, scattered, and from the axil of each of the uppermost ones proceeds a stalked and coiled raceme (see fig. 19). In fact, instead of, as in the ordinary Forget-me-not, having a single curved cymose inflorescence, with the flowers on one side, there is here a compound inflorescence, consisting of several lateral flower-stalks, each with a coiled raceme, or rather, racemose cyme at the top. The main stalk ends in a mass of flowers, forming a terminal head or ring, in which the parts are so inextricably confused that it is difficult to ascertain either their numbers or their relative relation. In the ground plan the artist has succeeded in giving an intelligible explanation (figs. 20, 21). So far then we seem to have a case of fasciation, together with fusion, or running together of several of the upper flowers into one mass, somewhat similar to the cup-shaped flower so common in some seasons in the Foxglove.

But this compounding and branching of the inflorescence is not so remarkable as the construction of the individual flowers. Each flower, in fact, has

eight, nine, or ten sepals, as many petals, stamens, and ovary-lobes, the styles of which latter are united so as to form a tube through which passes an abortive and rudimentary secondary flower (median proliferation). It would thus appear as if each of the lateral parts of the flower were divided by lateral branching, or "chorisis," so that the number of parts in each floral ring or whorl is increased, while the whorls themselves are not augmented.

In the accompanying figures, fig. 19 shows the extreme tip of one of the branches. In it the "hen-and-chicken" arrangement is well shown, the "hen" being represented by the central or terminal compound flower, from beneath whose sheltering protection emerge the side branches with the "chickens," or lateral flowers, each with their ten segments.

Fig. 20 is an enlarged vertical section through the central flower, G1 indicating the glands or processes which form so conspicuous a feature in the flowers of all the species of *Myosotis* and other Borage Worts.

Fig. 21 shows a ground plan of the same composite flower, and makes it evident that there is an outer ring consisting of several confluent flowers, the ring surrounding five other centres of growth arranged around the central axis. The structure is therefore complicated and curious, the most interesting features being its reproduction from seed, which is now known to have occurred during several

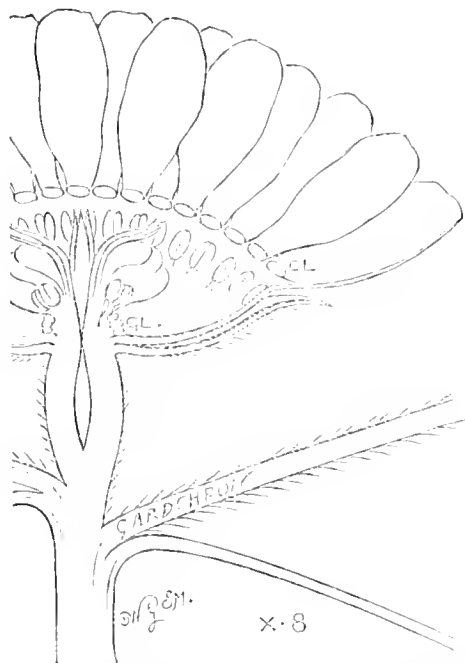


FIG. 20.—"HEN AND CHICKENS" FORGET-ME-NOT, MYOSOTIS VICTORIA, ENLARGED VERTICAL SECTION OF A FLOWER.

Section through the centre of the terminal flower; one of the side branches bearing the "chickens" is shown springing from the axil of a leaf, below the terminal flower.



FIG. 21.—"HEN AND CHICKENS" FORGET-ME-NOT, MYOSOTIS VICTORIA, A GROUND PLAN OF A FLOWER MAGNIFIED, THE BLACK CRESCENTIC LINES REPRESENT PETALS CUT ACROSS.

which the astronomer observed, especially the two last-named, which have poisonous qualities attributed to them. *S. P. Oliver.*

(To be continued.)

MYOSOTIS VICTORIA.

THE "Hen and Chickens" Forget-me-Not, of which we give illustrations, is of special interest just now when the question of the inheritance, or otherwise, of malformations is attracting so much attention among scientists. Its history is also curious.

* This is the flower, white as a Lily, and like a Jessamine, which Professor Balfour supposes to have been some kind of Orchid, which has probably become extinct.

years, and its possible spontaneous origin in a garden at Bexley, as well as in Germany.

The plant would form a most interesting subject for a botanist with time and patience at his disposal to examine the course of development of the flowers *ab initio*, and also the arrangement of the vascular bundles from below upwards. By such an investigation the true explanation of the peculiarities here mentioned might be arrived at.

For those who do not care to pry into secrets, the unravelling of which demands special knowledge as well as patience, we commend the flower for its beauty alone. In a genus containing so many lovely members, we will not venture to say that this is of surpassing merit, but, at any rate, it is beautiful and desirable for variety sake, quite independently of its remarkable structure.

For the specimens whence our notes are taken, we are indebted to Mr. W. Marshall, the Chairman of the Floral Committee, and to Edmund Hyde, Esq. M. T. M.

IRISES.

BEAUTIFUL as many of the Orchids are, they have very close rivals in some of the Irises, for what can be more lovely than the different varieties of these, following on, as they do, in long-continued succession? The first to come into flower in quantity is *I. germanica*, which is very hardy, and will grow almost anywhere; but the situation most suitable for it is an open sunny one, and where they have plenty of root moisture. The way, I think, in which these Irises do best, and are most easily managed, is in masses by themselves, as then the numerous spikes of blooms, of such varied colours, intermingle and make a fine show.

When the growths of the plants become too much crowded, as they soon do, it is an easy matter to pull them up where they are crowded; or lift the whole lot and replant. If this is decided on, the ground should be deeply dug, and be well dressed with rotten manure. Beds or borders that are left as they are should have a rich top-dressing every spring before the plants start into growth, as, like many other perennials, Irises soon get their crowns or rhizomes high above the soil. Following close on the heels of the German kinds come the Spanish, which are very beautiful flowers with rich colours and shades of colour. Unfortunately, these are not so hardy and enduring as *Iris germanica*, but there is no difficulty whatever in growing them, as in ordinary light and dry soils they may safely be left without protection, and in such as are not favourable, they should be taken up and stored during winter, as they are bulbous-rooted, and keep well in sand.

Iris Kämpferi produces gorgeous flowers, but to grow them well they should be so planted that their roots can descend into moisture-holding soil near a pond side, or at the sides of a stream, but in most gardens it is necessary to afford them frequent watering. The way to increase *Iris Kämpferi* is by division, and they also come readily from seed, plants flowering freely at a year old, if raised early in spring. The English Iris are also very showy, and have bulbous roots, of a larger size than those of the Spanish, the plants, too, being of stronger growth, with bigger, longer, and broader leaves than those of the Spanish. They grow freely in any ordinary garden soil, and when once planted are best left very much to themselves. *J. Sheppard*.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM MULUS HOLFORDIANUM.

NOTWITHSTANDING the fact that collectors had been in the cool regions of New Granada and seen the plants thriving under conditions so very different to those they were subjected to at home, nothing appears to have been said by them relative to this matter; this was the great drawback to the establishing of South American Orchids in our collections, and it was not until after the year 1850 that the observations of Warszewicz upon this very subject bore fruit, in an experiment which was carried out in the establishment of the late Messrs. Thomas Jackson & Son, at Kingston in Surrey, who started a cool Orchid house, and many were the doubts and fears expressed for the plants therein through the first winter; but they came through well, and the example set soon became common in the land. It was the first cool house that ever existed in this country, and in it were saved and flowered many of the last discoveries of Warszewicz. * * * In its native home *O. mulus Holfordianum* occupies a wide range, and is found at between 7000 and 9000 feet elevation, so that it is a thoroughly cool plant. It requires to be potted in well-drained receptacles, using for soil, peat that has been well beaten to remove

the earthy parts, and to this may be added some chopped sphagnum moss, the whole to be made very firm and hard. The plant should be elevated a little above the rim of the pot, and during the growing season an abundant supply of water will be necessary, but in the dull winter months less should be given; yet at no time in the year should the plant be dried. Care and attention must be given these plants during the hot summer months, as we have found this species and its near allies to be extremely subject to the attacks of thrips and red-spider—the first, doubtless, encouraged by want of ventilation, and the second through the atmosphere being kept too dry. *Orchid Album*, vol. ix., part 108.

MASDEVALLIA MACRURA

grows naturally at some 6,000 or 7,000 feet elevation, and at this altitude, where Masdevallias exist in great quantities, the atmosphere is much rarefied and the temperature very cool. The usual state under which the Masdevallias of New Granada grow we are told is frequent and heavy rains for nearly the whole year, and dense fogs, with the temperature in the morning about at freezing point. To imitate such conditions under artificial treatment is almost a matter of impossibility, but we have found that these plants thrive best under the very coolest treatment; in the very hottest part of the year the thermometer should not exceed 70°, and even a few degrees lower would be better. To effect this proper care should be given to shading from the sun by keeping the atmosphere well charged with moisture and by giving a proper amount of air. This treatment in a lean-to house with a northern aspect will result in giving plants with clean healthy leaves, and in due season an abundance of flowers. Masdevallias will succeed well with many species of *Odontoglossums*, such as *O. triumphans*, *O. Hallii*, *O. crispum*, &c., but when a large collection is aimed at we would always recommend a separate structure for their maintenance. This plant, being a large and vigorous grower, thrives best in a pot, which should be nearly filled with drainage, and for soil use a little peat fibre and chopped sphagnum moss, pressing it down firmly, but not using a great quantity of mould about its roots. Masdevallias grown under the above conditions will not require so much attention to keep them free from thrips as when subjected to more heat, but care must be continually given to prevent the accumulation of insects upon them. The worst that can be allowed to gain a footing are the red and black thrips, as they leave large black marks upon the under side of the leaves which cannot be eradicated. *Orchid Album*, vol. ix., part 108.

PHAJUS HUMBLIOTI

Is in flower in many varieties in Messrs. Sanders' Orchid establishment at St. Albans, and is an exceedingly useful Orchid for flowering at this season of the year. The plants seem to grow very freely in a house where the temperature was not very high when I saw them—about the last days of July; indeed, it could not be, as the day was cold, with no sunshine, and none of the Orchid-houses were artificially heated. Being an importation from Madagascar, and found growing in the shade of trees, the plants require shade from bright sunshine, and the collector, M. Leon Humblot, after whom this species was named, stated that it was in a moist state at the roots all the year round. It does not form pseudobulbs like some Orchids, and it would, therefore, be a mistake to dry it off. The upright spikes of flowers show well above the broad, deep green leaves; the sepals and petals are of various shades of rosy-purple, and the spikes seem to be just the thing for the centre of medium-sized vases of cut flowers. *J. D.*

CATASETUM CALLOSUM.

Dr. Lindley figures and describes in the *Botanical Register*, 1841, t. 5, five very singular looking species of *Catasetum*, and amongst them *C. callosum*. A few years later *C. callosum grandiflorum* is also figured in the *Botanical Magazine*, t. 4219. Sir Wm. Hooker likens the flowers of this plant "to the body and legs of a great spider."

This plant is now in flower in Messrs. Sanders' nursery at St. Albans. I thought it was one of the most singular-looking Orchids I ever saw; the sepals and petals are of a dull reddish-purple; the pointed lip, dark green at the base, is terminated with a reddish-purple blotch, the green part being furnished with crimson spots. The form of the flowers is extremely curious. Another form of it is figured in the *Botanical Magazine*, t. 6648, with brown sepals and petals, and the lip differing slightly by being of an uniform green colour, and speckled with red. Associated with it was *C. Bungeorothi*, which produces male and female blossoms on the same plant. *Cynoches chlorochilum* also formed an interesting feature in this small group of plants. All were growing in baskets of teak, suspended from the roof. The large yellowish flowers of this last-named species are very striking. This class of Orchids should not be altogether neglected for more showy, but nothing like such interesting, plants. *J. D.*

AERIDES LAWRENCEE.

This is the most handsome *Aerides* yet introduced to our gardens, and like many fine things in the Orchid family we owe its introduction to the enterprise of Messrs. Sander & Co., St. Albans, in 1883; and there is now in flower in their nursery a dozen beautiful varieties of this and *A. Sanderianum*, a very nearly allied form. The sepals and petals are creamy white, pure white or pale yellow, distinctly blotched at the tips with amethyst-purple. The lip is prolonged into a quaint horn-like spur, and the very large flowers, rather closely set on long pendulous spikes, have a grand effect at this season of the year when Orchid flowers of any kind are so scarce. I counted twenty-eight flowers on the longest spike, but many more have been produced on one. The plant is first noticed in the *Gardeners' Chronicle* for 1883, vol. xx., p. 369. The plant, described "as the best and most beautiful *Aerides* ever introduced," was sold for 235 guineas at Stevens' sale rooms. It is from the Philippine Islands, is not of difficult cultivation, and being now moderate in price, it should be found in every collection of Orchids. *J. D.*

FORESTRY.

LARCH CANKER.

Mr. J. B. CARRUTHERS has a useful article on this subject in the last part of the *Journal of the Royal Agricultural Society*. The real cause of the disease was not detected till 1859, when the late Sir Walter Trevelyan called attention in the *Gardeners' Chronicle* to his discovery of a small fungus associated with the disease. This was submitted to Mr. Berkeley, who wrote on the subject in our columns on Dec. 17, 1859. The subsequent observations of Wilkomm, Hartig, Saccardo, and Marshall Ward, are summarised by Mr. Carruthers. The fungus was originally called a *Peziza*, but is now referred to *Dasycephala*, under the name of *D. calycina* var. *Trevelyanii*, *D. calycina* proper being found on the Scotch Pine. The large fungus attacks only the living tissues, while the form that is found on *Pinus sylvestris* grows on the dead branches.

Professor Marshall Ward is of opinion that the fungus cannot penetrate the sound bark, but infests it only through some wound or injury, such as may be occasioned by late frosts; but Mr. Carruthers finds that the spores germinate also on the uninjured bark. Minute white cup-shaped fungi like cluster-cups, orange inside, form the only part of the fungus visible to the naked eye, the spawn permeating the living bark and the young wood under it in all directions, and availing itself of the nutritive juices which the plant prepares for its own use. The disease is purely a local one, there being no connection between the disease and the roots of the tree. Each fresh canker is caused by a new and independent attack, and is entirely due to the germination of the spores of the fungus on the bark, "and is not in any way the result of the physical causes

which have been credited with it, such as confinement, excess of moisture, cold or wet seasons, spring frosts, except so far as these have favoured the growth of the spore by providing the moisture necessary for its germination. The only remedy possible is to examine the young trees carefully, and at once to burn all those found to be affected. Even if the white cups be not present, the dark and flattened condition of the bark indicates the presence of the fungus, and should there be any doubt, the slightest cut with the knife will show the very dark colour of the injured bark. This injured

TREES AND SHRUBS.

STAPHYLEA COLCHICA.

Few plants can be forced better than the above, yet it is only here and there that it seems to be valued to any great extent, and grown in large quantities; perhaps it is that the difficulty of propagation blocks the way, or the price of the plant that is the cause of this. However, plants suitable for forcing may be obtained at a small cost; and as to the difficulty of increasing the stock, that is very

They are also increased by layers, which is a good method to follow; and if seeds are sown soon after they are gathered, which should always be in well-drained pots, and stood in a frame or pit in a temperature of 55°, some of the seeds will germinate in a short time, while others may not come up for eighteen months. When they have grown half an inch high they may safely be pricked out in pans, or round the rim of 6-inch pots, and put into a cold frame till they are of a size suitable for planting out on borders, and on no account whatever neglected in the matter of watering. The principal points to be



FIG. 22.—STAPHYLEA COLCHICA: FLOWERS WHITE.

portion may be cut out and burnt. Mr. Carruthers concludes by asking whether it would not be better to replace the Larch by other trees suitable to our climate. From this point of view we would point out the claims of *Thuia gigantea*, *Thuiopsis borealis*, Lawson's Cypress, *Abies brachyphylla*, *Picea pungens*, *Sequoia sempervirens*, as each and all promising subjects, though no doubt when cultivated on a large scale, they too will sooner or later be attacked by some pest or other. We congratulate Mr. J. B. Carruthers on his very useful essay, and trust we may have more from his pen on the very important subject of plant diseases.

easily surmounted, if the following directions are carried out. If shoots that have been thoroughly exposed to the sun be taken off in July or August, and cut to 4 inches in length, using a sharp knife so as to make a clean cut below a joint, placed in light soil composed of peat and loam in equal proportions, with a good sprinkling of silver-sand and one-third good cocoa-nut fibre, the pots plunged up to their rims in a close case in a temperature of 60°, giving the cuttings a good watering with a fine-rose water-can, and an occasional watering overhead, shading them from direct sun's rays until they have formed roots, they will root readily.

kept in view with plants that are intended to flower before their usual time is to have the wood in a matured condition, as insufficiently ripened wood cannot be depended on to bloom well.

Plants for forcing can be taken out of their quarters and potted any time after the leaves have fallen, keeping them in a greenhouse before putting them into heat. They should not be subjected to a high temperature at first, but brought along gradually, and when the flowers are about to open, flowering will be prolonged if they be placed in a cooler house to expand. When the bloom is past, all necessary pruning may be performed, and the plants placed in

gentle heat, giving plenty of water, and using the syringe freely, and when a fair amount of growth has been made they should be hardened off, and planted out, or the pots plunged in a sunny aspect, and freely supplied with water, and during the growing period with liquid manure afforded occasionally.

Staphylea colchica (fig. 22) makes an admirable shrubby plant, being hardy, and once planted in good soil, and full sunlight, with a clear drainage, it will continue to bloom year after year. Out-of-doors the flowers are white, and the unexpanded flower buds delicate pink, but this disappears when the plants are grown under glass. There is a hybrid known under the name of *S. c. Coulombieri* ×, whose flowers are borne in drooping panicles of thirty to forty flowers each, of a larger size than those of *S. colchica*, nearly pure white, and the yellow anthers just peeping above the tips of the wavy petals. I have not seen it forced into bloom early, but in all probability it will come to the front as a forcer, as it opens its flowers unforced seven to ten days before those of *S. colchica*. It is being grown in rather large numbers by continental nurserymen, but I am not aware of its being found in any English gardens. Like *colchica*, it is hardy, and has endured the rigours of the past winter without being in any way injured. *H.*

THE SPANISH BROOM (*Spartium junceum*).

The bright yellow tall shrub, with rush-like branches, that at the present time is brightening many a crowded shrubbery, is the old Rush Broom which has been in English gardens for over three centuries and a half. It is common enough, but how seldom is its value as one of the few late summer flowering shrubs made the most of! It is generally planted at random in the mixed shrubbery, where it manages to thrust its head above the surrounding crowd; but to give full effect to it, one must have it as an isolated mass on a lawn, accompanied by some other shrub that groups well with it, and that flowers at the same time. The other day I saw a fine group of it rising out of a mass of *Philadelphus speciosus*, one of the best of the Mock Oranges, and being both in flower, I thought I had rarely seen a more showy shrub group on a lawn at the end of July. It is a plentiful and cheap plant in nurseries.

CISTUS LADRIFFOLIUS.

Among the rock Roses that escaped the severity of the past winter, is this species, which is perhaps the most beautiful of the many in cultivation, and one that no one need hesitate to plant in any garden where the soil is not heavy and cold, and the situation too bleak. Nothing among hardy flowers can exceed the beauty of this *Cistus* when crowded with flowers, as it has been every sunny day for the past month. The flowers of the original form are pure white, of satiny lustre, and 3 inches across; but this variety is not so striking as *maculatus*, which has, at the base of each petal, a broad blotch of purple crimson, which, with the tuft of yellow stamens, make an exquisite harmony of colour with the deep green of the foliage. It is a broad spreading bush naturally, and soon reaches its full height of about 5 or 6 feet, and spreads as much across. As it resents being crowded in a shrubbery, it should be planted by itself in the full sun, and if the soil be very heavy, it should be made lighter, or planted on a raised bed or bank. For hanging over a bold cliff of rock, provided it has plenty of soil to grow in, there is not a finer shrub. This *Cistus*, and *C. ladaniferus*, are the only two that are grown in nurseries where every tender shrub is excluded.

CYTISUS NIGRICANS.

A pretty shrub that does not seem to be known much in nurseries, is the dwarf Broom that has been in flower for the past fortnight in the Kew arboretum. It is a deciduous shrub, growing to a height of about 3 feet, and forming, in an open spot, a neat compact bush, which at flowering time is crowded with numerous erect racemes of clear yellow pea-shaped flowers, which are afterwards succeeded by numerous seed pods, so that the shrub is readily

propagated. I have sometimes seen it grafted standard high on the Laburnum, and then its elegant slender shoots, terminated by flower spikes, have a very pretty effect. It is a native of northerly Italy and adjacent regions, and was introduced 150 years ago, yet now it is not common. *W. G.*

KEW NOTE.

LILIUM GRAYI.—This charming little Lily, named in honour of Dr. Asa Gray, is now flowering in the Royal Gardens, and so far as we know for the first time in Europe. The stems are about 3 feet in height, bearing four to eight lanceolate leaves in whorls. The flowers solitary, and drooping, but often three or more on wild specimens, segments slightly spreading, but not recurved as in its near ally *L. canadense*. Flowers $1\frac{1}{2}$ —2 inches long, broader in proportion to the length than in *L. canadense*, deep reddish-orange colour, covered throughout with deep purple spots. The roots are very similar to those of *L. canadense* and *L. superbum*. This pretty species will no doubt improve under cultivation, and with several instead of one flower to a stem, it will certainly be an acquisition. There is nothing in cultivation quite like it, its bright colouring and dainty drooping flowers bespeak its future popularity. *D.*

REPORTS ON THE POTATO CROP, UP TO THE END OF JULY. SCOTLAND.

ABERDEEN.—Potato crops look well, but are very late; earliest sorts are a good crop and of good quality; all as yet perfectly healthy. *John Forrest, Haddo House, Aberdeen.*

AYRESHIRE.—Potatoes look well and healthy, but early sorts are small owing to the want of rain. The quality, however, is first-rate, no sign of disease as yet. *W. Priest, Eglington Gardens, Irvine.*

EAST LoTHIAN.—Kidney Potatoes are smaller than usual, but the quality is very fine, and free from disease. The heavy rains of the last fortnight have greatly improved the field varieties. *James Morrison, Archerfield, Drem.*

— Early Potatoes are very small, but a good crop, owing to not having any rain to speak of for several months. The much needed rain came yesterday, and, no doubt, will improve the late varieties. Field Potatoes are looking very well. *L. Dow, Newbyth, Prestonkirk, N.B.*

— Early crops suffering much from drought; quality good. Late sorts and field crops are looking remarkably well. Escaped spring frosts in this district. *R. P. Brotherston, Tynninghame, Prestonkirk.*

FORFAR.—The Potato crop, which is here an important one, promises to be a good one. Early garden Potatoes, though injured by frost, are excellent. In low-lying places the main crops were frosted on June 9, but they have recovered remarkably well; the sunny weather has forwarded the crop, and no sign of disease either in gardens or fields. *Jas. Whitton, Glamis Castle Gardens.*

BANFF.—Potatoes, both in the gardens and fields, are looking strong and healthy (with the exception of *Magnums* and *The Bruce*, which have both come up irregularly), and should yield an abundant crop. The early varieties are a fortnight later than usual, and are still soft and watery, but improving daily. *C. Webster, Gordon Castle, Fochabers.*

MIDLoTHIAN.—Potatoes were slow at starting. Early kinds were about a week behind the average in being fit for use, and were at first rather poor in quality. They have improved very much, and are now first-rate in quality and quantity. No disease has yet appeared and the tops are strong and very healthy. *Malcolm Dunn, The Palace Gardens, Dalkeith.*

RENFREW.—The Potato crops are looking excellent, I never saw them better. The harvest prospects are a good deal brighter than last year. *Henry Maxwell, Ralston, Paisley.*

RENFREW.—Early Potatoes, Veitch's Ashleaf, are an abundant crop, and excellent quality, but rather small owing to dry weather. Late varieties are looking exceedingly well. *Thomas Lunt, Ardgowan Gardens, Greenock.*

— The Potato crops everywhere in this district are most promising; the dry season has suited them; Kidneys and Smith's Early turning up well, and no signs of disease. *John Methven, Blythswood, Renfrew.*

ENGLAND.—NORTHERN COUNTIES.

NORTHUMBERLAND.—The Potato crops look well. We have had a dry season, with an exceptionally late spring. Potatoes and fruits are all late. I have examined some large fields of Potatoes, where about eighteen loads of farmyard manure, with nitrate of potash and phosphates were added, and the crop looks splendid. *George Harris, The Castle Gardens, Alnwick.*

— Early kinds are good in quality but not so large as usual, owing to the severe frosts in May, which cut them to the ground. No disease as yet. Our best garden sorts are Old Ashleaf, Duke of Albany, Cole's Favourite, Rivers' Early Ashleaf, and Sutton's Ringleader. In the field they are looking remarkably well. We are trying for the first time a few of Mr. Findlay's (of Markinch, Fifeshire) Hybrids, viz., *The Bruce*, *Lady Francis*, *Astonishment*, *Thane of Fife*, *Her Majesty*, and *Jeannie Deans*, which are all practically disease-resisting. *Thane of Fife* is a very fine sort, a good eater, and present appearances indicate for it a popular future here. Experiments have been tried in Belgium and France in 1889 and 1890, with sulphate of iron and sulphate of copper to prevent the disease. We are at present trying the same remedy, and will be glad to let you know the result. [Pray do so. Ed.] *David Inglis, Howick Hall, Lesbury.*

WESTMORELAND.—Early Potatoes were cut down on May 17; ours were not above ground on that date, but were touched by the severe frost. Cottagers err in planting too shallow, and having sets sprouted too much. Late crops are looking well; *The Bruce* looks particularly promising. *W. A. Miller, Underley, Kirkby Lonsdale.*

DURHAM.—Potatoes were all cut down to the ground on May 17 and 18; second growth is weak, and the tubers are small. What with the early frosts and dry weather, early Potatoes will be very much under the average. *R. Draper, Seaham Hall, Durham.*

YORKSHIRE.—All early Potatoes were cut down within the ground by the sharp frost on the nights of May 17 and 18, when we had 13° of frost. Late kinds, *Magnum Bonum*, *Imperators*, and *Regents*, are looking healthy and well. So far no symptom of disease has yet shown itself anywhere in this district. *Robert C. Kingston, Brantinghamthorpe, E. York.*

EASTERN COUNTIES.

LINCOLNSHIRE.—Potatoes are very late. Most early varieties were cut down after they were 6 or 7 inches high by a sharp frost on May 17, and the ground was covered with 6 inches of snow. The early kinds are as yet small but clean. Late varieties look promising. *John Rowlands, Bardney Manor Gardens, Lincoln.*

SUFFOLK.—Could not look nor promise better. Never laid so long dormant in the ground. Many earlies severely cut back through late frosts, but midseason and late crops have had no check, and one can almost see and hear them grow. No sign or sound of disease. *D. T. Fish, Hardwicke, Bury St. Edmund's.*

— As yet I have not seen or heard of a trace of disease, and late Potatoes around us are looking as well as can be desired, the haulm being ample and yet not too strong, and the colour a healthy green. If disease does put in an appearance at its usual time, which is usually about now, the middle of July, its effects will be more severe than ever; the tops are more succulent and less mature. The earlier kinds have been a very poor crop, having been cut by frost, and those that escaped have suffered from cold, the effects of which showed itself in the curled crippled

foliage. The second earlies are first-rate, the sorts we grow being *Huntingdon Kidney*, *Beauty of Hebron*, and *Snowdrop*, the first-named being unapproached for high quality. We are digging from the kind now, as it follows closely on *Myatt's*, but beats *Myatt's* in every respect, as it is a much heavier cropper, and produces handsomer tubers, which are dry and mealy and beat all for flavour. Although an old variety, it does not appear to be much known, but so valued is it here, that I would rather be without any other kind. If the disease does come, all early sorts should be at once lifted, as it is useless leaving them in the ground after, and though the skins may not be quite set, that will matter but little if care is exercised in the handling. Before moving them about, or storing, I always like to let them lie on the surface of the soil for a day or two, but not long enough to get green and hard, or to have much exposure if the sun is very fierce and hot, as they are then better in some dry airy shed, where they should be laid thin, but not covered in any way. *J. Sheppard, Woolverstone Park, Ipswich.*

ESSEX.—Haulms of early Potatoes destroyed by severe hailstorm, followed by 9° of frost; early sorts, therefore, have been later than usual, and the size of tubers has been very small. Late sorts are looking remarkably well. I have not seen any disease as yet. The field crops look capital. *Arthur Ocock, Havering Park, Romford.*

— The Potato crop looks admirable. In gardens the haulm is commencing to ripen upon *Kidney* and early-set *Beauty of Hebrons*, the yield of the latter being already very good. Though I anticipate disease in connection with such forward crops and the frequent thunder rains, I failed to detect the least symptom to-day. The hundreds of acres field-grown, though late, could not look better. *William Earley, Double House, Ilford.*

— Potatoes look remarkably well at present; no signs of disease. Owing to the late season, tubers are rather small, but improve every day since our last rain, *Veitch's Improved Ashleaf* being our best early kind. *James Vert, Audley End Garden, Saffron Walden.*

NOTTS.—The Potatoes are looking well in this district, but late; no disease as yet. A week's bright and warm weather would be of great benefit to them. *A. Henderson, Thoresby, Ollerton.*

MIDLAND COUNTIES.

BUCKS.—All perfectly free from disease at present. *Sharpe's Victor* has proved our best early this season; it is very dwarf, and a free-bearing variety. I intend growing it in frames next season, as it can be grown in much less space than any of the American sorts. *Clark's Main Crop* is one of our best, being of excellent quality on our strong soil. *J. Smith, Mentmore, Leighton Buzzard.*

— Potato crops never looked better. Our main croppers are *Roses*, *Hebrons*, *Magnums*, *Victorias*, and, for the first time, I am giving *Clark's Main Crop* a good trial, and so far I am pleased with it. *Giles Bloxham, Brickhill Manor, Bletchley.*

— Potatoes up to the present time look healthy and well, and no disease yet seen either in tuber or haulm. The crops generally are very late and rather small, but with fine weather and freedom from disease promise to be good. *Chas. Herrin, Droghda, Maidenhead.*

HENTS.—We are now lifting *Ash* and *Walout-leaved* and *Sharpe's Victor* for use; very good turnout, and the flavour good; all other varieties look very promising. If anything, the haulm a little too strong, and with fine dry weather the yield must be good. No sign of disease. *James Charles Mundell, Moor Park Gardens, Rickmansworth.*

WESTERN COUNTIES.

GLOUCESTER.—Early varieties, such as *Ashleaf*, *Challenger*, *Covent Garden*, and *Perfection*, were completely cut down by the frost of May 17, but have since grown well, and we are digging a number of small tubers, but these are well flavoured. Late

Potatoes escaped the frost and are looking well. Should we escape the disease, there is every prospect of its being a good season. *Scotch Champion*, *Magnum Bonum*, and *Sutton's Abundance* are the three principal varieties we grow, the latter being an abundant crop and eats well when kept. *Arthur Chapman, Weston Birt, Tetbury, Gloucester.*

MONMOUTH.—Early Potatoes were cut to the ground by frosts, and the haulm since formed is weak. The tubers are consequently small and not very numerous. Late varieties not affected by frost look promising; the haulm is vigorous. The new kinds, *The Gentleman*, *The Amateur*, and *The Cottager*, are in robust health. Field crops also look well, *Magnum Bonum* particularly so. *Thomas Coomber, The Hendre Gardens, Monmouth.*

WORCESTERSHIRE.—Crops look flourishing; rather much haulm, and if thundery, moist weather should intervene, disease may be expected to follow such succulent growth. The *Early Ashleaf* section is turning out clean, and of good quality, whilst *Sharpe's Victor* is a first early which every one should grow; *Magnum* and *Chancellor* are satisfactory, and the same may be said of the mid-season kinds, such as *Sutton's Seedling*, *London Hero*, *Vicar of Laleham*, &c. *W. Crump, Madresfield Court, Malvern.*

— The crop is looking wonderfully well, without the slightest trace of disease. The early *Kidneys* are rather smaller than usual, the ground being so very dry; second earlies promise a heavy yield; also that grand variety, *Sutton's Abundance*. *Walter Child, Crooms Court, Severn Stoke.*

SALOP.—Earlies decidedly under average, the frost and snow on the 17th May cut them down completely. Late varieties in places look rather spindly. *James Loudon, The Quinta, Chirk.*

CHESHIRE.—Potato crops in this district are looking extremely well, early varieties are flooding the markets, and prices are very low. Late kinds are very robust. No disease up to the present time. *Jno. V. Smith, Arley Hall Gardens, Northwich.*

— Early Potatoes have gone very much to top growth and very little to the formation of tubers. The plants look healthy and are flowering plentifully, so that with a continuance of warm sunshine for a little time good crops may be expected. They are, however, about a fortnight later than usual. *Wm. Whitaker, Crewe Hall, Crewe.*

— Potatoes of all kinds are looking well. Early ones are turning out both good and prolific crops, though our season is about a fortnight later. Early varieties—*Myatt's*, *Sharpe's Victor*; late sorts—*Priestaker*, *Magnum Bonum*, and *Sutton's Main Crop*. *James Dalry, Rode Hall Gardens, Scholar Green.*

SOUTHERN COUNTIES.

KENT.—Early Potatoes thrown back with frost at *Whitsuntide*, but turning out well, and fine quality; main crops look splendid, and no appearance of blight as yet. Every promise of heavy crops, though slightly later. *Wm. Craik, Hothfield Gardens, Ashford, Kent.*

— The blight was found in a garden near here on the 15th, and on the 22nd in the garden here. No tubers bad at present, the variety being *Beauty of Hebron*. Several other kinds are adjoining, and on other parts of the garden, but are free from disease up to present date (July 27). All kinds look very promising, but are making more haulm than usual this season; early kinds are giving a full crop. *W. Divers, Wierton House Gardens, near Maidstone.*

MIDDLESEX.—The late kinds look well and the rains have improved them, as on our light soils it was much wanted. Early kinds have been later than usual, having been cut down by frost when in full growth. We have had good crops of *Veitch's Perfection* on sheltered border. *Myatt's Ashleaf* are now turning in well, and all are free of disease. *Covent Garden Perfection* also promises a heavy crop and are good. *G. Wythes, Syon House, Brentford.*

SUSSEX.—Potatoes on south border, protected with *Fera*, good crop in the open, cut to the ground by frost in May, have grown well since; in the neighbourhood generally they look very promising. *Fredk. Geeson, Cowdray Park, Midhurst.*

SURREY.—The crops of the Potatoes are most promising. I am lifting for present consumption some good specimens. All late varieties, both in gardens and fields, look splendid. If we escape heavy thunderstorms and continual rains, the crop of 1891 will be an exceptional one. The following varieties hold their own, although I have many others:—*Veitch's Ashleaf*, *Sharpe's Victor*, *Puritan*, *Beauty of Hebron*, *Magnum Bonum*, *Prince Arthur*, *Yorkshire Hero*, *Schoolmaster*, M.P., and *Vicar of Laleham*. *A. Evans, Lythe Hill, Haslemere.*

HANTS.—Potatoes were cut down to the ground on May 17. It then was 6 inches high or more in some places. The consequence is a late crop of small tubers. *Sutton's Ringleader* promises well as an early variety. Crops well and of good flavour. *Puritan* has done well this year as an early variety. *E. Molyneux, Swanmore Park Gardens, Bishop's Waltham.*

— The Potato crop in this district is looking remarkably well; the stalks are looking green and healthy, as they were a month ago. There is not the least appearance of disease yet, and those that have been dug are very fair sized tubers. *G. Rea, Heron Court.*

WILTS.—Consequent upon the haulms having been cut down to the ground by the June frosts, the tubers of early varieties which are being dug in the open are smaller, and perhaps more plentiful in the ground than would otherwise have been the case, and the quality is fairly good for tubers which have not completed their growth. All crops, early and late, look well in the haulm. The late varieties, having been planted earlier hereabouts than usual, are all the more promising on that account, and should fine, warm weather prevail during the next few weeks, to enable the plants to complete their growth, there is every prospect of the Potato crop for 1891 being a good and plentiful one. *H. W. Ward, Longford Castle, Salisbury.*

SOUTH-WESTERN COUNTIES.

DEVON.—Potatoes of all kinds are looking wonderfully well; *Veitch's Ashleaf*, *Myatt's*, and *Early Puritan* are in use. I never saw them turn out better, and no appearance of disease. All late sorts are looking healthy. *Geo. Baker, Membland, Plymouth.*

CORNWALL.—The Potato crop is generally good, and the quality of the early sorts excellent. The field crops look very promising. I have seen no signs of disease yet. *James Murton, Pencalernick.*

— Early Potatoes were very much injured by the frost of May 17, for this neighbourhood—in fact it is more than twenty years ago since I saw them cut so badly; the early *Kidneys* on the south borders did not escape, and those on the quarters were so frosted that they had to make a new break. I calculate that they were thrown back nearly three weeks. But thanks to the fortnight's hot weather in June, they improved rapidly, and though tubers are smaller than usual they are numerous and of good quality. The field Potatoes did not entirely escape the frost, but being later they were not checked so badly, and are now looking extremely well, so green and healthy, not a spot of disease either in garden or field. *C. Lee, Bocomnoc, Lostwithiel.*

WALES.

GLAMORGANSHIRE.—Early varieties in this district are turning out heavy crops, and the quality is all that can be desired. We commenced lifting here on June 6 (variety, *Sharpe's Victor*), which with me comes in a few days earlier than the *Ashleaf*. Second early varieties, which escaped the late frosts in May, are producing heavy crops. Late kinds, such as *Abundance*, *Magnum Bonum*, *Champions*, and *Regents*, are looking remarkably strong and healthy, and with favourable weather from now onward the Potato crop of 1891 should be a very productive one.

No signs of disease up to this date. *R. Milner, Penrice Castle, Swansea.*

CHANNEL ISLANDS.

JERSEY.—The Potato trade has greatly increased this year. The crops have been abundant and the tubers large. More than 6000 van loads, averaging a ton each, have passed over the weighbridge for exportation during the week ending on the 11th ult., which number had been exceeded in previous weeks. It is generally supposed that the year's traffic in Potatoes will return upwards of £400 000 to the Jersey farmers. The sorts mostly grown are Myatt's Prolific and Webb's Imperial Kidneys, the latter under the name of Royal Jersey Flukes, their fine appearance and size commanding the highest prices. Careful sprouting and late planting in highly manured soils have solved the problem of Potato culture most satisfactorily. *Chas. B. Saunders, St. Saviour's, Jersey.*

PLANT NOTES.

ERYNGIUM OLIVIERIANUM.

WHEN a wrong name gets established in gardens it is a very difficult task getting rid of it, as is amply proved in the case of the above *Eryngium*. This plant is found in gardens almost everywhere under the name of *E. amethystinum*, and the striking steel-blue flower heads answer so well to the name that growers are very reluctant to change it for its proper one of *E. Olivierianum*. In *E. amethystinum* the flower heads are much the same colour, but smaller and not so striking as in the above. The habit of the plant is always decumbent, never upright as in *E. Olivierianum*, the stems rarely exceeding a foot or eighteen inches in length. The leaves always deeply triplicate, and never entire as they often are in *E. Olivierianum*. They are both well worth having, and both worth their proper names; the latter especially is one of the most striking plants on the Rockery at the present time, the stems as well as the involucre bracts being of a brilliant steel-blue colour and very attractive. *E. alpinum* seems to be flowering well everywhere this year, and is certainly by far the showiest of this showy genus. *D.*

FUCHSIA TRIPHYLLA.

The above is a very beautiful plant, which I saw in flower the other day in the nurseries of Messrs. J. Laing & Sons, Forest Hill, and which is also nicely in flower at Kew. The points of all the young growths are well furnished with clusters of bright orange-scarlet flowers, which differ from the ordinary forms of the garden *Fuchsia* in being erect. It is also very interesting, as being the plant upon which the genus was founded in 1703 by Plumier, who had previously collected it in the Island of St. Domingo; 180 years later it was again found in St. Domingo by a Mr. Thomas Hogg, and sent to England in a living state. Mr. Hogg says that in its native country it forms a round bush, 18 inches high, every shoot of which is terminated by a raceme of orange-scarlet wax-like flowers. In the hands of Mr. J. Laing this interesting species may become the parent of a new race of hybrid *Fuchsias*.

Associated with it was a group of plants of a singularly neat and pretty variety of the garden *Fuchsia*, with blush-coloured flowers, named Countess of Aberdeen. In colour, form, and habit, this is quite out of the range of the ordinary varieties, and although not a new plant by any means, it should be better known than it is. *J. D.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

THE COOL HOUSE.—*Oncidium Marshallianum* in this house will now be making growth which will be in a great measure, so far as blooming plants are

concerned, large or small according to the size of the spikes and the length of time the flowers were allowed to remain where the plant last flowered. *O. Marshallianum* has never been considered one of the easiest plants to grow year after year, the fault I believe of leaving the flower-spikes upon the plants for too long a time, and in some cases by reason of growing the plants in too warm a house. When the plant is grown in the cold house some difficulty may be found in keeping down thrips, the growth being very succulent, but I have always found that old established plants are more liable to their attacks than recently imported ones; and the syringing of the plants morning and afternoon should not be neglected, as it is very conducive to the health and growth of the plant.

Oncidium tigrinum is another grand plant of the cool house which has become rather neglected of late years. Notwithstanding it is a plant of very easy culture, I find that it suits the plant to pot it in a mixture of peat and sphagnum moss, and during the growing season afford it a liberal supply of soft water, and when the bulb shows signs of swelling some manure water may be made use of. It is a gross feeder, and with guano water the bulbs may be made to grow to a large size. When the pseudo bulbs are of full size water should be withheld to allow them to ripen, as on the thoroughness of this depend the size of spike and the quantity of flowers produced. I rarely give water more than twice at the most in the interval between the months of November and March.

Oncidium macranthum is one of the most admired plants of the genus, and it is one that may be grown in the coolest house, as near to a ventilator or door as possible, the door or ventilator being thrown open at all times when the temperature outside reaches 45°. Under the same kind of treatment *Odontoglossum ramosissimum* thrives perfectly. This, also, is a very pretty flower when seen with good spikes of flower, though it cannot compare with many other *Oncids*. *Odontoglossum blandum* is still considered by many orchidists to be the best of its section; but for years its requirements have been too little understood, and the plant in consequence has got to be looked upon as milky. Some years since it was generally considered that this plant required the warmth of an intermediate house to grow it well; fortunately such has proved to be incorrect, the plant delighting in a cool, moist position in the cold house. *O. navium majus*, a plant which is very closely allied to the latter species, requires cool-house treatment.

Odontoglossum coronarium, a very capricious plant, is now throwing up its flower-spikes; and almost equally uncertain as to its time of flowering is *O. Chirguense*; both may be well, as far as growth goes, when they are grown in boat-shaped baskets; but the blooming of the plants is, it seems to me, more a matter of luck than anything else. The drying-off of these plants as an inducement to form flowers is wrong practice, I am convinced. *Oncidium incurvum* has now got its flower-spikes well advanced, and if the spikes are fastened to sticks or a trellis, no time must be lost in getting it done as fast as the spikes come to maturity, as they become very brittle, and are liable to snap off hours after the plant has been dealt with. *A. G. Catt, Parkfield, Hallow.*

THE APIARY.

CONTRACTING SUPERS.—As the honey season is all but over, excepting in heather districts, surplus chambers should now be reduced to one section crate per hive, into which the unfinished sections should be placed, in the hope of getting most of them completed before the honey-flow quite ceases.

FEEDING UP.—This will be the next operation to demand attention, and it is important to obtain pure Cane-sugar for the purpose. This not only has a greater sweetening power than the inferior article, being therefore more economical in that way, but it contains nothing harmful to the bees in the shape of potash, salts, &c. Suitable feeders should now be obtained in view of their being soon required, and of all the rapid feeders the writer has tried, he has found nothing equal to one made by Mr. Stothard. It holds 20 lb. of syrup, so that the right quantity can be given to each stock in one dose. The feeding-trough is at one end, and a large number of bees can feed at a time. To place it on the hive, turn back about 2 inches of the quilt at the ends of the frames over which the trough goes, thus admitting to it bees from every one. It will be emptied in probably less than twenty-four hours, and can then be shifted to other hives in succession. The writer much

prefers it to the Canadian feeder, as the quilt being between it and the frames it is not propolised, and can be taken away with less disturbance to the bees; it is also a cheaper article, and easier to make at home. A sheet of glass covers the top, so that it can be seen at a glance when it is empty.

COTTAGERS' CONDEMNED BEES.—Arrangements should now be made with cottagers and others, who are in the habit of sulphuring their bees, to take the honey for them by the improved methods of driving or bumping, and many a lesson can be imparted in this way, besides rescuing the bees from an untimely fate. The bees may be either used to strengthen existing colonies, or be made into new stocks by placing, say, the contents of two skeps on worked-out combs, and rapidly feeding with 20 lb. of syrup, or the bees from three or more skeps can be made to draw out combs for themselves by placing them on foundation. It is also a good opportunity to secure young queens, which are always to be found in hives that have swarmed during the current season and in casts. The only risk incurred is the danger of incurring foul brood, which should be watched for very carefully. It can be identified by the disagreeable smell emanating from the hives affected, and if, upon examination, the brood in the cells is found to be putrid, and many of the cappings are pierced with small holes, there can be no doubt as to the cause. *Expert.*

PLANTS UNDER GLASS.

POT ROSES.—Roses which were struck from cuttings last spring and have now filled their pots with roots, may be shifted into other pots, say 32's, which will be found quite large enough for them. There should be no delay in getting this work out of hand, or there will not be sufficient time for the plants to take possession of the fresh material before the growing season comes to an end. A suitable compost for them will be found in good loam, rotten manure and sand, well mixed together. The materials should not be too moist, and the potting should be the reverse of loose. Cuttings of the Tea varieties of the Rose may now be put in, and it is very generally admitted that Tea Roses struck from cuttings make the best plants for pot culture. Care should be taken to choose shoots for making cuttings which are in a half ripened condition about the base, as if too soft they are very apt to damp off in the cutting bed. Secure a heel of the previous year's growth with the shoot, cut them to 5-6 inches long, and place 4 or 5 cuttings round the rim of a 48-sized pot filled with sand; water them with a fine rose, and when dry stand the pot in a cold frame for a few weeks on a bed of fine coal ashes, keep the lights closed and shade the cuttings when the sun is bright, as the leaves must not be allowed to flag. When the cuttings are callused remove them to a gentle hot-bed, when few will be found to fail.

CELOSIA PYRAMIDALIS.—By sowing a little seed at the present time, and growing the seedlings quickly, useful plants for autumn decoration of the greenhouse may be obtained. Grow the plants where they will get sufficient light, but not in too high a temperature, the latter causing weakly growth. Pots of moderate size—say, 48's or 32's—will be large enough for the succession. When the pots become filled with roots, weak manure-water may be liberally afforded until the plants commence to flower.

IMPATIENS JERDONIAE.—This species is a very delicate subject to deal with during the wintry months, the fleshy stems being very liable to decay if the plant gets much water, or is placed in a low temperature, and especially those examples which have flowered during the preceding summer. It is advisable, therefore, to put in a few cuttings of the plant at the present time, choosing the small young shoots, which are produced freely on the strong branches, and taking them off at the base and inserting three cuttings round the sides of small pots filled with sandy soil, standing the cuttings on a shelf near the glass to root, and always shading them in bright weather. Be cautious about giving more water than will just keep them from shrivelling. When the cuttings are well rooted, repot the potful without disturbing them. The flowering pots should not be more than two sizes larger than the cutting pots. Two parts fibrous peat, one of chopped sphagnum, and one of sand will be found a suitable compost for *Impatiens Jerdoniae*. Grow the plants where they will get abundant light, and plunge the pots in baskets filled with moss, suspending them from the roof of the house, where they will bloom

freely, and the brilliant-coloured flowers be seen to the best advantage. During the winter months keep the plants comparatively dry, and in a temperature of from 55° to 60°. *R. Milner, Penrice Castle, Swansea.*

FRUITS UNDER GLASS.

VINES IN POTS.—We have just got our pot-Vines into disused Strawberry-pits, the pots being let down on to the ground, and the Vines laid on the Strawberry-shelves. In this position they will get thoroughly ripened by the free exposure to the sun, whilst they are sheltered from rains, and the pots are shaded from the sun. Care will be taken by affording them sufficient moisture at the roots, that the plants are not prematurely ripened, and I find that, by putting the Vines into these frames for a few weeks, they get better ripened than when turned into the open direct from their growing quarters. These Vines will be placed against a south wall towards the end of the present month, and shortened back to the required height, removing the laterals and weak wood by degrees as the growth of the cane finishes. Early Vines which are planted in borders should be heavily syringed, and if red-spider be troublesome, some flowers of sulphur should be mixed with the water used, and the syringings followed up so long as the insects remain on the foliage. A mulching of rotten manure should be placed on the inside borders of these early vineries, and be very sure that the borders are well watered before affording the mulch, and when it is found necessary afterwards. Afford all the air possible to the vineries, but give a little warmth in the hot-water pipes in dull or wet weather. Successional vineries must get close attention in regard to the ventilation, and the outside borders should be covered with something to throw off excessive rain, some of the thin-skinned varieties cracking badly if the roots absorb much moisture, and where these are grown it is a good practice to allow some larger amount of air at night by keeping the back ventilators open, so that much of the moisture may escape. In rainy weather fireheat must be used to maintain the temperature, as a sudden fall of temperature is very apt to cause some injury to the Grapes. In the case of Madresfield Court the laterals should not be stripped off to any great extent, a matter of great importance if a period of warm moist weather should set in. Foster's Seedling is one of the worst sufferers from cracking of the berries. Muscats, also, when ripe, are benefited if the laterals are left, and I question if the roots do not also benefit from the non-mutilation of the summer growth.

LATE HOUSES.—Scalding of the berries should be carefully guarded against by free circulation of air without cold draughts, and by shading any part of a vine that gets so affected. I would advise the non-removal of laterals from Lady Downes at the commencement of colouring, this alone often preventing scalding. Just previous to the berries turning colour, the vines should have a thorough root watering with liquid manure, and all the seedless berries cut out of the bunches, or good berries removed if the bunches which are to hang late are thought to be too crowded. Large-berried varieties, like Gros Colman and Alicante, require plenty of space to develop. These latter kinds should get every encouragement to finish their stoning to get the berries well finished as early as possible. *G. Wythes, Syon House, Brentford.*

THE KITCHEN GARDEN.

MUSHROOM BEDS—If a sufficient quantity of stable manure is in a suitable condition for making up into beds, no time should be lost in constructing open air beds. Make them of a ridge shape or conical, and choose a hard piece of ground whereon to place them and one from which the rain will freely run off. Materials must be neither too wet or too dry, but in such a condition that no water can be squeezed out of it by hard pressure, yet it should contain enough moisture to enable fermentation to be set up and maintained for several weeks. Thoroughly shake out the materials as the work proceeds, and beat them firmly together, and when the heat has sunk to 80° spawn the bed and cover it with soil to the depth of 1½ inches three days afterwards. Employ heavy loam of good holding quality or any loamy garden soil that is free from vegetable matter, and mix a small quantity of agricultural salt with it. The straw shaken from the manure if kept dry will be found useful for covering the beds, and may be put on to them about 1 foot

thick, and if a waterproof covering of any kind is at hand it may also be placed over the straw. Materials for beds in the Mushroom house should be collected, and when enough is got together for a bed in an open shed it should be often turned over and shaken out, to dissipate the excessive amount of heat and ammonia. Thoroughly clear out all old beds, whitewash the walls, and clean the shelves and bins, and make use of boiling water, pouring it into all crevices to destroy woodlice.

TOMATOS.—These plants which, if strong, were put out against walls or fences, and have received proper care in stopping and thinning out the shoots, will have ripening fruits which should be gathered when sufficiently ripe. By the timely gathering of the fruits as they become fit the plants are relieved and can be kept in good bearing for a long time. Being planted close to walls or fences the plants receive but little moisture from rain, and it is advisable to water them with clear water, and occasionally with manure water, and on light soils to afford them a mulching with spent manure. Remove the side shoots, and remove small and deformed fruits from the clusters.

WINTER SPINACH.—Ground should now be prepared on a warm border for sowing the main crop of Spinach to stand the winter. The land should be in good heart and have been well tilled, and if it be heavy, burnt refuse and wood-ash well mixed with the staple is of great benefit to the crop. Some of the same should be sowed over the land before the seed is covered. Sow thickly in drills 14 inches apart, and thin out to 6 or 9 inches apart, according to variety—Victoria and Monstrueuse de Viroflay are good novelties in Spinach, having large succulent leaves, and they are hardy.

EARLY KIDNEY POTATOS that may be ripe should be dug up, and the sets for next season sorted out. These may consist of the medium-sized tubers, and should be laid out in a partially shaded place to get green. By digging up when ripe, and greening the tubers, they sprout more evenly and better after planting than unripe and unprepared ones; and Kidneys rarely sprout so readily as Rounds.

MISCELLANEOUS.—Winter stuff early planted out will now need to be earthed up, which is always more expeditiously performed before growth has made much headway. Ground which has been cleared of Peas, Potatos, and other early crops, may be planted with Coleworts, no manure being put into the land for this crop if it was manured for the early crops. These Coleworts form an important dish in autumn and winter, and deserve to be well grown. Most varieties may be planted at 1 foot apart, and may then be cleared off regularly, or each alternate plant taken first, the rest being left to reach a larger size. The hoe should be freely used between all young crops whenever the land is dry enough to admit of it. *C. J. Waite, Glenhurst, Esher.*

THE FLOWER GARDEN.

RAISING PLANTS FOR SPRING FLOWERING.—The present time is suitable for sowing seeds of Candytufts, Saponaria calabrica, Silene pendula including *S. p. compacta*, *Eschscholtzias*, *Linaria bipartita*, *Limnanthus Douglasi*, *Nemophila*, *Godetias* in variety, and *Santivahia procumbens*. Sow the seeds of these various plants thinly in drills of about ½ inch deep and 6 inches asunder, on nicely prepared beds, afterwards closing the drills and treading and raking the ground level. A south or west border is the best place for the beds, and by sowing it thinly, no after-thinning of the seedlings will be needed. The beds of Pansies, Violas, Primroses, Myosotis, Daisies, and Wallflowers in the reserve garden should be weeded and watered whenever necessary; and should the stock of Pansies and Violas be less than the requirements, it may be yet increased by division. Violas are not only useful and showy spring flowers, but they are just as effective in summer. In these gardens Golden Gem and Blue Perfection Violas are used with admirable effect mixed with Bijou, Margiesi, and golden bronze Pelargoniums, a combination of colour that is quiet and pleasing. When the Pelargoniums are cleared away, these Violas remain, and make a fairly good display during the later autumn months and in early winter, and which increases in beauty as the spring approaches. The tuberous Begonia increases in popularity as a summer bedding plant, and by saving seed from the finest flowers every year, sowing it early in January,

and growing the plants on, and again weeding out the least handsome flowers, a good strain is in time secured. Plants of two and three years old, which produce fine masses of foliage and flowers, the latter having broad and stout petals, should be selected as the seed-parents. The double-flowered varieties also gain in favour as bedders and pot plants. They are even better wet-weather flowers than the singles. Planted either in mixed or separate colours in beds ranging in size from 3 feet to 10 feet in diameter, the effect is very satisfactory.

PROPAGATION—There are now plenty of Pelargonium cuttings to be had, and propagation should be completed as soon as possible, that is, when it can be done without interfering with the desired shape and beauty of the beds. The cuttings will do very well dibbled into shallow boxes of a uniform pattern as recommended in a previous calendar, which should be filled with light mould and have a surfacing of silver-sand. Put in the cuttings about 2 inches apart, water them, and place the boxes in a dry situation and fully exposed to the sun, on pieces of board, slate, &c., to keep them off the ground. Sprinkle them lightly in the afternoon if the day has been bright and warm. I have found this plan to answer as well in the cool north, 90 miles beyond Edinburgh, as in Wiltshire. A bed composed of three parts of leaves and one of long dung thrown together for ten or twelve days and turned twice in that time should be prepared for striking cuttings of Verbena, Lobelia, Alternanthera, Mesembryanthemum, Heliotrope, Salvia, &c., in a week or two hence.

GENERAL WORK.—This consists in mowing, trimming the hedges, brushing, weeding, and rolling of walks, and the cutting into shape with the knife evergreens of various kinds, and the picking off of all overblown flowers and decayed leaves as soon as they appear. *H. W. Ward.*

THE HARDY FRUIT GARDEN.

APPLES—These are fast swelling, and although at one time the prospect of plenty of fruit was, indeed, anything but good, there will be a nice crop of the earliest and mid-season sorts, but late varieties are poor. At the present time, and so long as soft fruit lasts, it will be advisable to use Apples very sparingly. Lord Grosvenor, Lord Suffield, Keswick, and Lord Derby are among the best for culinary purposes, and where heavily cropped, some of the largest may be gathered, and their removal will improve the size of those left. See that all young trees with good crops have their branches made secure against wind and the weight of fruit, or they may get broken, which will spoil the appearance of good trained standards.

Dessert sorts should be carefully watched, and such sorts as Mr. Gladstone picked as soon as the fruits are approaching to ripeness, or the birds will destroy the best fruits. This is a variety which usually crops well, and is of very good flavour when gathered in time, but if left hanging it becomes dry.

PEARS.—Many of these will soon be ripe, the earliest, Doyenné d'Été, a small sweet Pear, is nice if gathered at the right time; this variety crops well, but keeps for only a short time. Colmar d'Été is a little later, but larger, and good-flavoured; When gathering, do not take too many at one time, but prolong the season by gathering a few at intervals of a couple of days.

CURRENTS, RED AND WHITE.—These should be netted over and made secure against birds: those on north walls will keep for some weeks, and will be found useful for dessert when other soft fruits are over. Bushes which have been stripped of fruit should have all suckers removed, and if the top growth be strong, shortened, or the ends broken, and left to hang. In shortening leave fully 6 inches of new wood, and in thinning out the centres reserve a few of the most suitable shoots for filling up with. As light and air are greatly needed for ripening the wood no time should be lost, so soon as it can be done, to relieve overcrowded bushes of useless wood.

FRUIT-ROOM.—This should be thoroughly cleansed, whitewashed, and put in order for the reception of the fruit. Keep the ventilators open day and night; the woodwork should be well washed and made perfectly clean. This job and many others, such as making labels, pegs, cutting shreds, &c., can be done when the weather is wet. *H. Markham, Mraworth Castle, Maulstone.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK

MEETINGS.

MONDAY, AUG. 10. } Royal Botanical Society of London : Annual Meeting.

TUESDAY, AUG. 11. } Royal Horticultural Society : Committees and Lecture on Ornamental Stone and Greenhouse Plants, at the Drill Hall, James Street, Westminster.

SHOWS.

TUESDAY, AUG. 11. } Royal Horticultural Society : Show of Carnations for Mr. Martin Smith's prizes, James Street, Westminster.
Clay Cross Horticultural Society.

WEDNESDAY, AUG. 12. } Cardiff Horticultural Society (two days).

THURSDAY, AUG. 13. } Maidenhead Horticultural.
Taunton ditto.

SATURDAY, AUG. 15. } National Co-operative, at the Crystal Palace.
Bowling Horticultural.

SALE.

FRIDAY, AUG. 14. } Established and Imported Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—62°·7.

Horticultural Instruction in Schools. In the rural districts much might be done in schools in the way of instilling into the minds of the scholars a knowledge of the "common things"—plants, birds, insects, soils—by which they are surrounded. Whilst the pupils are thus being taught to observe facts, the inferences to be derived from them may also be cautiously explained, so that some knowledge of the principles governing these facts may be obtained, and the pupils be taught not only how to observe but how to think, so that they may be enabled hereafter to apply their knowledge to some useful purpose. Many a lad, even among the most illiterate peasantry, is blessed by Nature with sharp powers of observation, but few indeed are capable of thinking. In our systems of education we too often neglect to avail ourselves of the natural faculty of observation and to develop and guide it, whilst we reduce thinking to a mere exercise of the memory. Moreover, the things we set down to be remembered are statements in books instead of the facts themselves. Of course, books are indispensable, but only as aids and adjuncts. The poor children are not to blame, it is the teachers and the system of teaching that in the first instance require improvement. This is a subject which from time to time during the half century's existence of this journal we have urged upon the attention of our readers. Some of the older ones among them will not have forgotten the writings and doings of the late Professor HENSLOW as recorded in these columns, and will retain a vivid recollection of what he effected in a rural parish in Suffolk, originally of the most unpromising character. The agitation that has been promoted with a view to extend and improve fruit cultivation has set many people once more thinking what can be done towards the cultiva-

tion of the minds of the labourers of the future. Many a landowner, as we know, has supplied his tenants and the cottagers on his estate with a few fruit trees of approved sorts, but this is not all that is wanted. Knowledge and intelligence are required, and these cannot be bought from the nurseryman and distributed by philanthropic landlords. They must be instilled gradually into the minds of the coming generation, who then, when the time comes, will be able to avail themselves properly of the generosity and good feeling of the landlords.

Take the Potato disease as an example. The means of prevention and palliation on a large scale are still on their trial, not that there can be the smallest doubt as to their efficacy—that has been proved. What we want to know now is, whether, on a large scale, such measures are economical—whether or no the cure will not be more costly than the price obtained for the resulting crop will justify? But in the isolated garden of the cottager—and even in a properly managed allotment garden—the disease may certainly be circumvented at comparatively little cost, and the cottager secure, at least, a large proportion of the crop, where otherwise he would get none. It is not desirable to teach the labourer or the labourer's child the minutiae of entomology or of cryptogamic botany; botanists themselves are not in accord on all these matters, and profound obscurity still reigns over some of them. But there is no difficulty in actually showing to the children the principal facts in the life history of insects or the growth of moulds and mildew, and in making them appreciate for themselves the conditions favourable to such growth. In like manner the precautions to be taken and the remedies to be applied can often easily be demonstrated and explained. A pot of jam or a rotten Strawberry covered with mould can be made by an intelligent teacher into a first-rate object lesson for the purpose of instilling the kind of knowledge we are advocating.

But to return to fruit culture. At Sewardstone, in Essex, Mr. W. MELLES has planted a collection of Apples, Pears, Plums, Cherries, and bush fruits for the purpose of enabling the principles of fruit culture to form part of the educational curriculum at the Sewardstone Board School. The collection embraces all the most useful varieties, and the trees are planted in such a manner that they form a border of some width to the spacious playground. The boys and girls will share in the work of attending to the culture of these trees, and on certain days the head master, Mr. SPINK, who, by the way, is a great enthusiast on the subject, will give them lessons on theory and practice. Mr. SPINK has drawn up a graduated scheme for teaching fruit culture as a specific subject to his scholars, and this is being submitted to H.M. Inspectors for their approval, so that the children may in due course be examined thereon. Article 16 of the Educational Code provides for specific subjects being taught, and Mr. SPINK has done wisely in choosing fruit culture as one of these, especially as the scholars live in a country district.

According to Mr. SPINK's scheme, the children will first be taught the botany of an Apple blossom and fruit, followed by difference between seedling and parent, planting, mulching, summer and winter pruning, thinning the fruit, insect pests, packing, and storing the fruit. This will constitute the first stage. The second stage will deal with the food of fruit trees, manures, course of sap; and the third, the art of propagation. The first stage in the scheme covers a variety of subjects, but Mr. SPINK has been

obliged to do this because most of the boys leave the schools when they have passed the fifth standard, and hence it is needful to let them know as much of the first stage as possible before they do so. This is an excellent idea, and one which might be followed with advantage by other schools in country districts. The exterior walls of schools might be turned to good account for growing Peaches, Apricots, and the finer kinds of Pears and Plums. If the head master could not undertake the practical management of such trees, some of the gentlemen who reside in the parish would, in such a case, be doing an excellent service by allowing their gardener to pay occasional visits and advise, as well as give practical illustrations of the systems of pruning, disbudding, &c.

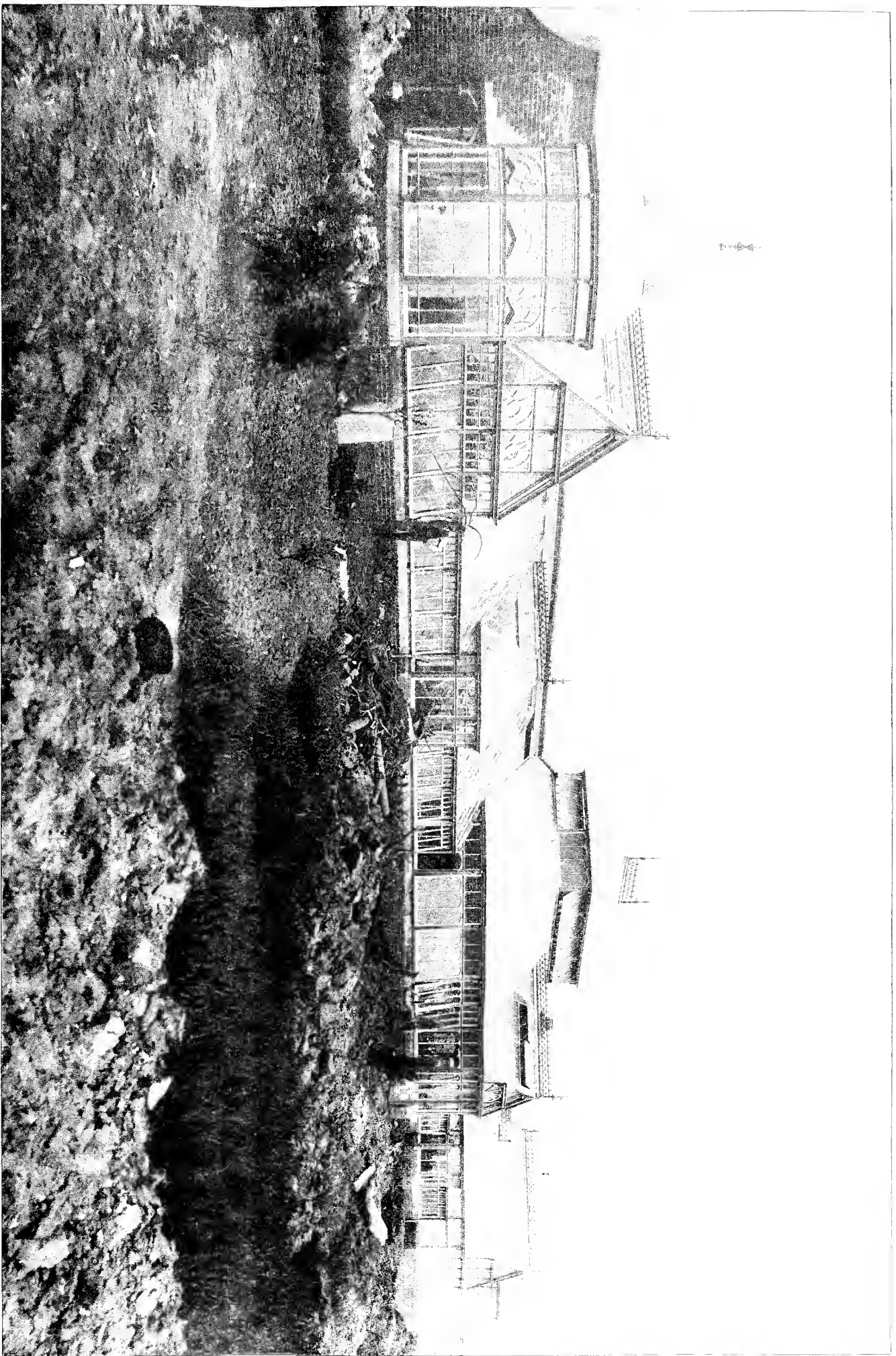
Mr. MELLES' interest in fruit culture is not confined to providing the school with fruit trees. He has recently rendered still further service to the cause by having every Apple and Pear tree in the hamlet labelled with a number, this number being registered in a book kept by him. As each tree, whether old or young, bears fruit, samples of the fruit, together with the number affixed to the trees, are to be sent to his house, when the correct name, if any, will be given on a permanent label, which is to be afterwards affixed to the tree. This plan will enable the cottagers to be in possession of the names of their fruit trees, and to better judge whether the variety they cultivate is worth growing or not.

In Mr. MELLES' own garden, as we learn from *Amateur Gardening*, is a fine collection of fruit trees grown in pots in cool improvised structures, and he has besides an orchard of the choicest kinds.

The Royal Caledonian Horticultural Society's Great International Show.

THE prospects of this great horticultural event exceed the most sanguine expectations of the committee. It will, in a marked manner, be international, as France, Belgium, Germany, and other European countries have signified to the Secretary that they will send contributions. Canada and the U. S. of America, New Zealand and Australia will also be represented. The committee are at present embarrassed with the consideration of space for all that is likely to be forthcoming as non-competitive exhibits. No estimate can yet be formed of the bulk of competitive subjects, but it may be confidently stated that it will greatly exceed anything that has appeared at any former international show of this society. The Waverley Market, large though it is, will, it is feared, be all too small for the requirements.

A RANGE OF GLASSHOUSES ERRECTED FOR CHRISTOPHER FURNESS, ESQ., M.P., WEST HARTLEPOOL (Supplementary Illustration).—The range of glasshouses represented in our Supplement, and erected by Messrs. W. RICHARDSON & Co., Darlington, from designs furnished by JAS. GARRY, Esq., architect, West Hartlepool, for C. FURNESS, Esq., M.P., shows a favourite style of arranging the principal glass structures in a modern garden, the chief aim being contiguity, so that no time should be lost in passing from one portion of the range to another; economy in heating arrangements, and the mutual conservation of heat, and cheapness in construction—one partition serving for two houses. Moreover, in a northern climate, there is an advantage in having the range backed by a wall with offices behind it over a range not so protected on its northern side. The only drawback—leaving the aesthetic out of view—is that there is no great variety of aspect to suit the varying requirements of plants. The range is 170 feet long, and consists of a Palm-house in the centre 40 feet long by 23 feet wide, with



RANGE OF HOUSES ERECTED BY MESSRS. RICHARDSON & CO., FOR C. FORNESS, ESQ., M.P.



an ornamental south entrance measuring 9 feet by 4 feet; a Peach-house and a late vinery are on the left, and an early vinery and Cucumber and Melon-house on the right hand, each being 45 feet long by 14 feet 6 wide. A span-roofed greenhouse is on the left or west side of the late vinery, and a warm house on the east of the Cucumber-house, each house being 18 feet long from the back to the front by 14 feet 6 inches wide. An octagonal-shaped fernery is built at each of the ends of the range at the outer angles, and these ferneries measure 10 feet by 10 feet. There are also ornamental open-work verandahs across the ends. The work was finished in an excellent manner, and with all the latest improvements in ventilation, and the various houses are calculated to answer the various purposes for which they are required. The upright framing is neatly moulded and reeded, and the rafters and bars moulded and constructed in a substantial manner, heavy timbers being avoided by the use of a special kind of truss and tie-rod. Ornamental columns of cast-iron, with arched spandrils, support the large lantern of the Palm-house, giving to the interior an imposing effect. The roof bars and rafters are of a special make, formed so as to prevent leakage through the cracking or peeling of the putty, also with a channel down both sides for conveying away moisture which may condense on the glass. The whole of the compartments are ventilated on the latest approved principles. Roof or top-ventilation is obtained by hinged lights made to open simultaneously in each compartment by Richardson's improved screw lifting apparatus, and bottom ventilation by pivot-hinged sashes, all with simultaneous gearing. The interior of each compartment is well fitted up, the Palm-house, stove-house, and two ferneries having slate and iron staging, with cast-iron supports, and the greenhouse has a trellised flat stage of wood and centre stage arranged in tiers. The vineries, Cucumber-house, &c., are wired in a manner suited to their several purposes. Special provision is made for the collection of rain-water from the roofs by making a tank under the floor of the Palm-house, and having galvanised iron cisterns in the other compartments. Twin boilers set in a building behind the range furnish the heat for the various divisions. A Richardson's patent hooded tubular heats the range easily and economically; and the other is an improved tubular saddle, with a double row of top tubes made by the same firm. The boilers are connected so that they can either be worked together or separately.

FRUIT CULTURE.—The subject of fruit culture in small holdings was well dealt with at the Conference of the British Fruit Growers' Association in Beddington Park, on August 3, concerning which the energetic Honorary Secretary, Mr. L. CASTLE, enables us to give some particulars:—

The special intention was to bring the subject of fruit culture before the numerous cottagers and allotment holders in the district, to point out to them the advantages that would result from due attention to the matter, the best modes of proceeding in the work, and the difficulties to be expected. Plenty of instances could be given where the fruit produce alone is made to pay the annual rent of the cottage, besides yielding a supply of fruit for home use, either fresh or preserved. Several speakers at the Conference in question touched upon this aspect of the subject, and its importance is fully recognised by all who are concerned in the welfare of the working population of rural districts.

Referring briefly to the proceedings at Beddington Park, it must be said that the Chairman, Sir JAMES WHITEHEAD, Bart., dealt in his opening address with the subject of fruit culture most fairly and thoroughly. Special reference was made to the efforts of the Royal Horticultural Society, the Fruiterers' Company, and the British Fruit Growers' Association in the direction of inducing greater interest in the matter. The Chairman complimented the Association upon the work they had accomplished for so small an expenditure, and expressed good hopes for the future.

Much help could be rendered by landlords in planting fruit trees themselves, or in providing trees for their cottagers to plant, and by encouraging the latter they would also be improving the value of their estates. The cost of carriage to markets was also touch'd upon, and several serious anomalies were mentioned, notably in the heavy charges of cartage from terminal railway stations to the markets as compared with the rates per ton from station to station. Instances were given where the cartage rates by the railway companies are four or five times in excess of the ordinary carriers' rates, and it was mentioned that the recent re-arrangement of railway rates did not include cartage, so that much remained to be done in that respect.

So wide a scope did the Chairman cover in his address that some subsequent speakers confessed that he had left little for them to say on general topics; and Mr. T. FRANCIS RIVERS, who followed, confined his remarks to a brief consideration of the aspects of foreign competition in relation to home growers.

Then came Mr. J. WRIGHT, with "Object Lessons for Cottagers and Allotment Holders," the subject being brought before the audience in the best possible way. Time only permitted reference to Strawberries, Raspberries, and Gooseberries; but defective and correct methods of planting, pruning, and general culture were clearly indicated, and many useful hints were given for the guidance of the inexperienced. In concluding, he read a letter from a tenant, in which a simple method of dealing with the difficulties arising from planting fruit trees was mentioned, the custom being for the incoming tenant to pay a valuation for trees planted by the former occupier, or for the landlord to take them in the same way, and then charge it to the new tenant. The plan had answered so well that it had raised the value of the land enormously.

"How to encourage fruit culture among small farmers and cottagers" was the next subject, which was taken up by Mr. G. HAMMOND, an extensive fruit farmer in Essex, and treated in a thorough manner. The difficulties in relation to land tenure were pointed out, the necessity of securing the landlord's co-operation and consent was dwelt upon, also the desirability of adopting the custom of valuation for tenants' improvements for work of this kind. Continuing, Mr. HAMMOND said:—

"As to the amount of profit to be made by growing fruit, many wild and extravagant statements have appeared, which only tend to mislead and disappoint. What this Association has said, and what it still maintains, is this,—That with a proper selection of sorts suitable for each district, together with careful and attentive culture, a reasonable return may be confidently expected, quite sufficient to justify many in incurring the necessary expense of planting."

Concerning technical education the Rev. T. W. SHARPE, Her Majesty's Inspector of Training Colleges, said he felt certain that the introduction of a system of agricultural and horticultural training in schools in rural districts would readily be taken up by the Education Department. He rejoiced in the fact that the Surrey County Council could devote £15,000 per annum to purposes of technical education, and was sorry that the London County Council did not do something in the same direction. Sir JAMES WHITEHEAD said he had for some years advocated technical instruction in regard to agricultural and horticultural pursuits in rate and State-supported schools.

A practical address on the preparation of the soil for fruit trees was delivered by Mr. JOSEPH CHEAL. Mr. A. H. SMEE followed with a few suggestions upon the renewal of old orchards and fruit plantations, and the business concluded with a hearty vote of thanks to the Chairman, proposed by Mr. GRANVILLE LEVESON-GOWER and seconded by Mr. HALSEY, of the Surrey County Council.

The show in connection with which the Conference was held was remarkable for splendid collections of vegetables, fruit not being sufficiently grown in the

district to make a display; but a few excellent collections and individual dishes demonstrated what could be done in that direction.

THE POTATO CROP.—The report on the condition of the Potato crop which we publish in the present issue is generally of a hopeful character, although from the exigences of circumstances it was prepared a little too soon. The haulms were very generally cut back by late frosts, but they started well after, and up to the date of our report, little disease had appeared. These hopeful prospects must, however, be seriously discounted by the subsequent appearance of the Potato mould. The wet weather is propitious to its growth, but as the temperature is low we may well hope that the growth of the fungus will be limited in amount. In the meantime it is still possible, to some extent, to control and mitigate the disease either by high moulding or by the use of copper-sulphate in some of the methods so often mentioned. These means will be specially beneficial in small isolated gardens such as those tilled by cottagers. Of course, every means should be taken to destroy the diseased haulm by fire, and to discontinue propagating the disease in the efficient manner now almost universal. Equally, of course, we are sorry to say, nothing will be done. As we write, waggon loads of Potatoes are passing our windows, packed with rotting haulm. Let the reader, in imagination, follow the course of this to the manure heap, and he will judge how careful we are to propagate and extend the pest whose ravages we deplore.

OUR JUBILEE YEAR.—The large number of letters of congratulation that we have received has been indeed a matter for satisfaction to us. Many of these have been of so personal a nature that it would be unbecoming in us to make them public, and we have been constrained either to omit their publication entirely or to "edit" them very severely before they could be allowed to meet the eyes of our readers. The following letter, however, in justice to our contributors, past and present, and as appreciative of our endeavours, we cannot refrain from making public, and at the same tender our heartiest thanks to the honoured writer:—"Your valuable publication is now, I am aware, in its fiftieth or Jubilee year, and, though somewhat late, I should not like to omit sending you my hearty congratulations on the felicitous event. I think, too, you will perhaps be pleased to know that I am one of your oldest subscribers having taken in the *Gardeners' Chronicle* for the last forty-eight years. I can assure you that its arrival each succeeding week during this long period, has ever been looked forward to by me with pleasure, knowing that its contents would be sure to be not only interesting, but above all accurate or reliable, and consequently a never-failing source of profit. I feel therefore that I am deeply indebted to the original founders and to those editors and correspondents of the journal who have passed away as well as to yourself and your numerous scientific and practical fellow-workers who are so untiring in contributing the results of their experience to its pages, and thus rendering them invaluable to all who are interested in plants and flowers. In conclusion, I sincerely hope the *Gardeners' Chronicle* will continue to retain, and for very many years to come, the enviable position it holds among the publications devoted to the advancement of horticulture.—ERNEST BENARY, Erfurt."

GARDENERS' ORPHAN FUND.—At the usual monthly meeting of the committee, held on July 31, at the Horticultural Club, Hotel Windsor, W. MARSHALL, Esq., in the chair, the following special contributions were announced:—Flower-stall at the Richmond Horticultural Exhibition, per Miss Ford, £6 10s. 6d.; flower-stall at the Croydon Horticultural Exhibition, per Mr. G. W. Cummins, £11 5s. 6d.; sale of flowers at the Royal Aquarium Rose Show, per Mr. R. Dean, £13 15s. 6d.; Wimbledon Horticultural Society, £11 0s. 6d.; Ware and District Horticultural Society, per Mr. R. Dean, £1 11s. 6d. From collecting-boxes as follows:—Mr. D. T. Fish, opening of Hardwicke Gardens, Bury St. Edmunds,

£11 15s.; Mr. W. Brown, Florist, Richmond, 4s.; Mr. W. H. Divers, The Gardens, Ketton Hall, Stamford, 12s. 1d.; Messrs. Cannell, The Nurseries, Swanley, 11; Miss Barron, Chiswick, 18s. 9d. The Hon. Secretary reported that over 10,000 collecting-cards were issued in view of the national collection, and that the sum returned amounted to over £250. The committee adjourned until the last Friday in September.

THE HORTICULTURAL CLUB—The annual excursion of this Club took place on Wednesday, July 29, when Crawley and the neighbourhood were selected for a visit. The weather proved somewhat unfavourable, but the party to the number of twenty-four, including several ladies, alighted at Three Bridges Station, entered the three brakes provided for their accommodation, and drove off through Crawley to the nurseries of Messrs. CHEAL & SONS. They were there received by the members of the firm and staff, and immediately commenced a tour of inspection through these grounds, and as far as time would allow, examined the numerous subjects of interest, especially amongst the fruit, herbaceous plants, flowering shrubs, and Dahlias, and before leaving partook of light refreshment upon the lawn adjoining the house, under the leafy shade of the overhanging trees. They then re-entered the brakes, and drove to Worth Park, the residence of Mrs. MONTERRONE. They were received by Mr. GLEN the gardener, and were conducted in the first place through the various greenhouses and kitchen gardens. They then entered the corridor surrounding the winter garden. The space enclosed by this long corridor is laid out in an elaborate geometrical design, with fountains in the centre, and the beds are now gay with brilliant flowers. The broad terraces and Italian gardens adjoining the mansion were next inspected, and a tour of the park was commenced; the party were led by winding paths through woodlands and shrubberies surrounding the beautiful lake to the farmstead, where they were met at the model dairy by the steward, Mr. MARE. They were here hospitably entertained at luncheon. After the luncheon Mr. D'OMBRAIN expressed the gratitude of the members to Mrs. MONTERRONE for her most kind and generous reception of the Club, and complimented Mr. MARE and Mr. GLEN upon the excellent condition of the whole establishment. Mr. WILKS seconded on behalf of the Royal Horticultural Society, and Mr. MARE suitably responded. After this the party were conducted by Mr. MARE over the working dairy, and the various buildings of the model farmstead. The brakes were again mounted, and the party started for a long drive through Tilgate Forest with its lovely scenery to Handeross Park, the residence of Mr. WARREN. They were here met by Mr. OFFER, the steward. The gardens contain a rich collection of Japanese and other dwarf Conifers, most of which presented a particularly healthy appearance, and have passed through the late severe winter unharmed. The party then started for a long tour of inspection through the undulating forest-land surrounding the gardens, where the natural wildness of the scenery is undisturbed; but its charms are added to by the judicious planting of a large assortment of ornamental trees. And here, in wild and natural beauty, may be found a collection of Coniferae, consisting of all the known varieties that will thrive in this country. The winding paths of velvety turf through this heather-clad forest having been traversed, the party came back to the gardens, where the conservatories were visited, and the unequalled specimens of stove and greenhouse plants which have gained such wide reputation, were greatly admired. The clubbists left the residence of Mr. WARREN amidst continuous rain, and returned towards Crawley by way of St. Leonard's Forest, driving through the grounds of Holmbush Park, the residence of Col. CLIFTON BROWN. Most of the party, in spite of the rain, left the brakes, and walked through the pleasure-grounds, over which they were conducted by Mr. PATTERSON, the gardener. They then returned to the "George" Hotel at Crawley,

where an excellent dinner awaited them. The cordial thanks of the Club were given to Mr. D'OMBRAIN and Mr. CHEAL for carrying out the arrangements, and the party then re-entered the saloon carriage which awaited them at Crawley station, for the return to town.

STEPHENS' BOOK OF THE FARM.—By the issue of the sixth divisional volume (Part 2 of Volume III), the publication of the new edition of this standard work is completed. The many changes and new developments which have arisen in British agriculture during the twenty years since the publication of the third edition, have rendered it necessary not only that the entire work should be recast, but that several new chapters should be introduced. This concluding divisional volume includes an exhaustive chapter on farm buildings, embracing a large number of plans of farm steadings; plans for dwelling houses for farmers and farm cottages are also given. The complete work is now also published in three handsome volumes, strongly half-bound in leather, extending in all to over 1640 pages. The fulness of the index, and the exhaustive character of the work, will be gathered from the fact that the index alone contains upwards of 4200 references. We can thoroughly recommend the book as trustworthy and adequate.

HYBRID LILIES.—Dr. MACFARLANE obligingly sends us the subjoined note concerning the interesting hybrid raised by Mr. POWELL between the dark Dalmatian variety of *L. Martagon* and *L. Hansonii*:—"By the kindness of Mr. C. B. POWELL I received fully a fortnight since a magnificent flowering shoot of the above Lily hybrid, flowered for the first time by him last year, and noticed by you in the *Gardeners' Chronicle* of July, 1890. Its parentage is almost identical with that of the hybrid flowered this season, at Haarlem, and recently described by Mr. BAKER. Whether it be owing—as it probably is—to the bulbs being young and vigorous, certain it is that the specimens sent overtopped in stature and flower production either of the parents as grown here, so that the specimen quite recalled KÖLBEUTER's description of some other hybrids which showed *statura ponderosa*. The hybrid has a special interest, as being the progeny of species very nearly related systematically, but widely isolated in geographical range. *L. dalmaticum* is a South European and Himalayan form, while *L. Hansonii* is Californian. In naked-eye characters, Mr. POWELL considered that the stem and leaves showed little of the *Hansonii* parentage; but a comparison, both last year and this, soon convinced me—in spite of Professor MEEHAN's remonstrance—that Nature had followed her common laws, and that we had a very even fusion of parent peculiarities. The leaf-colour of *L. dalmaticum* is a deep purple-green, of *L. Hansonii* a bright green, while a leaf of the offspring placed between, formed a neat transition in tint. I have been prevented as yet from making a complete microscopic examination, but from study of the leaf epidermis as to cell shape, number of stomata, &c., I fully expect that the hybrid will come very fairly between the parents in its vegetative parts. The flowers, however, Mr. POWELL truly remarks, are as exactly intermediate as one could expect. The mingling in diluted degree of the deep purple colour of the seed parent with the yellow and spotted condition of the sire is a very nicely balanced one. As stated by Mr. BAKER, Lily hybrids have been a rarity, but after microscopic examination of the pollen and ovules of this one, I feel tolerably certain that it may be perpetuated in a pure state, or crossed successfully with either parent or another species. The pollen grains seem good to the extent of from 90 to 95 per cent., thus almost equalling the parents. The ovules are well formed, and contain an egg-cell and help-cells of vigorous appearance. It remains for future experiment to prove or disprove the accuracy of this conclusion. On receipt of the specimen in full bloom, it was found that *L. Hansonii* had finished flowering in the Edinburgh Botanic Garden by a full week, while *L. dalmaticum* was in bud, and only opened on July 29. On

inviting an expression of Mr. POWELL's experiences, he wrote, 'Your observation as to the flowering period of the hybrid being intermediate is correct, for the plants of *Hansonii* here bloomed before any hybrid expanded, and the other parent, *dalmaticum*, is now (July 28) in bloom, ten days after the others were over.' Mr. POWELL informs me that he has obtained seeds of a Fritillary cross which, if successfully germinated and reared, should prove startling. Let us hope that they may show themselves amenable to the skilful treatment they are sure to receive."

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of the above on the 11th of July, 1891, the Floral Committee awarded the following first-class certificates to Messrs. De Graaff Brothers, at Leiden, for *Antholyza athiopica major* (new plant), *Babiana disticha* (new plant), *Bartholina pectinata* (new plant), *Delphinium Przewalskiana* (new plant), *Ferraria undulata* (insufficiently known plant); to Messrs. E. H. Krelage & Son, at Haarlem, for *Gladiolus ramosus* Hort. var. *Mad. Blanche Bourlon* (insufficiently known plant), *Hæmanthus multiflorus* Martyn var. *Kalbreyeri* (insufficiently known plant), *Iris Kämpferi* var. *Nicolaas Beets* (new plant), *Iris xiphoides* Ehrh. var. *J. Victor* (new plant), *Pelargonium* (Regal) *Princess Alexandra* (new plant), *Pelargonium* (Regal) *Princess Victoria* (new plant); to Mr. G. C. Van Meeuwen, at Haarlem, for *Achillea ptarmica grandiflora*, fl. pl. (new plant), *Ixia Beauty of Haarlem* (new plant), *Lilium biligulatum Beautiful Star* (new plant), *Lilium biligulatum Beauty* (new plant); to Messrs. Ant. Roozen & Son, at Overveen, for *Begonia tuberosa hybrida Masterpiece* (new plant); to Mr. C. W. R. Scholten, Jr., at Amsterdam, *Cattleya labiata Mossia alba*; to Mr. C. G. Van Tubergen, Jr., at Haarlem, for *Calochortus Howelli* (insufficiently known plant), *Calochortus Palmeri* (insufficiently known plant); to Mr. G. S. M. Wendelaar, at Beek, for *Lissochilus speciosus* (new plant); to Mr. K. Wezelenburg, at Hazerswoude, for *Aucuba japonica crassifolia aurea* (new plant), *Spiræa crispifolia* (bullata) (insufficiently known plant), *Spiræa macrophylla* (mandschurica) (new plant); to Messrs. Zocher & Co., at Haarlem, for *Catalpa Kämpferi purpurea* (new plant); *Pirus heterophylla* (new plant).

Second-class certificates were awarded to Mr. J. T. Van Den Berg, Jr., at Jutfaas, for *Delphinium hybridum Télégramme* (insufficiently known plant), *Delphinium hybridum No. 11* (new plant); to Messrs. De Graff Brothers, at Leiden, for *Delphinium Brunonianum* (insufficiently known plant); to Messrs. E. H. Krelage & Son, at Haarlem, for *Lilium elegans atropurpureum* (new plant); to Mr. G. C. Van Meeuwen, at Haarlem, for *Alstromeria revoluta*, (new plant), *Ixia Glory of Haarlem* (new plant), *Lilium biligulatum Prince of Wales* (new plant), *Lilium biligulatum The Sultan* (new plant); to Messrs. Van Namen Brothers, at Zwijndrecht, for *Solanum tuberosum fol. var.*; to Mr. K. Wezelenburg, at Hazerswoude, for *Hydrangea hortensis tricolor* (new plant); to Messrs. Zocher & Co., at Haarlem, for *Ligustrum japonicum aureo-marginatum* (new plant).

FATAL ACCIDENT FROM THE FALL OF A BOUGH.—The Hereford papers have lately recorded the death of two children from the fall of a bough of an old Elm. The bough was 30 feet long, covered with foliage, and the broken surface exhibited no special signs of decay. Periodical inspection of the trees, it is stated, was made, and all ordinary precautions taken against accident. Such accidents are not unfrequent, especially in the case of the Elm. As usual, the accident occurred in fine weather, when there was little or no wind.

THE RANELAGH NURSERY, LEAMINGTON.—On Mr. C. CRUMP leaving the Ranelagh Nursery at Leamington a year or so ago in order to embark upon a more extended sphere of fruit culture, Mr. ROBERT GREENFIELD, for many years gardener to the late THOMAS LLOYD, Esq., of The Priory, Warwick,

and who left consequent upon the death of Mr. LYON, became the lessee of this place at Leamington. The nursery, once a private garden when Leamington was a far less populated and fashionable place than it is now, was established by a Mr. CULLIS in 1810. It then passed into the hands of Mr. PARSONS, subsequently to those of Mr. J. H. HAWLEY, then to Mr. E. CRUMP, and finally to Mr. GREENFIELD. Fruit growing is a leading feature. There are seven vineries, four of them being late houses, Alicante, Gros Colman, and Lady Downes being largely grown, and the vines are in excellent condition and carrying excellent crops. Mr. GREENFIELD states that notwithstanding the rigours of last winter late grapes hung well until March. Then there is a large grape room for bottling. There is also a Peach House and houses for Cucumbers, Tomatoes, Roses, Stove, three ferneries, Orchard-House, conservatory, frames, &c., and a small nursery ground is attached. A large and growing cut-flower trade is done. There are many fine specimen Azaleas, especially of Fielder's White, Roses, Bouvardias, Tuberoses, Allamandas, and Stephanotis, trained to the interior roofs, which supply bloom pretty well all the year round; Eucharis amazonica, Lilies, Poinsettias, large quantities of Ferns, Adiantum cuneatum and Pteris tremula especially, Palms, &c. In one of the houses the Glory Pea of New Zealand, Clanthus Dampieri, is in very fine character, bearing rich scarlet flowers, with the large purple-black boss at the base of the standards. In the open ground are a large number of Chrysanthemums for cutting, Dahlias, Marguerites, Asters, &c., and a great number of the leading kinds of bedding plants are grown in the proper season. In Bath Street, Mr. GREENFIELD has a shop for the sale of seeds, fruits, plants, &c., and the growing trade necessitates that he should secure larger premises with more ample accommodation. *Visitor.*

FIFTH REPORT OF THE UNITED STATES ENTOMOLOGICAL COMMISSION.—This report, which forms a thick 8vo volume, is published at the Government printing office at Washington, and is substantially a revised and enlarged edition of Dr. PACKARD'S *Insects Injurious to Forest and Shade Trees*. Though applying especially to the United States, there is very much that will be of service on this side of the Atlantic. Indeed, the book is a veritable cyclopædia on forest entomology, dealing with the insects attacking various trees in their several parts, and with the best methods of preventing their ravages or of palliating the consequences. Numerous woodcuts, no fewer than forty plates, and elaborate indexes go to make up a book of first-rate importance and value.

COLORADO.—The eighth annual report of the Chamber of Commerce at Denver (Colorado) is before us, and is truly a wonderful record of progress in a short time. Thirty years ago a mere miners' camp, Denver now contains 150,000 people and all the appliances of a great city. The pioneers of Colorado were thoroughly convinced that no vegetable growth was possible on the great American desert except the Cactus, Sage, Yucca, Buffalo-Grass, Scrub Oak, and other "brush." Now the history of the world may be challenged to furnish another transformation as radical as that which occurred within about fifteen years. The prairie has been changed as by magic into the grain-field, the orchard, the garden, and the flower-bed. This state of things is reflected in the statement that whilst in 1890 the mineral produce of the country amounted to 35,000,000 dollars, the agricultural products were recorded at 44,000,000 dollars. The health-giving climate is attracting numerous sojourners, and if Colorado had given us nothing but the blue Spruce (*Picea pungens glauca*) she would have earned the gratitude of horticulturists.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The series of prizes offered by MARTIN R. SMITH, Esq., on July 21 were not competed for, owing to the season of the year being too late for Carnations; but Mr. SMITH is still anxious that

the prizes should be competed for, and again offers them on the occasion of the Royal Horticultural Society's meeting at the Drill Hall, James' Street, Westminster, on August 11, 1891. Notice of entry must be given to Mr. A. F. BARRON, R.H.S., Obiswick, W., three clear days before the day of exhibition. The Carnation Society will provide bottles if desired. The competition will be as follows:—Class A, the best border variety of self-coloured Carnation, not less than twelve trusses—three prizes: £3 3s., £2 2s., £1 15s. Class B, twelve varieties of self-coloured border Carnations, not less than six trusses of each variety—three prizes: £3 3s., £2s. 2s., £1 15s. Class C, eighteen varieties of flake, bizarre, or fancy Carnations or Picotees, not less than six trusses of each variety—three prizes: £3 3s., £2 2s., £1 15s. The following conditions must be observed by exhibitors:—1. Each exhibitor must sign the following declaration:—I certify that all trusses shown by me for the prizes offered by MARTIN R. SMITH, Esq., have been cut from plants which have been wintered without protection in the open garden, and that they are staged without "dressing," and exactly as they were cut from the plants; 2, each truss to have not less than three flowers or buds; 3, each truss to be cut with stems not less than 9 inches in length; 4, to be shown with Carnation foliage and buds; 5, a specimen of the foliage of each variety to be shown with the flowers; 6, the trusses to be staged in bottles, tins, or glasses; 7, no bands or ties round the calyx, and no paper collars or wire supports to be used; 8, a burst calyx to be a disqualification. Mr. JAMES DOUGLAS is the Hon. Sec.

TIMBER CULTIVATION IN GREAT BRITAIN.—A correspondent recently wrote to Mr. CHAPLIN asking him to give attention to the subject of the growth of timber, and the profitable results likely to accrue from timber cultivation on the waste lands of Great Britain, and suggesting that the Government should stimulate the cultivation of trees, through the medium of the Board of Agriculture, by grants of money towards the initial expense of planting, &c. By Mr. CHAPLIN'S direction the following reply has been forwarded:—"Sir,—I am directed by the President of the Board of Agriculture to acknowledge the receipt of your letter of the 20th June last, relative to the planting of trees on what is at present unprofitable soil in Great Britain, and to thank you for your suggestions, which shall receive due consideration by the Board of Agriculture. I am to add that an inquiry is now being made in the agricultural returns for 1891, to ascertain the present extent of woodlands in Great Britain.—I am, Sir, your obedient servant, RICHARD DAWSON, Assistant Secretary."

MESSRS. DANIELS BROTHERS, NORWICH.—The employes of Messrs. DANIELS BROTHERS, seedsmen and nurserymen, of Norwich, had their yearly outing on Monday, July 27, going from Norwich, to the number of sixty, by road to Cromer, North Walsham, and Aylsham. An agreeable day was spent, the party reaching Norwich about 11.30 P.M.

PAPAVER SOMNIFERUM THE BRIDE AND SNOWFLAKE.—Single Poppies have for some time past been great favourites, and the beauties of the now well-known Shirley Poppies have done much to fix the taste. In McArthur's nurseries, Maida Vale, London, the above-named new satiny-white varieties of an old species have been proved to be very floriferous, and constant in character. The proper method of securing them in the best condition as cut flowers is to take them just as they are about to expand. They will then last a long time, especially if kept in a cool shady room. The Bride has large single white flowers, with wavy edges to the petals; and in Snowflake the flowers are of a similar character, but the edges of the petals are deeply cut and fringed. A vaseful of these pretty white flowers is a very agreeable object.

FOR SALE.—The *Midland Counties Herald* contains an announcement to "Americans" and others seeking an historical residence, that Impington Hall,

near Cambridge, once the residence of the PERRIS family, is to be sold with 300 acres of land. Some Americans, when they become possessed of land in the old country, are greater sticklers for their rights than the most pronounced autocrats, so that it is not altogether with complacency that we see historic mansions falling into the hands of foreigners. True, we hardly consider the Americans as foreigners, and the generation succeeding those who pay the old country the compliment of buying up land may be born Englishmen.

STRAWBERRY SPORTS.—Mr. RIVERS communicates to us a statement, made by a correspondent of his, to the effect that certain strawberry plants which used to yield red fruits now produce white ones, and some both red and white at the same time. The sorts were originally such kinds as Sir Harry, British Queen, Sir Charles Napier, &c. The specimens sent to us were decayed on their arrival, but still retained enough of their original colours to substantiate the above statement. It is hard to account for this arrest of development occurring simultaneously in several sorts. We do not know if there are any circumstances in the nature of the soil or mode of culture to account for the phenomenon, which seems to differ from the sporting consequent on the unmixing of previously crossed elements.

NITRIFICATION.—One of the most important discoveries of recent years affecting the cultivation of the soil is that relating to the action of minute organisms in rendering soluble, and therefore available, certain nitrogenous compounds in the soil. Among English experimenters in this direction Mr. WARINGTON, of the Rothamsted laboratory, takes a leading position. In a paper recently published, Mr. WARINGTON reviews the whole subject, which contains too many technical details to be more than mentioned here; but one conclusion we must cite as showing that there are in the soil at least two organisms, one of which by oxidation converts ammonia into nitrites, the other by a similar process changes nitrites to nitrates. It will be remembered that the difference in the two sets of salts consists in the larger relative proportion of oxygen in the nitrates.

POISONOUS EFFECTS OF CEPHALOTAXUS.—The injurious effects of the Yew when eaten by stock are well known. M. CORNEVIN now shows that the nearly-allied *Cephalotaxus* has similar, but less potent effects. Gardeners should therefore be careful not to leave the cuttings of Yew or of *Cephalotaxus* in places where cattle or horses can get at them.

LATEST OF ALL STRAWBERRIES.—We have received some fruits of Latest of All Strawberries from Messrs. W. LOVEL & SON, Driffild, which, in spite of the badness of the packing, had borne the transit from Driffild very well. It is a pale-coloured fruit, of considerable firmness of flesh, combined with a pleasant flavour. Unless it be later than Elton its name is misleading, although by many its freedom from acidity would recommend it.

FLOWER SHOW AT ST. GEORGE'S-IN-THE-EAST.—On Thursday afternoon, as we learn from the *Daily News*, August 1, Mrs. A. G. CROWDER opened the fourth annual flower show in connection with the St. George's-in-the-East Window Garden Society, the exhibition being held in the grounds of the parish church. In spite of the unfavourable weather, there was a large attendance in the evening, when the LORD MAYOR, who was accompanied by the LADY MAYORESS, presented the prizes to the successful competitors. The Rector (the Rev. C. H. TURNER) explained that Mr. C. T. RITCHIE, M.P. was prevented from fulfilling his engagement to take part in the day's proceedings, and pointed out that some 400 entries had been made for the show, but there were only 200 exhibits. The LORD MAYOR having briefly commented on the desirability of flower cultivation, a cordial vote of thanks was accorded to the civic visitors, on the motion of the Ven. Archdeacon SINCLAIR, seconded by Mr. COLLYER.

CARDIFF SHOW.—On Wednesday, August 12, the Cardiff Horticultural Society's show will take place, and in conjunction with it the British Fruit Growers' Association will hold a Conference at 4 P.M., at which papers will be read by Mr. E. J. BAILLIE, on "Fruit Growing as an Industry," and another by Mr. A. PETHIGREW, on "Hardy Fruits for South Wales." The show, an important one, is expected to be a very successful affair, as it is very well supported.

ONCIDIUM MEASURESIANUM.—There is now flowering at the Woodlands a new yellow and green *Oncidium*, named [provisionally?] *Measuresianum*; the blooms are nearly as large as those of *Oncidium crispum*; the colouring reminds one of the tints found in the rare *Cypripedium Ilyeanum* and *Sanderia*, and is one of those charming combinations of green and yellow which are so attractive.

"THE HAYWARD'S HEATH HORTICULTURAL SOCIETY'S SHOW at Hayward's Heath, on Wednesday, July 29, will be remembered," says the *Sussex Daily News*, "by all gardeners and lovers of flowers who found their way to Hayward's Heath as the grandest collection of flowers, fruit, and vegetables that has been brought together in the district. There was a remarkably strong competition in groups alike of flowers, foliage plants, and Ferns. The floral portion was of high merit, and was the marked feature of the show. Fruit was good, but not very abundant, the season perhaps being hardly favourable to a more than ordinary display of fruit. The vegetables displayed in all sections were of the highest quality. The cottagers' section was first-class in quality, but the number of exhibits was hardly so strong as might have been expected from the wide district covered by the Society. The amateurs' section showed an improvement on last year. In the exhibition there were over 1200 entries, a proof of the increasing interest taken in the exhibition. It was a grand show, but a bad day. The rain fell in heavy showers during the afternoon, interfering with the excellent arrangements made for the outdoor entertainment of the visitors."

GRAND YORKSHIRE GALA FLORAL AND MUSICAL EXHIBITION.—The last duty of the Council and life members of the grand Yorkshire Gala was performed on August 3. Their work must have been of a pleasant nature, as it showed that as a result of the hard work and worry which they had voluntarily undertaken, they were able to hand over £200 to local charitable institutions. As the profits of the Gala amounted to £290, there will be £90 to carry forward towards next year's Gala, which we trust may be even more successful than the former ones.

THE LATE DR. HENRY BENNET.

We greatly regret to have to announce the death of this gentleman on the 26th ult., at La Bollène, Alpes Maritimes, France, aged seventy-five.

Dr. Bennet was born in Manchester in 1816, but was almost as much of a Frenchman as he was English. His medical education was completed and extended in the Paris hospitals, and he graduated in that city, both in arts and in medicine. He speedily acquired a great reputation as a specialist in London practice, but after some years symptoms of approaching phthisis induced him to winter in a more genial climate, and after some time he settled down for the winter months at Mentone, practising his profession and obtaining fame once more in another department of medicine from that with which his name was at first associated. In this way he brought the Riviera in general, and Mentone in particular, into note as a winter residence for invalids, and so far as any one man could do it, Dr. Bennet may be said to have been the founder of Mentone. He found it an obscure hamlet—he leaves it the resort of thousands of invalids from all countries, with all the luxuries and appliances suited to their condition. In the summer

months Dr. Bennet, until a few years back, resumed his practice in London, filling up the interval between leaving the one city and establishing himself in the other, by visits to all parts of the Mediterranean region. Dr. Bennet, as is natural in so accomplished a physician, was an acute observer, and he was one of the first who, in studying the peculiarities of different climates from his special point of view, recognised the great importance of noting the general character of the vegetation, its periodicity, and the course of its growth. Botany and horticulture were taken as his guides, because "they are the surest, the least capable of deceiving." The interest he felt in these observations was happily reflected in the letters he contributed to these columns—letters which, to a large extent, formed the basis of his delightful book, *Winter and Spring on the Shores of the Mediterranean*.

At Mentone, too, he established on the rocky hillside a series of terrace gardens where both soil and water were at first deficient, and where the sun flames upon the bare rock with an intensity of which we, in this country, can form little idea. These do not seem very favourable conditions for gardening, but Dr. Bennet overcame them. The scanty soil was supplemented by supplies obtained from the crevasses of the rocks and elsewhere; water-courses were diverted, underground irrigation practised, and reservoirs established, so that before long Dr. Bennet's garden became for its extent one of the most remarkable anywhere in Provence. A full account was given in our columns in 1868, and illustrations of them were given in our number for October 3, 1874, since which time, we believe, many extensions and improvements have been made. At Weybridge, where he also for a time resided during the summer under very different conditions, Dr. Bennet pursued his experiments and observations, in so doing affording another illustration of the evils likely to arise from that unholy divorce between medicine and botany which has been forced upon the authorities of late years. This, too, has been effected at the very time when botanical training has become of the foremost importance in unravelling the phenomena connected with the causation of disease!

Dr. Bennet, from his experience and varied attainments, was a delightful companion, as many former members of the Horticultural Club will remember, and his loss will be severely felt, by those who were privileged to be reckoned among his friends.

THE FATHER OF HORTICULTURE IN ITALY.

The following extracts, relating to General Ricasoli, have been obligingly furnished by Cav. E. Fenzi:—The announcement of the sudden death of General Vincenzo Ricasoli deeply grieved all his townsmen, and especially us, his colleagues, and the echo of the mournful tidings has reverberated, not only in all parts of our peninsula, but also in the most distant lands, inasmuch as in every corner of the earth, botanists and amateurs of plants derived satisfaction from keeping up continual correspondence with him respecting the studies which were dear to him from his earliest youth.

Passionately fond in early life of all natural sciences, and especially so of botany, he became acquainted with some of the most noted scientists of every country, and studied and apprehended the climatological and vegetative conditions throughout Italy. But even at that early period of his study of botany and of the laws that regulate the development of vegetable life he was principally devoted to the introduction and cultivation of plants, useful and ornamental, of distant countries. Often have I heard him enumerate amongst the most dear memories of his young days, the new plants placed by Baring in the garden of Rusciano, and more especially the first *Chrysanthemums*, which were admired in bloom towards the year 1835, if my memory does not deceive me.

The military service, which took him as a volunteer to the fields of Lombardy in 1848-49, and later on with the high-famed General Lamarmora to Sardinia and Crimea, was powerless to detach him from the studies of his predilection, as is clearly proved by the letters that he was then addressing to his brother Bettino Ricasoli, who shared his tastes. The extensive plantations of every kind undertaken at Brolio and on the heights of Pratomagao, and still more than these, the very rich collection of *Cocifers* placed in the garden of Pellegrino, remain as living memorials of their common predilection. It was the exclusive work of Vincenzo to write a most accurate monograph of such collection, which he published in 1874, at the time when the first International Exhibition of Horticulture took place in Florence.

The traveller coming from Rome, weary after passing through the deserted Maremma and the unhealthy jungle of the Alberese, fixes his gaze when nearing Grosseto, with satisfaction and admiration on an extensive plain, cultivated to perfection, where, at equal intervals, arise spacious and comfortable dwellings, each of which bears the name of one of the most glorious feats of arms of our national Epopee, thus showing that the agriculturist had not forgotten that he, too, had been a soldier in the battles of Italy's independence. This property is Gorarella, the past history of which, and its present state, deserves now a visit from all those who are aware that agriculture is the chief source of riches in Italy.

It was here that the first agricultural machinery was introduced into the Maremma, and Gorarella in a short space of time became the model farm of that region. Not satisfied with the results obtained, he set to work to form a colony in the plains of Grosseto, and succeeded in his endeavour. It was a true battle, fought to the very knife, not only on account of the malaria, but against the prejudices and difficulties that assailed him on all sides, but his determination and perseverance triumphed over all, and now numerous families live there in a prosperous state.

The interesting memoir which he published several years ago on the introduction of the Mezzeria system in Gorarella, with accurate statistics, and an account of all the trials and sacrifices made by him, not empirically, but based on science, remains a lesson of inestimable value.

Persuaded that in the culture of the Vine lay the principal resource of agricultural production in Tuscany, and emulating what his brother Bettino was carrying out in the landed property annexed to the castle of Brolio, he covered with extensive vineyards the slopes of Monte Argentario, and with judicious choice in the Vines, and even more judicious methods of making the wine, he succeeded in rendering acceptable as table wine, not only here, but also in countries far removed, a product which, until then, scarcely obtained any sale whatever, on account of the rough mode of preparing it. It was at Monte Argentario that our friend centred his care and studies during the last twenty years of his most active life, dedicating them entirely to the advancement of science and horticulture. Those who had the good fortune to visit this garden of Casa Bianca well know that the descriptions respecting it have always fallen short respecting it.

For twenty years down to our present time he cultivated this enchanting spot, not limiting his attention to placing each plant appropriately with the care used in a school of botany, but studying, one by one, the requirements of each species, so as to obtain the best conditions suited for their development, multiplying them and comparing them, so as to unravel the intricate synonymy arising, often from ignorance, and at times even from fraud. The mildness of the climate, and protection from some of the winds, are the natural advantages that he found at Casa Bianca. But what is the reverse of the medal? A stony soil, entirely averse to cultivation, an absolute lack of water, and a want of men to execute the necessary works!

And yet those who now visit those woods of trees

and plants from every temperate region of the globe, and see the life-giving water emerging in abundance wherever required, can realise the immense difficulties that have had to be overcome.

In 1876, under the modest title of "Eight Years' Experience in Plants on Monte Argentario," he consented to publish in the then incipient *Bullettino* (monthly record) of the Tuscan Society of Horticulture, a description and summary of the attempts made, and of the results obtained. Later on, in 1888, and always in the same practical and modest style, which was naturally his own, he published, under the title, "Respecting the Utility of Gardens of Acclimatation, and of the Naturalisation of Plants—Experiments made in the garden of Casa Bianca, near Port' Ercole," a report which he had but a few months ago enriched with a supplement, offering an account of the successive introductions and experiments.

The number of species now experimented upon at Casa Bianca is above 2000: the genus *Eucalyptus* comprises 114 species; *Acacia*, 190; the Palms and Cycads above 200 varieties or forms. Each species of plants, after it has bloomed, has been scrupulously studied, and its proper place assigned to it, and in every case a record of the degree of resistance to cold and drought, as also the greater or lesser aptitude of its spontaneous dissemination, has been made.

To the mind that reflects on this task, it must appear almost impossible how a private gentleman could possibly do so much, and so well. He was one of the first founders of the Tuscan Horticultural Society thirty-six years ago, and sat constantly in its councils, always willingly offering his helping hand on every occasion.

When, in 1876, the *Bullettino* was started, he became one of its most ardent co-workers. All the volumes are full of his articles, and besides his memoir, already mentioned, his translations of Mr. Baker's monograph on *Agaves* and *Yuccas* are particularly noteworthy, on account of the original observations he therein introduces. To him it is also due if the *Bullettino* has been enriched with chromos of new and noticeable plants, which has greatly contributed to its justly obtaining much appreciation, even in foreign countries, amongst similar publications.

CULTURAL NOTES.

HERBACEOUS CALCEOLARIAS.

When we consider the beauty of the *Calceolaria*, one wonders that they are not more commonly grown; but probably this arises from the difficulty many appear to think there is in raising and cultivating them, which is an erroneous notion, as in reality they are not difficult but easy of management, although they do require some amount of care and attention. This is chiefly needed at the first, and during the early stages of the life of the plant, but anyone who will carry out the following instructions need not fail. The first, put good drainage into a large shallow pan, and over the crocks put some moss or rough siftings of soil, filling up to within half an inch of the rim with finely-sifted light rich mould, which should be pressed quite firm and made smooth. The next thing to do is to sprinkle it with water so as to wet without washing the soil, and after the soil has stood and drained an hour or so, the seed may be sown by scattering it very evenly and thickly over, but it must not be covered beyond having the faintest sprinkling of silver-sand, as the seed is so small, and would never get through. The seed having been sown in the way referred to, it should be covered with a piece of clean glass and placed beneath a hand-light, stood in some damp and shady spot, and there kept close till germination takes place, which under such favourable conditions it will speedily do. The piece of glass should be removed as soon as the seedlings appear, and these bedewed daily with a fine-rose can or the syringe.

As soon as the plants can be handled, they should be pricked out into pots or pans similarly prepared as those for sowing the seed, giving them an inch or so between, which will afford space enough for them till they have to be potted off singly. The soil most suitable for this purpose is a mixture of friable loam, leaf-mould, and rotten cow-manure, in the proportion of two-thirds of the first-named, and equal quantities of the latter, with just a little sand to keep the whole open. For the first potting, 60 sized or 3-inch pots are quite big enough, and as the plants are very soft and tender, they must be handled carefully, or much harm will follow. After the potting the best place for hybrid *Calceolarias* is an ordinary garden frame, stood on a coal-ash bottom in some naturally shaded spot, as then there is no risk from attendants not protecting them from sun when needed, and sudden outbursts of that luminary or exposure to it for only a short time may be fatal. *J. Sheppard*. [Our correspondent then alludes to cultural details to pursue at a later period, which we shall print at a more fitting time. Ed.]

PODOCARPUS NUBIGENA.

This is a species introduced from Valdivia by Mr. W. Lobb through Messrs. Veitch, and long ago described by Lindley in Paxton's *Flower Garden*, 1851, ii. 162,

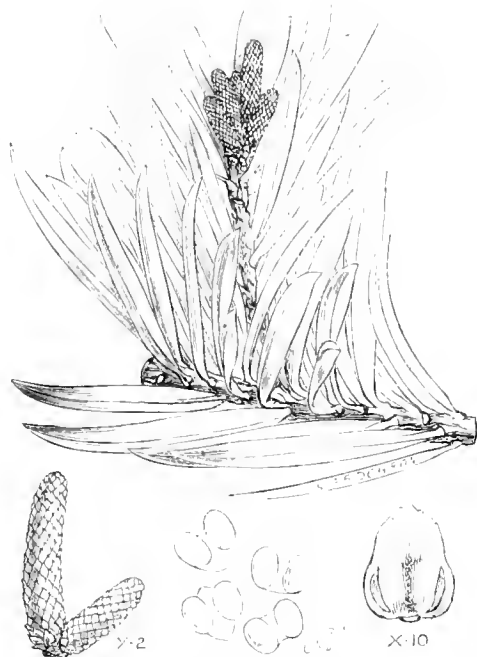


FIG. 23.—PODOCARPUS NUBIGENA. SHOWING MALE CATKINS. Separate anther magn. 20 diam., pollen grains magn. 240 diam.

f. 218, and in the *Journal of the Horticultural Society of London*, vi. 264. Subsequent writers have acknowledged the species, but added little or nothing to its history, so that it is not necessary to cite them in this place. Mr. Acton, however, has enabled us to fill up a gap in our knowledge, by sending us from his garden near Dublin, specimens showing the male flowers, which are in linear oblong catkins, half to 1 inch long, clustered at the ends of the branches. Each anther is prolonged into a deltoid, irregularly toothed crest, and the pollen has the winged character characteristic of *Podocarpus*, and which allies the genus, otherwise so different, to the *Abietinæ* (*Pinus*, &c.).

The leaf-structure shows an epiderm, a hypodermal layer, transfusion cells in the centre, elongated transversely and void of chlorophyll, and a central undivided vascular bundle. The structure is thus the same as in *P. chilensis*, and many others of the

genus. There are no stomata on the upper surface, but a broad band of them on either side of the mid-rib on the lower surface, marked by the presence of a layer of bloom.

Although the species inhabits Valdivia, the Andes of Chile and Patagonia at the snow line, it is not hardy enough to be depended on in this country. Carrière notes that in cultivation, when grown on its own roots, it grows with difficulty, but when grafted on *Podocarpus Totara*, it grows so vigorously as to be recognised with difficulty. *M. T. M.*

MESSRS. CARTER'S CROSS-BRED WHEAT, &c.

On the occasion of the usual inspection before harvest of Messrs. Carter's cross-bred Wheats, at their nurseries at Forest Hill, we had to regret the absence of Mr. Sharman through temporary indisposition. Mr. Bard, his efficient substitute, an expert in fertilising, must have found it a great satisfaction to be able to announce the cross-breeding of Barley. Hitherto, no one has introduced to agriculture, in this country, cross-bred varieties of that important cereal. Mr. T. Horsford, Charlotte, Vermont, U.S., claimed to have crossed Barley, as the following quotation from a letter to the writer, shows:—"In the summer of 1881 I crossed our common six-rowed Barley, which is the same as that which the French call *Escourgeon*, with the Nepal Barley, which is beardless and hull-less." He adds that the heads of the offspring were much longer than either parent, beardless but not hull-less, and they showed great vigour. The improvement of a cereal implies its adaptability for a particular soil and climate, and a good sort for America—where Barley is a far less important crop than in this country—might not answer in England. At any rate Messrs. Carter have taken a new departure so far as this hemisphere is concerned, and all who are interested in John Barleycorn will desire their success. The result of crossing the long-eared Golden Melon Barley with the thick-set Goldthorpe, is that most of the ears of the offspring are thickset like the male parent, and more so than in the case of the offspring of a reversed cross when Goldthorpe was the female parent. An ear of this thick-set cross, taken at random, was found to contain 39 grains.

The cross-bred wheat has tried the patience of the raisers in a way which all cross fertilisers of plants and animals alike will understand. Mr. H. Vilmoria says of the cross-bred varieties of wheat he has been engaged upon since 1873: "Four or five years' selection were necessary, on an average, to make each sort tolerably even and fixed." Messrs. Carter have found that each sort produces several types and many varieties, differing more or less widely in character. We feel sure they have acted wisely in not having continued the work of crossing, since they have enough to do in selecting and fixing the best types among the crosses of former years. We have seen with pleasure that several of their varieties, including Earliest of All and Hundredfold, have won high praise among growers in different districts, and that a large farmer in Essex has sold all the seed he could spare of his growing crop of the early sort at a price which shows the high appreciation of his neighbours. Among the new varieties now being tested at Forest Hill many might be named and their parentage described. We must avoid these details, and can only add that various sorts have been produced suited to all soils—strong and straw producing, or otherwise, and that excellence in regard to weight and quality have been secured by using the best varieties as parents.

Two new Peas were pointed out to us in the trial grounds—one a giant 7½ feet high, a great cropper, owing the name of Giant Scimitar; the other a dwarf, 2 feet high, loaded with large pods and named "Daisy." The fashion certainly runs in favour of Peas with comparatively short haulm, and, if "Daisy" does not disappoint present expectations, it will take rank with Messrs. Carter's former introductions, Telephone and Stratagem. The pods are

well filled, and the pea is as large, and is believed to be as productive as any of the Marrowfat family. The flavour, too, is, we are told, superior even to that of the favourites just named. *H. E.*

HOME CORRESPONDENCE.

CLEMATIS MONTANA.—This is an old inhabitant of our gardens, a native of the South of Europe which blooms in May—that is, earlier than any other Clematis that I am acquainted with. We have some plants of it here covering parts of the front of the Abbey of Forde, and extending many yards. It was this year covered with its white blooms, which are of the size of a five-shilling piece. It blooms on the shoots which are more than one year old, and every year we prune it back to its allotted space on the wall. After flowering is over, the growth is allowed to extend as will, hanging down the walls, and making quite a pretty feature. This species of Clematis is not fastidious as to soil; here its roots are under some large paving-stones, and get no water, except what percolates through the joints of the slabs. *Pro.*

MELONS, ETC., AT WOKINGHAM, BERKS.—There can be no doubt of the popularity of the Melon at the present day; the frequent exhibition of this delicious fruit, the production of new varieties—some good, some bad—and its extensive use in private establishments, amply denote the fact. The market men, too, would seem to be alive to its capabilities, judging by the extensive culture of the fruit at Stanley Vineries, Wokingham; the establishment of Mr. G. F. Pontin. Recently he had, in three houses, each 100 feet in length, about 600 fruits hanging, varying in weight from 3 to 10 lb., and many measuring 26 inches in circumference. The time that elapses from the date of sowing the seed to cutting the fruit, say, is three months and one week. There were observed a score of Melons whose aggregate weight would be 200 lb., and hundreds ranged from 4 to 8 lb. each. The varieties grown are Conqueror, Golden Perfection, Scarlet Invincible, Sutton's Triumph (the latter a fine novelty); Imperial Green, and two others not named which are exceptionally good in shape, colour, and netting also. One named Pontin's Model will, doubtless, be heard more of. It is a cross between Triumph and Scarlet Invincible, of good habit, and a free setter. There were about 400 plants just up for the batch that will fruit in September; and Mr. Pontin hopes to do this season what he has accomplished for many years, viz., cut over a thousand Melons in one year. The fruits are grown on banks simply thrown up as the soil was met with. Mr. Pontin has grown Melons in soil that was nearly all clay, and in others that consisted mostly of gravel, with about equal results! He allows two stems to each plant. Attention is not confined to Melons alone. There are three other houses, each 100 feet in length, which contained French Beans; others contained 1200 Tomato plants in good bearing. *B.*

GLADIOLUS IN ROSE BEDS.—One of the best ways of showing the blooms of Gladiolus in the garden is to plant the corms in the beds of Rose-bushes, as when the first flush of flowers of the Roses is over, the blooms of the Gladiolus are appearing. The beds of Tea Roses are those most suitable for planting with Gladiolus, their growth being not so strong as that of H. P.'s; and their dwarfier forms afford an excellent groundwork for the Gladiolus. I am this year trying the Lemoinei section, and intend leaving them to winter where they are planted, as they are said to be quite hardy; but whether that is so or not, they are a fine race of Gladioli, and quite apart from the other species. I think it will be found that they will be much grown for cut blooms. The soil that the Gladiolus likes is a moderately light sandy loam that has been deeply dug; which is also what the Tea Rose requires. Both Gladiolus and Roses are the better for annual dressings of rotten manure. *J. S.*

CELERY.—Celery has been having a fine time of it lately, as rains have been frequent and the weather cool, and they took very quickly to the soil after planting and are now growing apace. This will soon induce some to follow the old-fashioned system of earthing-up or beginning that process, which, in my opinion, is the greatest mistake possible in the management of Celery, as when fresh soil is

put in about it no one can water the plants, however careful he may be, without washing some of the earth down into the hearts and thus in a measure spoiling the plants. The very best thing that can be done for Celery at this season, or before, is to mulch the rows, seaweed being most valuable for the purpose, as the plants like a little saline matter, and the seaweed is inimical to slugs and insects, and by lying light and close keeps the ground under it constantly moist, thus benefiting the roots and accelerating the growth of the plants. Old Mushroom bed material is also a good mulching for Celery, and when the rows have either the one or the other, the watering can be carried out rapidly, and what is so afforded, benefits the plants and is not absorbed by the dry air. The finest Celery we ever had was treated as mentioned last year, which was watered with water with common salt and nitrate of soda dissolved in it. These were in the proportion of one tablespoon of each to four gallons of water, and with a view to test and see its effects thoroughly and distinctly we only applied it to about two-thirds of each row, and the benefit to those portions was plain and unmistakable, as might readily be seen, even on a cursory look, so free and fine were the plants and so fresh and green in their colour. This season I shall treat them similarly, but shall add some soot to the other ingredients. I opine that the Celery maggot and other insects will not like it, but when Celery is affected by the first-named, he is pretty safe between the tissues of the leaves, and can only be got rid of by squeezing between the finger and thumb. As yet, however, I have seen no maggots, and the leaves of the Celery plants show none. *J. Sheppard.*

TO KEEP POTATOS YOUNG AND FRESH.—My employer tells me that some one told him that if young Potatoes are dug up and put into tin boxes, and these buried four feet deep in the earth, the tubers will keep sound and good, and come out like new Potatoes at Christmas or any other time. I have never heard of it before. I should like to hear if any of my brother gardeners have tried it. *H. G. B.*

THE GARDENS, BRAMBLETYE.—This is one of the finest gardens in this part of Sussex, and under the careful supervision of Mr. G. F. Glen, everything is well managed. Looking through the houses recently, I noticed capital bunches of Muscat Grapes, and splendid crops of Peaches, Nectarines, Figs, &c. —in fact, such crops and quality could not well be surpassed. In the kitchen garden Apples and Plums seem to be well furnished with fruit, Pears not so plentiful, but bush fruits are an abundant crop. Just before leaving the kitchen garden to enter the pleasure-grounds, and in a nice sheltered corner a well-arranged piece of subtropical bedding has been carried out, the background being trees. Groups of Palms, Dracenas, Abutilons, Solanums, &c., look well with a kind of parterre planted around them with variegated Alyssum, amongst which are dotted plants of Lobelia cardinalis. At an opposite corner there is the best bed of the Double White East Lothian Stock which I ever remember seeing. Planted amongst these are Gladiolus—scarlet, no doubt; and when these are in bloom overhead the effect will be good. Mr. Glen is certainly fortunate in possessing a splendid new Lobelia, one of his own raising. The colour and bloom is far ahead of anything now in commerce, and it will prove a gem for bedding and growing in pots. *Visitor.*

FASCIATED LILY STEMS.—Herewith I beg to send you a photograph of two *Lilium auratum*, both from Mr. L. Boehmer's Lily fields here. The bulbs of both are about the same size, about 11 inches in circumference, but the large normal one has only 22 flowers and buds, while the other one has 113 flowers and buds. The flowers of the later one are of course not so big as the normal one, but only two-thirds of the size. The stem measured before parting about 3 inches, and is broad-like pressed together. Plants with so many flowers are scarce here too, but stems with 30 and 40 flowers are sometimes found. *A. Unger, Yokohama, Japan.* [We have seen as many as 200 flowers on one stem. *Ed.*]

NOVELTIES AT BELGROVE, IRELAND.—The Mexican Calochortus (*C. madrensis*) figured in last year's *Gardeners' Chronicle*, is now nicely in flower in an open bed in my garden, and is an exceedingly bright and pretty species, and apparently quite hardy, also very free flowering. It seems to be intermediate in size between the Calochorti and Cyclobothra, and is, I think, well worth growing; it is later in blooming than any other of the species

known to me save *C. Weedii*, which will not open till to-morrow or next day. *Amaryllis Hallii*, a hardy *Amaryllis* from North China, said to have blue flowers, is now on the point of blooming for me for the first time, and in appearance of head exactly resembles one of the Nerines. Mr. Baker says it is only a garden name, and thinks that it will probably turn out to be member of the Lycoris family. In colour, as far as I can judge of it at present, it will not be blue, but deep red shaded with purple. *Senecio compacta*, one of the shrubby New Zealand Groundsels, is now blooming with me, I believe for the first time in Europe; only four buds on one branchlet of a strong, good-sized bushlet. When they open, if fair to see, I might send you one for figuring. *W. E. Gumbleton.*

THE CATANANCHES.—I think two more useful plants for cutting from, and especially for use in floral decorations, can scarcely be found than *Catananche coerulea*, and its white variety, bicolor. It is so long since the sky-blue *Catananche* was introduced from Southern Europe, that the fact it is largely a neglected plant is not to be wondered at. The white form (*C. bicolor*) is a garden variety, raised, it is thought, nearly three-quarters of a century ago, but both well deserve a place in the garden. They are herbaceous perennials, and do well in a light soil in a warm position; the flowers are not too large, lasting, and are plentifully borne upon tall, erect stems, and if cut when little more than half expanded, tied together in bunches, and hung in a cool, dry place, with the flower-heads downwards, they become to a considerable extent everlasting in character, and are useful in winter when flowers are scarce. The flowers of *C. coerulea* are pale sky-blue, those of bicolor greyish-white, with a delicate tint of blue. As the plant seeds freely, I would advise growers to raise a few seedlings once in two years, and so keep up a succession of young vigorous plants. Both come true from seeds. I recently saw some epergnes in which the pale form of *C. bicolor* had been employed with excellent effect. *R. D.*

WHAT IS A SEEDLING? (*see ante*, p. 136).—Among florists a seedling is a flower that has not yet received a distinctive name. The term is not so readily understood now as it was twenty or thirty years ago. Then a florist would raise from seed, say, a number of Tulips, Auriculas, Pansies, Hollyhocks, Chrysanthemums, &c., and any of superior quality he would mark as seedling 1, 2, 3, and so on, or employ in place of figures the letters of the alphabet. He would then submit his seedlings when in flower to some competent tribunal or authority, and if a favourable opinion were passed, he would name and send out such as it seemed desirable to select for the purpose. Once named, the flower ceased to be a seedling in the ordinary acceptance of the term. This was the practice in the days of the old National Floricultural Society. It is still the practice at the meetings of the Floral Committee of the Royal Horticultural Society, and at the exhibitions held by the florists' societies up and down the country. And it is an almost invariable rule not to make an award to a seedling, however high its quality, until it has had a varietal name bestowed upon it. This practice is very generally understood, and works on the whole smoothly and satisfactorily. The main reason why a name is given, is to distinguish it, and assist in its identification hereafter. Of late years the practice of naming the varieties of certain popular flowers has practically ceased—I may mention *Antirrhinum*, *Cinerarias*, *Calceolarias*, *Gloxinias*, &c., and is followed only in the rare cases of something of exceptional merit. I am well aware that this statement of practice does not meet the objection that a plant raised from seed is a seedling so long as it exists as an individual, but as the term seedling is employed more particularly to plants exhibited for money prizes, or for some other distinguishing award, such as a Certificate, whether the foliage, fruit, or a blossom be the main feature it is desired should be recognised, I think its application is generally and widely understood. *R. D.*

COLUMBINES.—In reference to the robustness of cross-bred Columbines, "J. S." may be assured that any two species which are hybridised invariably give stouter constitutional progeny than do any one pure species. Still farther, they make first-rate perennials, and if the ground be good, or the plants occasionally assisted with manure, will endure for many years. Much depends upon cultivation, and few hardy plants pay better for good culture than do Columbines. Really attractive forms are not

limited to species, or hybrids of species. Many of the garden varieties are exceedingly beautiful, bloom invariably earlier than do the species, are remarkably robust, seed abundantly, and give a wealth of flowers admirably suited for ordinary house-decoration. There is not much art in crossing Columbine flowers, but it is well to remove the pollen-cases or anthers from the flowers to be cross-fertilised early. I have not found it needful to protect the fertilised flowers from insects, and have invariably found that the produce was just what the nature of the cross led me to anticipate. Some of the garden varieties will cross admirably with the species. *Chrysantha* is, perhaps, one of the very best seed parents, because of its robust habit; but I have always found crossed seedlings from it to be much stouter, and to bloom more profusely. *Chrysantha* and *cærulea*, and the latter and *californica*, give capital results. Anyone having these forms can make the crossing experiments for themselves. As seed ripens early, that is, during July, the product may be sown at once, and although there will be no bloom the first year, there will be a fine show of bloom the following year, when the true character of the seedlings will be evidenced. The long spurs of *Chrysantha*, *cærulea*, and others, form one of the great charms of their flowers. Happily, intercrossing these varieties does not in any way destroy that admirable feature—indeed, I think, rather helps to develop it. Intercrossing with garden forms helps to produce some odd or absolutely spurless flowers, bearing resemblance to small *Clematis* flowers; these are, however, exceptions. On the whole, we have in the Columbine one of the prettiest of hardy garden flowers, but still one far too seldom found in gardens. *A. D.*

BASAL ROT IN DAFFODILS.—Now that the season for planting *Daffodils* is commencing, may I be allowed to call the attention of planters to the "basal rot," which is a cause of serious losses and failure in many gardens. I refer to a morbid condition of the bulb, under which little or no new root is formed, and though the leaves and flowers may become partly developed, the bulb of necessity perishes. Different experts in plant diseases, to whom I have several times submitted affected bulbs at various seasons, have all assured me that no specific cause of disease can be detected. I conclude that the failure is due to impaired constitution, arising from unsuitable cultural conditions. The affection is almost entirely confined to Trumpet *Daffodils*, and different varieties suffer in different soils, making it probable that it is due to the presence or absence of some character in the soil suited or unsuited to the particular variety which suffers in each case. Ard Righ and the White Trumpets suffer most in my garden, and I am making experiments with lime, bone, sulphate of copper, and sulphate of iron, each by itself. If others would make similar experiments, we might in time learn how to improve the constitution of the affected varieties, and so save them from perishing as they now do. *C. W. Dod, Edge Hall, Malpas.*

GRAPES SCALDING AND CRACKING.—In the opening remarks of "S." on Grapes scalding and cracking, he endeavours to show that I attributed the first-mentioned malady entirely to want of ventilation, which is quite contrary to what I intended or wrote, and it is a well-known fact the sun will and does scald when the berries are exposed to its direct rays, and especially if it strikes them directly under the Vines through the end glass of a house the first thing in the morning, when the berries are cold. This, it appears, "S." has only recently found out, as he mentions that in spite of all precautions he has for years been troubled with scalding, and yet, according to his own showing, he has only recently adopted the simple remedy of shading, which, he says, has cured the evil. *J. Sheppard.*

MALFORMED BEGONIAS.—Some curiosities have appeared amongst a few *Begonias* to which it is my duty to attend. On one of the plants, which is a strong growing but rather poor variety, a few hermaphrodite flowers have appeared, which have, like the majority of male flowers, four perianth leaves, and a truly superior fully developed ovary, on which the wings are partly suppressed, and a small portion of the placenta covered with naked ovules protruding between the stigmas. At the base of the ovary a few fertile stamens of about normal size have also appeared, therefore I have a true hermaphrodite flower, which, however, is no improvement in beauty on the normal type; another plant, a yellow variety of sturdy habit with rather small flowers, which produced none but staminate

flowers for a long time, and but rarely a pistillate flower even now, is perhaps the most curious. The perianth leaves have been curiously marked by ridges with many points protruding down the middle of them, and in some cases naked ovules have been produced on the perianth leaves themselves. I at first thought them to be cells, but I find they are much too large, being about the size of unfertilised ovules. There does not appear to be any trace of a stigma. The stamens are not so numerous as ordinarily, and have shorter filaments, and the anthers are rather deficient in pollen. Flowers in which the placenta are protruding seem to be getting too common to attract very much notice. *W. L.* [Changes such as are above described, and of which our correspondent has obligingly sent specimens, are now commonly met with. Many such cases have been figured and described in these pages. The ridges on the perianth segments are new to us however: we suspect they may be attempts to form placentas. *Ed.*]

FRUITS IN MID-KENT.—It is not often that we have to record success with all kinds of fruits, but this year all are fruiting well, with the exception of Black Currants, which are the least satisfactory around this district, although in these gardens there is plenty. Prices, too, are fairly good, the jam factories that are springing up in all directions doing much good in preventing a glut in the markets; the trees, too, are very clean, and but little caterpillar or aphid visible on them. Where the thickly-set fruits were thinned early in the season, the trees are promising well for next year too—that is, if we get a fine bright autumn to ripen the wood. The prospects of fruit growers look brighter than for some years past, thanks to the lateness of the season, which was, no doubt, productive of fruitfulness, there being a chance of the trees when in bloom escaping injury from late spring frosts. *A. Waterman, Preston Hall Gardens, Aylesford.*

CEDRUS DEODARA.—Two trees here of this Himalayan Conifer are this season bearing a good crop of Cones. This is the first time that I have noticed cones on the *Deodar*. The majority of Conifers are producing but few cones this year, probably owing to the dull wet summer of last year, and the cold spring. Notable exceptions are *Abies cephalonica* and the Lebanon Cedars. *C. Herrin, Dropmore.*

CHERRY BIGARREAU DE SCHREKEN.—This fine black Cherry is well deserving of a place in every collection, especially where earliness is valued. Last year we planted some strong maiden trees on the open wall, and these produced a few fine fruits, which were ripe the second week in June, and almost all other fruits are quite a fortnight later than usual in ripening this year. It promises to be quite an acquisition as an early dessert Cherry. *C. H.*

PHORMIUM TENAX (p. 137)—I am surprised at the account of the flowering of the *Phormium*. Surely it has flowered in many places [yes, but not at Worthing]. Here I have had it in flower more than once, and one year I had good seed on it; but the last winter cut nearly all my plants to the ground. The one that stood the winter best was *P. Cookii*. *Rev. Canon Ellacombe, Bitton Vicarage.*

—This plant is perfectly hardy in the south-west of Scotland, even at some miles from the sea. It flowered here on several plants last year, one had twelve flower-stalks, the seed from which has germinated. There are no flowers this year. *Munches, Dalbeattie.*

—Supplementing the remarks on this subject at p. 137, I may say that *Phormium tenax* and several of its variegated forms have flowered in the large conservatory at the Pine-apple Nursery, Maida Vale, London, now in the hands of Messrs. Hooper & Co. [under glass]. At the present time in the rockery there, there is a fine spike of flowers and fruits on a specimen of *Vitch's* variegated form of this plant. In pots it is not an easy plant to flower, but planted out under glass it only requires to grow the plant to sufficient strength to get it to flower. *J. O'B.*

INDIA.

TEA AND COFFEE SUBSTITUTES.

I HAVE read with interest the series of notes on "Tea and Coffee Substitutes" that have appeared in your journal, and I might add to the information by

mentioning two plants which have been omitted from your list, but which are used in India. The first of these is the *Eugenia caryophylla*, used in the Mysore territory for the manufacture of tea by the natives. The tree resembles the Jambul (*E. jambolana*), and the young leaves are picked, allowed to wither, rolled and fired, as in the manufacture of black tea. The prepared leaf is then boiled when required for use, and the liquor, mixed with a little sugar, is taken as a beverage, and considered by some to be more pleasant than tea. Some leaves prepared in this manner were recently sent me for an opinion as to their properties if taken in large quantities. The leaves were found to contain small quantities of tannic and gallic acids and a volatile oil, but no stimulating constituent, as the alkaloid theine.

The other tree from which tea has been made on the Nilgiri Hills is the *Gordonia obtusa*. The leaves very much resemble those of the Tea, and like them contain a tannic acid and an alkaloid. In the case of young leaves manufactured into tea, it would be difficult, if not impossible, to distinguish between them and the genuine tea from the *Camellia theifera*. *D. Hooper, The Laboratory, Ootacamund.*

SOCIETIES.

SOUTHAMPTON.

SATURDAY AND MONDAY, August 1 and 3.—In some respects this exhibition was far ahead of any of its predecessors, notably in the miscellaneous group class, which showed a distinct advance. None of the exhibits in this section of the schedule showed any of that close packing of plants which is so objectionable and so often seen, but in its place there was a happy freedom displayed. There may have been a slight falling off in the quality of some of the specimen plants exhibited in the minor classes, but there still remained abundance in the more prominent ones to make a splendid exhibition even in that department.

Groups of Miscellaneous Plants, arranged for effect, to occupy a space of 120 square feet, brought out seven competitors, and as they were all arranged in the centre of one tent there was a good opportunity to examine them. Mr. E. Wills, florist, Winchester Road, Shirley, was an excellent 1st; this group was remarkable for that grace and freedom so much appreciated in groups of this character, not a plant was there but what could be seen. The groundwork was a mass of Maidenhair Fern, from which arose graceful Palms, Orchids, Crotons, and a quantity of *Francoa ramosa* which gave a lightness to the whole. 2nd, Mr. E. Carr, gr. to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, an admirable arrangement also, in which was displayed many choice Orchids.

Stove and Greenhouse Plants.—The principal class was that for twelve, half to be in bloom and the remainder foliage. Five competed. Mr. Jennings, gr. to W. Garton, Esq., Roselands, Woolston, Southampton, no doubt surprised himself in his maiden effort by beating that veteran, Mr. Cypher. In the collection was a magnificent plant of *Allamanda Hendersoni*, which had fully 300 expanded blooms; to this was awarded the Silver Medal offered by the proprietors of the *Gardeners' Magazine* for the most meritorious exhibit in the whole show; a very fine *Stephanotis floribunda*, a good *Croton angustifolius*, and a huge *Latania borbonica* were his chief plants. Mr. Cypher, Cheltenham, was 2nd, he having an exceedingly fine *Phænocoma prolifera Barnesii*, *Allamanda grandiflora*, and *Ixora Pilgrimii*.

Ten specimens, open to gardeners only.—Mr. Blandford, gr. to Messrs. Haselfoot, Moor Hill, Bitterne, was awarded 1st honours, for a capital lot; and Mr. J. Amys, gr. to the Hon. Mrs. Elliot Yorke, Hamble Cliff, Netley, a close 2nd.

Mr. Cypher succeeded in securing the 1st in the open class for six specimens.

For six miscellaneous plants, gardeners only, Mr. Cuney was 1st.

Stove and Greenhouse Ferns were numerous staged, and in first-rate condition. Mr. Peel took leading honours, Mr. Jennings 2nd.

Orchids.—Two nice collections were staged, and being arranged on a base of small Ferns, had an attractive appearance. To Mr. Blandford premier honours went; Mr. Can 2nd.

Tuberous Begonias.—These, both double and single-flowered, were staged in large numbers, and in some

cases of exceptionally good quality. For six, Mr. H. Beny, gr. to the Rev. — Shirley, Southwick, was 1st, with a magnificent lot. Mr. Innes 1st for four.

Colcas.—Mr. Busby, gr. to F. Willan, Esq., Thornhill Park, Bitterne, was the most successful in a strong competition.

Celosias.—Mr. West, gr. to R. Wigram, Esq., Northlands, Salisbury, had much the best.

Zonal Pelargoniums.—Mr. G. Windebank, Bevois Town.

Table Plants.—Mr. J. C. Waite, gr. to Col. the Hon. — Talbot, Glenhurst, Esher, Surrey, the best in a very strong class, followed by Mr. Wills.

Cut Flowers were a prominent part of the exhibition. The premier award for twenty-four Roses went to Mr. Rumsey, Waltham Abbey, who had medium-sized fresh blooms; and Messrs. Perkins & Sons, Coventry, were 2nd. For twelve blooms, Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was distinctly ahead of others, with a fine level lot; and Mr. W. Clements, Ford, Salisbury, was 2nd.

Hardy herbaceous flowers made a bright and pleasing display. Mr. M. Prichard, Southbourne Nursery, Christchurch, easily won in the twelve varieties' class, being followed by Mr. J. Evans, gr. to Lady Louisa Ashburton, Melchet Court, Romsey.

For twelve bunches of cut flowers, Mr. Evans was 1st with a good lot, in which some choice Orchids were to be seen; Mr. Wills 2nd, with good specimens of stove and greenhouse kinds. Carnations were a strong feature. For twelve, not less than six varieties, Mr. J. J. Keen, Bevois Town, Southampton, was the most successful. Mr. Clements 1st for twelve, six to be Picotees, all of yellow ground.

Table decorations were on the whole pleasing. For a table 8 feet by 4 feet, Miss Hobby, Padwell Road, Southampton, was an easy winner; Miss Ladhams, Shirley, had the best epergne decoration; Messrs. Perkins, the best bridal and ball bouquets; Messrs. Drover, nurserymen, Fareham, coming 2nd for these.

Fruit was remarkable in quantity and for its general good quality, no less than eight lots of six dishes (Pines excluded) being staged. Mr. Ingfield, gr. to Sir J. Kelk, Bart., Tedworth, Marlborough, was an easy 1st, having dishes of perfectly finished Black Hamburgh Grapes, a fine Tedworth Favourite Melon, the Warburton Admirable Peach, and Lord Napier Nectarine. For three of bunches Black Grapes, Mr. Ingfield was 1st, with excellent Black Hamburghs: Mr. T. Hall, gr. to S. Montagu, Esq., South Stoneham, was 2nd, with Madresfield Court. Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Fareham, took the highest award for three bunches of White Grapes with fine samples of Muscat of Alexandria; Mr. J. Budd, gr. to F. Dalgety, Esq., Lockerly Hall, Romsey, being placed 2nd, with the same variety. For two bunches of Black Grapes Mr. Iggulden led with Madresfield Court. Mr. J. Evans was 1st for two bunches of white, and Mr. Ingfield for single bunch of black. Mr. Ingfield also had premier bunch of White Grapes, Mr. N. Molyneux 2nd, both showing Muscat of Alexandria. The best dish of Peaches in a strong competition for the best dish were Royal George, shown by Mr. Garner, gr. to Mrs. Bradyll, Amberwood, Christchurch; Mr. Ingfield being 2nd. Mr. Ward with Pineapple in the class for one dish of Nectarines. Mr. Iggulden amongst thirteen others had the best green-fleshed Melon, having a good fruit of Eastnor Castle. Mr. Evans was 1st with Read's Hybrid in the scarlet class. Mr. Wilkins, gr. to Lady Theodora Guest, Imwood House, Henstridge, was 2nd. The best hardy fruit in six varieties was staged by Mr. West—a capital lot.

Vegetables formed a strong feature of the show, and for ten varieties Mr. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury, was distinctly ahead with excellent produce in every respect. In the class for eight dishes, Mr. Ingfield was 1st.

First-class Certificates were awarded to Messrs. Keynes, Williams & Co., for Cactus Dahlias Dr. Masters, Lady Pembroke, and Baron Schroder.

NEWBURY HORTICULTURAL.

The forty-third annual exhibition of this Society took place on the 3rd inst. in the picturesque grounds of Shaw Avenue, and was in every respect a success, showing an improvement in the various departments upon previous efforts.

Plants.—Model conservatory arrangements—a commendable innovation.—In this class each com-

petitor was allowed to stage on an area of 12 feet by 8 feet plants usually found in conservatories, taste in arrangement, and quality of plants exhibited being taken into consideration. This proved to be a pretty and effective feature of the show. 1st prize, a most beautiful lot, Mr. W. Young, gr. to Captain Winthrop, Barton Court.

Six stove or greenhouse plants in bloom, 1st, Mr. F. J. Mould, Pewsey. Six variegated foliage plants, 1st, Mr. Camp.

For dinner-table plants Mr. C. Ross took the leading position with finely coloured examples. Bouquets were well and successfully shown by Mr. G. Phippen, Victoria Nursery, Reading, who was also assigned the premier place for twenty-four bunches of cut flowers for artistic arrangement. Cut Roses were shown in admirable condition by Mr. G. Cooling, Bath. For a collection of exotic Ferns, Mr. Howard, gr. to Mrs. Myers, was placed 1st with fine plants. Some finely-coloured plants in a collection of *Coleus* gained first honours for Mr. Surman, gr. to M. H. Best, Esq., Donnington Grove.

Fruit was shown somewhat largely and in excellent condition, the principal prize winners in this section being Messrs. Howard, Maher, Marsh, Ward, Lye, Ross, Young, Norris, and Surman.

The special prizes offered by Messrs. Sutton & Sons for a collection of vegetables brought out a remarkably keen competition, the produce shown being of high quality throughout. 1st, Mr. Young. A good competition also resulted for the prizes offered by Messrs. James Carter & Co. 1st, Mr. Young; 2nd, Mr. Lye.

Mr. C. Fidler's prizes for a collection of vegetables also produced a very satisfactory display, the prizes being secured by Messrs. Lye and Freeman. The cottagers' display of vegetables was an interesting and satisfactory one.

The show was admirably managed by Mr. H. S. Hanington, the Hon. Secretary.

FROME FLORAL AND HORTICULTURAL.

THIS Society held its eighth annual show on Bank Holiday, in fine weather. It was well attended, and was in every respect a success, as it deserved to be the Hon. Secretary, Mr. T. H. Woodland, and the committee being indefatigable. Mr. Iggulden, gr. to the Earl of Coik, Marston House, Frome, was the chief exhibitor, taking 1st for a group of plants, 1st for a collection of six kinds of fruit, 1st for hardy fruit, for Melons, cut flowers, and Peaches. Mr. W. Pratt, gr. to the Marquis of Bath, Longleat, staged a grand and large group of miscellaneous plants, capitally arranged; and for six splendid bunches of Muscat of Alexandria and Black Hamburgh Grapes, three bunches of each, but not for competition, they were far ahead of all other exhibits. Major Clarke showed fine hothouse Ferns. Mr. W. Stungel, gr. to — Bailey, Esq., Frome, also showed well in several classes; and Mr. Pym, Trowbridge, staged a good dish of Pine-apple Nectarine, beating Mr. W. Iggulden's fine fruits of Lord Napier variety.

WARWICK AMATEUR AND COTTAGERS' HORTICULTURAL.

THIS was the eleventh show held by the above Society, and it took place, as has been usual of late, in the beautiful grounds of Warwick Castle, whose gardens were thrown open to visitors. The entries were scarcely so numerous as last year, owing to the backwardness of the present season, but they reached nearly 1000, and the quality of the exhibits was remarkably good when it is remembered that only *bona fide* amateurs and cottagers can compete, gardeners being excluded; and that the main bulk of the produce comes out of allotment gardens, for which prizes are also offered. Then there is an industrial department also, one tent being filled with contributions of needlework from women and children, examples of domestic cookery, and also of skill by men. A great deal of interest is thus created; and the industrial department is one that it is advisable should be taken up by other societies. Contributions, not for competition, were numerous, and greatly assisted in making a display. Thus, Mr. F. Perkins, nurseryman, Regent Street, Leamington, had an excellent group of decorative flowering and foliaged plants, including some charming bouquets—one composed wholly of Princess Beatrice Sweet Pea being much admired. From Chester Messrs. Dick-

son, Limited, and from Oxford Messrs. G. Prince and J. Mattock sent excellent Roses; Messrs. Webb & Sons, seedsmen, Stourbridge, a representative collection of Peas; Mr. T. West, florist, Warwick, a collection of plants; Mr. Kitley, Castle Gardens, some plants of Maidenhair Ferns; Mr. C. Wilson, Saltisford Gardens, an excellent collection of forced and other fruits, plants, &c.; Messrs. Hewitt & Co., nurserymen, Solihull, well arranged bunches of hardy flowers, also Begonias, Gaillardias, &c.; Mr. F. Horne, florist, Warwick, a group of flowers; Mr. J. Marsh, Priory Nursery, Cucumbers, &c., all of which received certificates of merit.

During the afternoon the Earl and Countess of Warwick visited the show, and her ladyship afterwards distributed the prizes.

This exhibition is always a well managed one. Mr. Councillor J. Lloyd Evans is an excellent secretary and manager, and he is well supported by a good working committee.

NORTHAMPTON HORTICULTURAL.

AUGUST 3 & 4.—Although not favoured with the finest of weather, this show must be pronounced a great success, a quantity of good produce being brought together, whilst the attendance was all that could be desired.

Plants.—In the large plant classes there was not a great competition: the 1st prize for twelve plants, half of which were to be in flower and the rest of fine foliage, was awarded in a keen competition to Mr. Cypher, nurseryman, Cheltenham, whose flowering plants won for him his position; these consisted of two grand examples of *Ixoras*, *I. Pilgrimii* and *I. Williamsii*, both of extra size and full of flower; *Bougainvillea glabra*, very fine and fresh; *Kalosanthes coccinea superba*, highly coloured; *Allamanda Obelsoni* in excellent condition; and a good but rather small plant of *Erica Parmentieri rosea*. The foliage plants consisted, amongst others, of a fine plant of *Cordyline indivisa*, *Cycas revoluta*, an extra large *Latania borbonica*, and *Croton Sunset*, richly coloured. Mr. Finch, gr. to J. Marriot, Esq., Coventry, was a close 2nd, his foliage plants on the whole being finer than his opponents. This consisted of a huge plant in fine health of *Cycas circinalis*, two excellent *Kentias*, *Croton Martefontainensis*, in splendid colour and condition, with a good plant of *C. angustifolius*; these, with the seldom-seen *Dion edule*, completed the foliage part; three *Ericas* (*E. Irbyana* and *E. jasmiflora alba*, both being in fresh condition, but the third one was stale), a medium *Allamanda*, a small but fresh *Ixora Williamsii*, and a finely-grown plant of *Phenacoma prolifera Barnesii*, made up the collection. In a smaller class for six plants, Mr. Sainsbury, gr. to C. Watkins, Esq., Wellingborough, was 1st in this collection with a grand plant of *Zamia Vroomii*. In the class for six Ferns two excellent exhibits were presented, the 1st prize going to those shown by Mr. Holland, gr. to W. Jeffrey, Esq., Northampton; these consisted of two good *Adiantums*, two large *Gymnogrammas*, *Gleichenia Mendeli*, and another; the 2nd prize lot, from Mr. Sainsbury, consisted chiefly of *Adiantums* in good condition, with a capital plant of *Davallia fijiensis*. The groups were an improvement upon those of last year; to these a tent was specially devoted, being arranged through the centre, and facing both ways. Mr. Cypher was 1st in the open class with a very bright but light arrangement, slightly marred by four bushy *Crotons*. Had these latter been plants with one stem only, the effect would have been much better. Mr. Holland put up an excellent group in the amateurs' class, and was awarded the 1st prize. This was a worthy production, not suffering by comparison with Mr. Cypher's. Two other good groups were staged in this tent. Table plants were best shown by Mr. Treasler, gr. to M. Mansfield, Esq., M.P., Northampton, and Mr. Martin, gr. to C. W. East, Esq., Kettering, in the order named.

Cut Flowers.—These, although not numerous, were of excellent merit, more particularly the stove and greenhouse collections. The best of these in the open class was a handsome box full of choice things from Mr. Finch, consisting of Orchids, *Ixoras*, *Dipladenias*, and *Lapagerias*. In the amateurs' class Mr. Kightley, gr. to Sir H. Wake, Bt., Courteen Hall, was 1st with a very fresh collection. Mr. Cole, gr. to Earl Spencer, Althorpe, was in each instance a good 2nd. Mr. Kightley also took 1st for hardy herbaceous flowers, with such useful things as *Montbretias*, *Liliums*, and *Alstroemerias*, &c. For twenty-four cut Roses Messrs. John Perkins & Son, Market Square, Northampton, were 1st with very

fresh blooms, the best being Alfred Colomb, A. K. Williams, Dupuy Jamin, Her Majesty, Pride of Waltham, and Brightness of Chesnut, all of which had withstood the wet weather well. Messrs. Thos. Perkins & Sons, Drapery, Northampton, being an excellent 2nd. For twelve Tea-scented the competition was good, the 1st prize going to Rev. Ed. King, D.D., Gayton Rectory, being closely followed by Rev. W. H. Jackson, Bedford; the first-named exhibitor also being awarded the 1st prize for twelve of any varieties with excellent blooms. Amongst the Tea-scented, Madame Bravy, Edith Giffard, Francisca Krüger, Marie van Houtte, and Comtesse de Nadailac were noteworthy.

Table Decorations.—Mr. Cypher showed remarkably well, and was worthily awarded the 1st prize in the open class. The amateurs' class was also well filled, and showed marked improvement. Mr. Cole had the best bouquets, and won easily in each class.

Fruit.—For collections, Mr. Edmonds, gr. to the Duke of St. Albans, Bestwood Park, was 1st, with fruit of excellent quality, showing Madresfield Court and Muscat of Alexandria Grapes, a fresh Queen Pine, Elruge Nectarine, and Figs. Mr. Cole came a good 2nd, with well-finished Grapes, Peaches and Nectarines. The last named being also 1st in another class, limited to the county, taking, likewise, the Royal Horticultural Society's Silver Medal in addition to the 1st prize. Mr. Cole was the principal exhibitor in the other fruit classes, taking several 1st prizes, but was beaten, however, for Black Grapes by Mr. Miller, gr. to Sir E. G. Loder, Bart., Whittlebury, who had three grand bunches of Black Hamburgh, with extra fine well finished berries.

Vegetables.—Several classes were provided for these, in collections and individually. By far the best collection of twelve kinds came from Mr. Eyle, gr. to Lord Wantage, Overstone, which it would have been hard to beat, the best dishes being those of Major Clarke's Celery, Lockie's Perfection Cucumber, Pragnell's Exhibition Beet, White Naples Onion, Snowball Turnip, Canadian Wonder Beans, and Dwarf Champion Tomatoes. For Messrs. Sutton & Sons' prizes the best collection came from Mr. Kightley, and for those of Messrs. Thos. Perkins & Sons from Mr. Hopewell, Berry Wood, and Mr. Douglas, Wootton. The amateurs' and cottagers' classes were well filled.

SCOTTISH HORTICULTURAL ASSOCIATION.

This Society held its ordinary monthly meeting at 5, St. Andrew's Square, on the 4th inst., Mr. James Greive, Vice-President, in the chair. A paper by Mr. Melville, Dunrobin Castle Gardens, was read by the Secretary, Mr. R. Laird. The subject was "The Grouping of Hardy Plants in the Flower Garden." The paper was suggestive rather than exhaustive, leaving ample room for discussion, which was fully taken advantage of by the members present. Exhibits were of unusual interest. A very large collection of cut blooms of Roses was shown by Mr. Henderson, of Clermiston Gardens. Two 3-year old plants of Niphetos, showing extraordinary size and vigour of foliage, were shown by the same gardener; they were two of a batch of cuttings struck in August in a cold frame, and were brought up for the purpose of showing that this variety of Rose succeeds as well, if not better, on its own roots than on any other kind of stock. Mr. M. Todd, florist, exhibited flowers of Carnation White Grenadin, raised from seed. The flowers were neat, pure in colour, and in size like the well-known scarlet Grenadin. Mr. Todd, in the course of some remarks on the variety, said it began flowering with him in the beginning of July, and gave promise of continuing till the end of autumn. He regarded the variety as invaluable to gardeners and florists who had large quantities of cut flowers to produce. Mr. MacMillan, Trinity College, Edinburgh, exhibited seventeen varieties of Chrysanthemums as follows:—Sunflower, Stansted White, Edwin Molyneux, Etoile de Lyon, Mons. Freeman, Boule d'Or, Chang, H. J. Jones, Sabine, Bouquet Fait, Venus, Freney (2), Mons. H. Jacotot, Roi de Precoces, Madame des Grange, both yellow and white. Some seedling Clematis of considerable interest was exhibited by Mr. Morris of Trinity. They were the result of crosses between *C. montana* and *C. indivisa* and others, and were all meritorious; but one large white, like, but superior to, *C. Henryi*, was much admired. Messrs. Dicksons & Co. exhibited a very superior strain of Balsam, and Mr. Cranston,

Waverley House, Edinburgh, sent samples of a yellow Tomato, equal in size, and similar in form, to the "old red." It was named "The Waverley."

INSECT PESTS.

PHYLLOXERA.

The liquid bisulphide of carbon is, as is now well known, a successful remedy for the Phylloxera. We copy from the *Illustration Horticole* a statement by M. Caseneuve to the effect that, if mixed with equal quantities of vaseline, the rapidity of evaporation is checked, and that the production of Grapes is increased threefold, while the Phylloxera is destroyed. The bisulphide is rather a dangerous substance to handle, owing to the inflammability of its vapour, so that we should be glad to hear further details how the mixture above-mentioned can be made.

VARIORUM.

CACAO, COFFEE, AND COCA IN PERU.

From a recently-published report by Consal Mansfield on the Agricultural Condition of Peru, dated Lima, October 8, 1890, we learn something of the value of the above-named plants in that country.

Of Cacao, or Cocoa, as we usually call it (*Theobroma Cacao*), we are told that up to a recent date its cultivation in Peru seems to have been confined more especially to the Transandine slopes, in the province of Convencion, in the department of Cusco; not, however, in sufficient quantities to supply the markets of the southern departments of the Republic. The Cacao produced is of a superior quality, and could compete advantageously with the best descriptions raised at Soconusco and in Venezuela. The excellence of the bean is, however, rather due to the geological and topographical conditions of the Valley of Santa Ana than to the efforts of the cultivators. The Cacao goes by the name of Casco Cacao, but owing to the cost of production, distance from the sea, and deficiency of transport, cannot compete in price with that imported from Ecuador; consequently, the production and consumption does not extend beyond what is requisite for the local demand. Cacao of good quality has also always been raised in the province of Jaén, in the department of Cajamarca, and the cultivation of the plant extends towards the seaboard in the north of the department of Piura; but upon so limited a scale as scarcely to amount to more than an experiment.

With a more extended development, Cacao could easily be produced in sufficient quantities for the internal consumption of Peru, displacing export from abroad, and, perhaps, even competing in foreign markets, a future for the industry which appears more than probable, when the contemplated irrigation scheme in the department of Piura shall have been carried into effect.

With regard to Coffee, it is said no better quality is produced in the world than in Peru; more especially that raised at Chauchamayo, in the department of Janin, and in the province of Carabaya, in the department of Puno. The production amply suffices for the internal consumption, notwithstanding that the latter has much increased during the last few years. Small quantities, during several years, have been exported to Europe, which, on account of the quality, found favour in the market, and fetched good prices, with the result that foreigners are beginning to settle in Peru as Coffee planters upon quite a considerable scale. The coast valleys, as well as those in the Transandine districts, furnish a favourable field for the plantations. The amount of the present production is not estimated. In 1888, 27,107 kilos. were exported from Callao, and 25,650 kilos. were imported from Guayaquil through the same port.

The Coca plant (*Erythroxylon Coca*) so well known for its anæsthetic and medicinal properties, is indigenous in Peru, and is largely consumed by

the Indians in the Republic, where it is cultivated for exportation. No other country, indeed, competes with Peru in the quantity exported. Two establishments exist for preparing the leaf—one in Lima, and one in Callao. During the last year, 1730 kilos. of Cocaine were exported to Europe, principally for Germany. No statistical data are forthcoming concerning the amount of production, but in the year 1888, 28,660 kilos. were exported through the port of Callao.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS. Above (+) or below (−) the Mean for the week ending August 1.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	ACCUMULATED.				Inch.	Ins.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the Week.		
	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.	Below 42° difference from Mean since Jan. 4, 1891.					More (+) or less (−) than Mean for Week.	No. of Rainy Days since Jan. 4, 1891.
	Day-deg.	Day-deg.	Day-deg.	Day-deg.						
1	2	78	0	+ 152	+ 79	2	+ 130	25.2	21	29
2	2	90	0	− 27	+ 101	4	− 90	10.0	33	32
3	1	91	0	− 99	+ 95	1	+ 99	19.7	30	30
4	6	92	0	− 102	+ 128	6	+ 101	12.4	32	32
5	4	93	0	− 79	+ 116	9	aver 94	13.6	27	32
6	5	106	0	− 97	+ 149	6	+ 89	13.0	35	37
7	2	97	0	+ 85	+ 46	7	− 95	15.5	15	31
8	3	95	0	+ 11	+ 35	1	− 89	13.3	31	31
9	2	105	0	− 58	+ 118	3	− 94	16.6	42	39
10	2	99	0	+ 43	+ 29	1	− 111	13.1	21	32
11	2	100	0	+ 39	+ 31	5	− 100	15.4	22	35
12	3	118	0	− 9	+ 40	2	− 96	13.3	50	48

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 1, is furnished from the Meteorological Office:—

"The weather has remained in a very changeable and inclement state, especially over England, where frequent thunderstorms have occurred, with heavy local falls of rain.

"The temperature has been below the mean in all districts. In the western and northern parts of the Kingdom the deficit has not amounted to more than 2° or 3°, but in 'England, S.' it has been as much as 5°, while in 'England, E.' it has reached 6°. The highest readings were observed on July 26, excepting in the north of Scotland, where they occurred during the latter part of the week; in Ireland, the north of Scotland, and the north-west of England the thermometer did not reach 70°, but in the Channel Islands it rose to 75°, while in 'England, S.' and 'England, S.W.' it reached 78°. During the middle of the week the maximum readings were below 60° over a considerable portion of the United Kingdom. The lowest readings occurred mainly between the 28th and 30th, when the thermometer fell to between 40° and 45° in nearly all parts of Great Britain. In Ireland, however, the absolute minima varied between 46° and 48°, while in the Channel Islands the thermometer did not fall below 51°.

"The rainfall has been considerably more than the mean in the eastern and southern parts of England, and slightly more in 'Scotland, N.' and 'England, N.E.', but less in all other districts, excepting the Midland Counties, where the normal was just reached.

"The bright sunshine has been less than the mean in all districts, excepting 'Scotland, W.' and 'England, S.W.'...

MARKETS.

COVENT GARDEN, August 6.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday...

MARKET well supplied, and quotations the same as last week. James Webber, Wholesale Apple Market.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table with columns for flower types (Arum Lilies, Asters, Carnations, etc.) and prices in s.d. and s.s.d. units.

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing various plants in pots (Aralia Sieboldii, Aspidistra, etc.) and their prices.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table listing various fruits (Apples, Cherries, Currants, etc.) and their prices.

NOTE.—Bananas and Apricots differ in price so greatly, according to quality and quantity on sale...

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing various vegetables (Artichokes, Beans, Beet, Carrots, etc.) and their retail prices.

POTATOS.—Very heavy supplies coming to hand, consequently prices very much lower—65s. to 80s. Beauties and Roses; 95s. to 110s. Kidneys. J. B. Thomas.

HAY.

Averages.—The following are the averages of the prices paid at the various metropolitan markets during the past week...

SEEDS.

LONDON, Aug. 5. — Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., report today's market of quite a holiday character...

FRUITS AND VEGETABLES.

BOROUGH: Aug. 1.—Quotations:—Cabbages, 2s. to 3s. per tally; Turnips, 2s. to 3s. per dozen bunches...

SPITALFIELDS: Aug. 4.—Quotations:—Vegetable Marrows, 1s. 6d. to 2s. per dozen; Cabbages, 2s. to 4s. 6d. per tally; Scarlet Beans, 5s. 6d. to 6s. 6d. per bushel...

STRATFORD: August 5.—Cabbages, 3s. to 4s. 6d. per tally; Carrots, household, 1s. 6d. to 2s. 6d. per dozen bunches...

POTATOS.

BOROUGH: Aug. 4.—Quotations:—Jerseys, 100s. to 120s.; Cherbours, 70s. to 100s.; Kent and Essex Regents, 8 s. to 90s.;

STRATFORD: Aug 5.—Quotations:—Kidneys, 80s. to 100s.; Hebrons, 60s. to 80s.; white do., 80s. to 95s.;

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Aug. 1, and for the corresponding period last year:—1891, Wheat, 38s. 9d.;

NOTICES TO CORRESPONDENTS.

BLACK GRAPES NEVER COLOURING WELL: Acor. This may be due in your case to something in the soil that is inimical to the Vines...

FUNGUS IN PASTURE: F. Townsend. Nylaria polymorpha, Grev., common, growing from wood decaying in the ground.—M. Cooke.

GROOM-GARDENER: H. A. A. Such a practitioner might reasonably be allowed to exhibit in a Cottage Garden Society's show...

NAMES OF FRUITS: E. S. The Myrobalan Plum, used for stocks; the fruit is also good for preserving.

NAMES OF PLANTS: Blue Bell. Campanula latifolia.—J. P. & S. Centaurea suaveolens, Sweet Sultan.—G. L. 1, Cephalotaxia pedunculata var. fastigiata...

insect puncture.—W. G. Calceolaria pinnata.—G. S. 1, Veratrum nigrum; 2, Campanula trachelium multiplex; 3, Pteris longifolia; 4, Chelone (Pentstemon) barbatus...

NIPHĒTOS: Rose. The name is probably from the Greek Niphotos, signifying drifted snow; the e in the second syllable should be pronounced short.

NYMPHĒA ALBA: F. L. Judging from your statement, we are decidedly of opinion that the judges were in error in disqualifying the bouquet on the grounds that the common white Water Lily is not a native...

SCORCHED FOLIAGE OF VINES. B. The trellis to which the Vines are secured being too close to the glass, it would be advisable to stretch some wide-meshed hexagon netting over that part of the roof...

SITUATION IN AMERICA: Young Gardener. You should get a situation in a nursery in Canada or the States. There is not much chance of your hearing of a vacancy on this side of the Atlantic...

THE TREATMENT OF ORCHIDS: C. B. I. Odontoglossum Edwardii does best in the cold-house all the year round. Winter, 50° to 55° by day, 45° at night; summer, 60° to 70° by day, 55° at night...

TUBEROUS ROOTED BEGONIAS: A. M. The cuttings root the most certainly when a thin heel of the flesh of the tuber is taken off with them...

TWIN CUCUMBERS: W. H. L. Not so rare as you suppose. It is a freak of nature, induced usually by the excessive vigour of the plants...

CATALOGUES RECEIVED.

- BROWN & WILSON, Manchester—Dutch Bulbs. LITTLE & BALLANTYNE, Carlisle—Dutch Bulbs, Daffodils, &c. JAMES DICKSON & SONS, Hanover Street, Edinburgh—Hyacinths, &c.

- COMMUNICATIONS RECEIVED.—O. King.—Jas. F. Smith.—W. D.—L. C.—W. H.—G. H.—W. T. D.—Baron von Mueller, Melbourne.—A. O. W.—R. A. R.—W. H. P.—J. T. N.—T. M., Philadelphia.—Professor Wittmack, Berlin (many thanks).—S. T.—J. H. J.—C. E.—A. H. B.—W. M.—G. F.—C. Dennis.—J. B.—J. O'B.—H. M.—P. Jeffs.—W. S.—A. D.—P. L. S.—J. B. W.—H. Evershed.—H. G.—W. D.—G. B. & Co.—John Colebrook.—Henry Perkins. PHOTOGRAPHS RECEIVED with thanks from M. D.—W. S.—W. H.

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12 ft. by 3 ft. ... 3 2 0 | 12 ft. by 4 ft. ... 3 15 0

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NEW SPAN-ROOF GARDEN FRAME.
CASH PRICES. CARRIAGE PAID.
4 ft. by 6 ft. ... £2 14 0 | 12 ft. by 6 ft. ... £5 14 0
8 ft. by 6 ft. ... 4 4 0 | 16 ft. by 6 ft. ... 7 4 0

No. 74.
THREE-QUARTER SPAN GARDEN FRAME.
CASH PRICES, CARRIAGE PAID.
4 ft. by 6 ft. ... £2 14 0 | 12 ft. by 6 ft. ... £5 17 0
8 ft. by 6 ft. ... 4 5 6 | 16 ft. by 6 ft. ... 7 8 6

No. 75.
MELON AND CUCUMBER FRAME.
CASH PRICES. CARRIAGE PAID.
4 ft. by 6 ft. ... £2 0 0 | 12 ft. by 6 ft. ... £4 3 0
8 ft. by 6 ft. ... 3 0 0 | 16 ft. by 6 ft. ... 5 6 0

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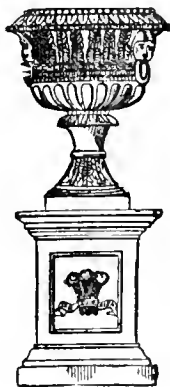
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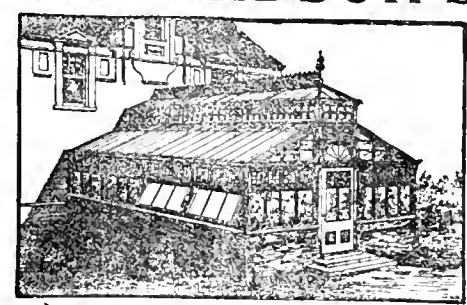
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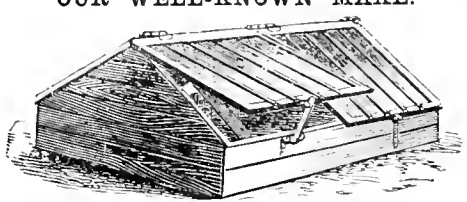
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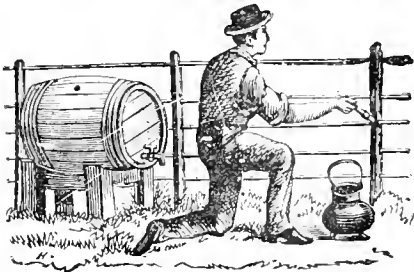
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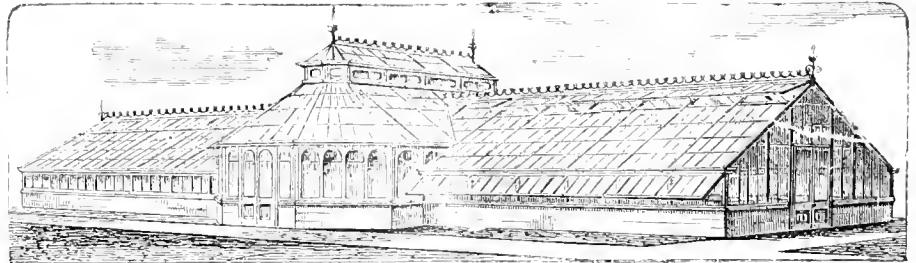
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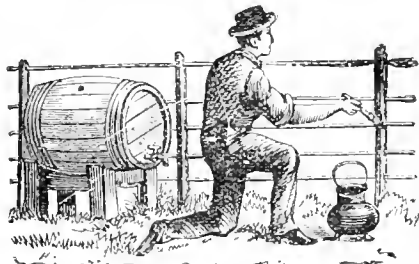
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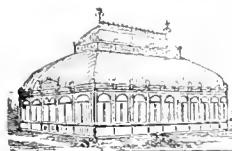
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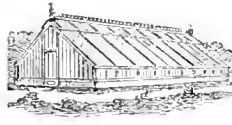
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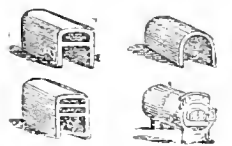
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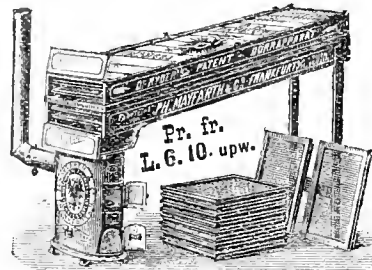
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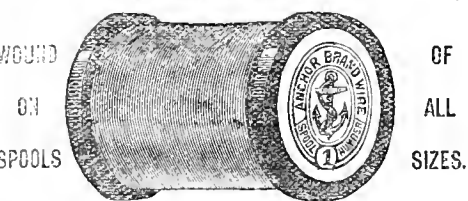


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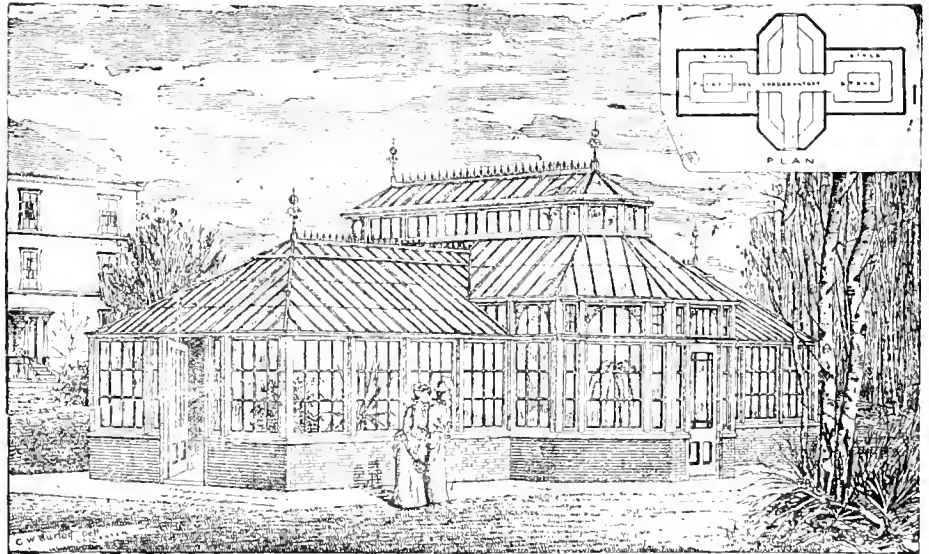
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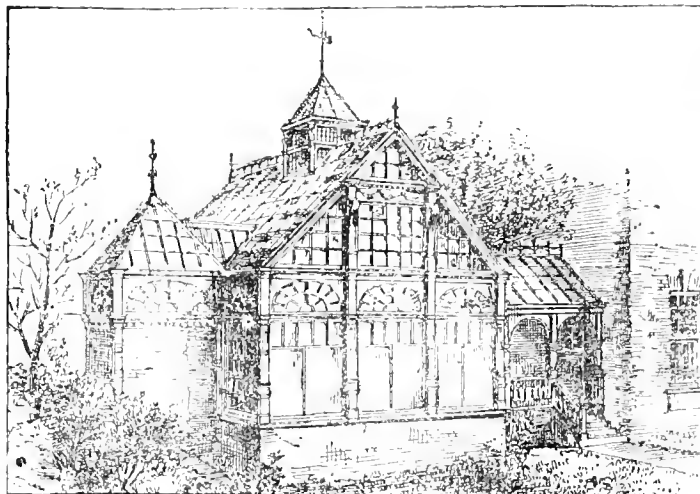
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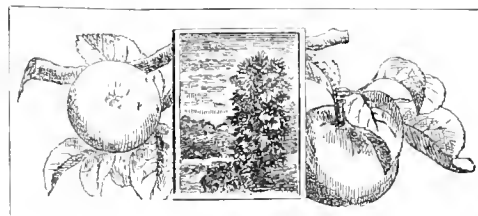
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THE Gardeners' Chronicle.

SATURDAY, AUGUST 15, 1891.

WELBECK ABBEY GARDENS.

A VERY pleasant way to approach these gardens, which ought to be seen by everyone interested in scientific horticulture, is from Creswell station. About midway the road winds through Creswell Crags, a ravine cut in the magnesian limestone by the river Wollen. The steep sides of the cliff are overhung by Ivy, and venturous trees find a lodgment even in the most inaccessible parts. The caves here, locally yept Robin Hood's Cave and Mother Grundy's Parlour, have yielded the bones of man mingled with those of the mammoth and the arctic fox, thus proving the existence of man in the Neolithic age. Reaching the brow of the hill above the ravine, the range of the extensive buildings at Welbeck comes into view, just like a little town.

It is simply impossible to give an adequate idea of the immense garden under Mr. Horton's charge, unless one proceeds on a definite method. We will take as centre of operations his cottage, which faces south. On either side is a large conservatory, and then comes a range of lean-to vineries 80 yards 2 feet in length. In front of all this are several acres of cultivated ground, and then another wall, by the side of which is planted, on arched iron-work, an arcade of fruit trees—Pears on one side and Apples on the other—24½ yards long, which, when in flower, offer a most dazzling spectacle. On the north side of this wall, Currants and Gooseberries, which hang very late, are planted, and the south is taken up by a Peach-case the whole length of the wall. Then comes another wide piece of ground, chiefly laid out in squares, and devoted to bush trees, bounded on the other side by a third long wall, on the south side of which is an Apricot-case 385 yards long. In front of this is a long strip of ground, formerly laid out for Strawberries, the beds being arranged so that they could be covered by glass, but now devoted to other purposes. The garden on the north side is bounded by the famous tan gallop, which is covered in with glass, and between it and the main range of vineries are arranged all the pits, frames, propagating-houses, and span-roofed greenhouses for cut-flowers. Below the main range of vineries are two ranges of span-roofed plant-houses, each 98 yards long, and each divided into three parts; and another wall the same length covered by glass. Enormous as these figures are, they comprise only a part of the glass on the estate, as my readers will see later on.

We will start our walk through the houses from the conservatory on the left as you enter Mr. Horton's cottage. This is a tropical house, the floor of which has been lowered in order that the Bananas may be planted-out and grow to their full height. They fruit abundantly, as do the Guava and the Cape Gooseberry. I did not envy Mr. Horton the trouble and the sleepless

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nights he must have had during the late severe winter in keeping the frost out of such a lofty house. The range of vineries, which comes next, could not well be improved upon, either as regards heating or ventilation, the arrangement for the latter being very easy to manipulate. Young Vines are being gradually put in to replace the old, as the houses are so numerous, this can be done a house at a time. All the roots are inside, and the borders are formed by degrees, as the roots come up to the soil already put in position. A very rich turfy loam is procured from the park, in which the young Vines are making really astonishing growth. The borders are 3 feet deep, resting on a rubble composed of 2 feet of whole bricks. The soil is so good that not much artificial feeding is required, which perhaps is the reason why Madresfield Court finishes so well. Besides the usual sorts, White and Black Tokay and Barbarossa are extensively grown, and the late variety Welbeck Seedling, however it may do elsewhere, certainly is a great success in its native habitat. It is of good flavour, keeps well, and is much thinner in the skin than Lady Downe's. The foliage also is strikingly distinct from any other Grape. Although there is so much ground, nothing is wasted at Welbeck. The back wall, and the border in front of it, are utilised for growing Tomatos and salad plants. The popular variety of Tomato seems to be Ham Green.

It is convenient now to take the two long ranges of plant-houses. They are fully 30 feet wide, which allows for a large stage in the middle. The first house was filled with flowers for cutting. Carnations are grown by the thousand, and there were also any number of Gladiolus The Bride, Richardias, Liliun Harrisii, and Freesias, F. Leichtlinii being the most grown. The next house was a stove, in which was a magnificent collection of Crotons Queen Victoria; C. angustifolius and Prince of Wales were represented by very large-sized plants. Striking varieties are undulatus, which has hardly two leaves alike; interruptus aureus, and majesticus. There was also a large number of plants of a nice size for decorative purposes. Dracaenas, Dieffenbachias, and Screw Pines, which are allowed to acquire a lovely pink flush by being put close to the glass, are also extensively grown. The most extraordinary plant in the house is, however, an Anthurium Veitchii. It can hardly be matched for size anywhere in England; many of the leaves were more than a yard long. The third house is intermediate, and is devoted to Coleus, Acalyphas, Gardenias, planted out Cliveias, Amaryllis, including Her Majesty and a number of seedlings; Clerodendron fallax, and Palms for decoration, such as Cocos Weddelliana and Geonoma gracilis. On the roof in the stove was Allamanda Hendersoni, and in the intermediate-house a Bougainvillea. Every plant was so free from insects, that I could not refrain from asking the insecticide used; it is Bentley's. The first house in the corresponding range was a forcing vegetable house, in which the French Beans were planted out, and not grown in pots. At one end was a mass of white Lilac, which had been in flower since Christmas, the shrubs having been lifted from the shrubbery, and brought there and planted out. Strawberries, of which 10,000 are forced, were also fruiting profusely; the old varieties Keen's and La Grosse Sucrée being the most used. The next house was devoted to Figs, the entire roof being thickly covered with the Brown Turkey. At the time of my visit, in the middle of April, they were gathering ripe fruit in any quantity; plenty of heat and

moisture seems to be the secret. The last house of this fine range is an early orchard-house. Peaches and Nectarines in pots were covered with blossom; the trees are fifteen years old, but seem still in their prime. Mr. Horton, who was for many years with Mr. Rivers, thoroughly understands the treatment of trees in pots, and those who doubt the value of the system should see for themselves the trees here. Sea Eagle, Magdala, Crimson Galande, Humboldt, and Stanwick Elruge are largely grown. Cherries, which were planted out, were also set for an astonishing crop; the two sorts most in vogue being Early Rivers and Black Tartarian.

The long glass covering to the wall is divided also into three parts. The first has sliding lights in front, and is devoted to Plums; the trees are trained on the back wall, and also grown in pots in a line down the front. There is room for this, as the glass comes out seven feet from the wall. These trees also are in splendid health, and give every promise of an enormous yield. Green Gage, Jefferson, and Angelina Burdett are the favourite varieties. As the whole range is heated by a flow and return pipe—and there are two flows and two returns in the back wall, which is hollow—the next division is devoted to pot-Vines. Welbeck has always had a reputation for these, and the show for the present year quite sustains the reputation. In fact, it seemed rather cruel to crop small Vines so heavily, but as the roots were appearing in all directions through the fibrous sods placed round the top of the pots, the plants were evidently well able to bear their burdens. The remaining division is devoted to Pears, those in pots, owing to the fresh soil constantly added, being extremely healthy, notwithstanding the fact that they are oldish trees. Conseiller à la Cour, Marie Louise d'Ueche, Doyenné du Comice, Louise Bonne, Ohvier de Serres, and Mons. Benoist, are about the best for cultivating in pots.

The fruit trees trained on wires on the walls are quite a lesson in the different styles of training. Any tree that shows any sign of failing is instantly replaced, so that there is not a poor tree amongst them. Many Pears do well here that have not always a good character elsewhere, such as Beurré Bachelier, Gansel's Bergamot, Souvenir du Congrès, and Josephine de Malines; indeed, Mr. Horton thinks that success with Pears is a matter of soil rather than climate.

The centre walk, and the walk in front of the main range of vineries, are broadly girt with herbaceous beds.

Mulberries, curiously enough, are grown on walls; one very old tree is loaded every year with fruit—the younger trees do not bear so freely. The soil is a red loam on a gravel subsoil, and there are 15 acres enclosed. The Apricot-case, the huge length of which has already been given, is glazed on Rendle's system, and contains a border under the glass in front, where are grown early dwarf Peas, such as American Wonder, Potatos, French Beans, early Cauliflowers, Carrots, Parsley, and salad plants, thus enabling the supply of vegetables to be kept up all the year independent of seasons. Since it is probably the longest wall of Apricots in the world, room has been found to plant a great many of the French varieties, such as Luizet and Pêche de Nancy, but none of them equal the old Moorpark. The Royal drops its fruit under glass as much as it does on the open wall. Every tree was in robust health, and the crop promised to be enormous, as I was informed it has been every year hitherto. As the lights in front are removable, the wood gets thoroughly hardened

in the autumn. The Peach-case, which is only 120 yards shorter, was a most gorgeous vista of pink, for there is a line of pot trees all down as well as trees on the back wall; these trees are also in the best of health. Waterloo is the earliest Peach, and is succeeded by Alexander, both of which varieties together with Hale's Early, and the splendid late variety Desse Tardive are largely grown. Numbers of trees of Calville Blanche Apple also find a place. It was interesting to notice how distinct the flowers of the different varieties were.

We now come to the ranges of glass on the right hand side as you approach Mr. Horton's house, which although they contain equal features of interest, space will only allow to be described briefly. The main range on this side exactly corresponds to the one described before, with the exception that most of the houses are devoted to Muscats. The conservatory, however, is a cool one, and is devoted to greenhouse Rhododendrons and Azaleas. On the roof is a luxuriant Fortune's yellow Rose. Built on to the back of the wall are a long Mushroom-house and the house for keeping Grapes. The stand in the centre of the latter is so punctured that the bottles face alternately to either side. The ventilation and heating are so perfectly under control, that Grapes will keep sound to the middle of April. Between this range and the tan gallop are the Pine-pits, Cucumber and Melon-houses, long lines of frames, and numerous span-roofs for growing flowers for cutting purposes. The Pines are still affected with the scale, as they have been at Welbeck ever since Speechley's time. The favourite Melon for early work is Albert Victor. Orchids are very little grown; but on the other hand, Carnations are a great feature. There were hundreds of strong plants of Souvenir de la Malmaison (the pink variety), Miss Joliffe Improved, Rising Sun, Mrs. Henwood, and Grace Wilder.

Nearly all the winter crops were destroyed by the frost, but there were some splendid rows of Gilbert's Late Queen Broccoli, which bids fair to be a valuable late sort.

I have only one criticism to make with regard to this well-devised garden, and that is, there is no house devoted to aquatics. In a place of this size it is a great omission, for there is no house so lovely when well managed; the one at Eaton Hall might well be taken as a model. Mr. Horton must be, indeed, Argus-eyed to keep his charge in the high state of cultivation and pattern neatness he does. Without good foremen, it would be impossible, and it will be the wish of anyone who has seen the gardens under his guidance, that these he may never lack. *Fagabond.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CORADINEII ×.

A HYBRID, as is supposed, between *O. Lindleyanum* and *crispum*, with both of which it grows in the neighbourhood of Bogota. It is very variable, but flowers freely in the winter under the same treatment as *O. crispum*. The flower-segments are pale primrose-yellow, with broad spots of a rich reddish-brown, and the lip is of a delicate hue, with a long rich brown blotch in the centre. *Reichenbachia*, ser. 2, t. 21.

O. WILCKEANUM VAR. *ROTHSCHILDIANUM* ×.

A natural hybrid between *O. crispum* and *luteo-purpureum*, being found in the same localities as the two parents, and having intermediate characters, now more resembling the one, in other instances the other parent. The segments are like those of a fine

variety of *O. crispum*, with rich chocolate-crimson blotches on a primrose-coloured ground. Culture like that of *crispum*. *Reichenbachia*, ser. 2, t. 22.

CYPRIPEDIUM LAWRENCEANUM VAR. HYEANUM.

The history of this fine variety is given in the *Gardeners' Chronicle* for May 8, 1886. This is an albino form, or, rather, a green-flowered variety of *C. Lawrenceanum*, a discovery of Burbidge's in North Borneo. *Reichenbachia*, t. 23.

CATLEYA INTERMEDIA PUNCTATISSIMA.

A Brazilian species, very variable in character. That represented at plate 24 of the second series of the *Reichenbachia* is one of the most distinct. The sepals and petals are broad; the lip also is of good shape, and all are profusely dotted with rose on a lighter ground.

CATASETUM BUNGEROTHII ?

The female of this handsome *Catasetum* has appeared on several occasions. First, with Messrs. Linden, of Brussels, in December, 1888, when it was figured in these columns (April 13, 1889, p. 461, fig. 83), then with Messrs. F. Sander & Co., of St. Albans; R. B. White, Esq., of Arddarroch; and Messrs. Backhouse & Son, of York, successively (see *Gardeners' Chronicle*, October 26, 1889, p. 466; May 17, 1890, p. 618; *Reichenbachia*, ser. 1, vol. ii., p. 91, t. 90; *C. pileatum*, Rehb. f.). Within the last few days it has been received from Mr. J. Woolford, gr. to A. Palmer, Esq., East Thorpe, Reading, and from Messrs. F. Sander & Co., of St. Albans. The latter specimen is very interesting. It is a four-flowered raceme, though the lowermost flower has been removed. The next one is a female, and the uppermost a male, both quite perfect, but the intervening flower is somewhat intermediate. It is, for the most part, a female one, both in shape and colour, but one side of the lip shows a slight approach to the male form, while the short stout column, quite like the female in this respect, is rostrate, as in the male, and has a rudimentary antenna on one side, and a more developed one, of two lines long, on the other. The difference in colour in the two sexes is as remarkable as is that in form. The male is pure white, except the base of the spur, which is deep yellow; but the female has greenish-white segments and column, and the lip wholly deep yellow inside, and pale dull yellow outside, with light greenish nerves. *R. A. R.*

CATLEYA GIGAS.

An exceptional form of this handsome *Catleya* has lately flowered with E. Gotto, Esq., The Logs, Hampstead Heath. From tip to tip of the petals it measures fully 9 inches, while the front lobe of the lip and the petals are each over $2\frac{3}{4}$ inches in diameter. It is exceptionally fine, both form and colour being equally perfect.

ODONTOGLOSSUM PURUM.

A plant of this rare *Reichenbachian* species has just flowered with Messrs. F. Sander & Co., at St. Albans. It much resembles *O. Lindleyanum*, both in form and colour, though it may be easily distinguished by its possessing a four-lobed crest, not a two-lobed one; also by the longer, more chirose column-wings. A peculiarity, which has before been observed is, that some flowers have a purple blotch on the lip in front of the crest, while in others, on the same raceme, this part is wholly white. It is also near *O. Wallisii*, though specifically distinct.

CYMBIDIUM LOWIANUM VAR. CONCOLOR.

This is a very striking variety, in which every trace of red has vanished from the flower, which thus becomes of an almost uniform light greenish-yellow, and forms a strong contrast with the ordinary form. An excellent photograph shows that it possesses no other peculiarity. It is a fine plant with four racemes, which has appeared with Mr. Charles Eastwood, Lane House Nursery, Luddenden, Manchester. A single flower also came from the Liverpool Horticultural Company without any note of its origin. *R. A. R.*

CYMBIDIUMS.

These thrive well in the temperature of the *Catleya* house, and even a little less warmth will suit them well, especially during the winter. In the summer months they enjoy an abundance of water, both to their roots and over-head in sprinklings from the syringe, but they should not be exposed to the mid-day sun when the foliage is wet, as this will cause the leaves to become spotted; in this condition they do not present a nice appearance. In the winter much less moisture is necessary, but the plants must not be allowed to become dry at any season. They are very large-rooted plants, and therefore require larger pots than the majority of Orchids, but this need not be carried to excess. The soil we find to suit these plants best is about two parts good turfy loam, one part fibrous peat, and one part good leaf-mould, adding a little sharp sand and some medium-sized nodules of charcoal to help in keeping the soil in a porous condition. *Orchid Album*, vol. ix., part 108.

CATLEYA DOWIANA AUREA.

This requires to be kept dry and cool immediately after its growth is completed, and it should not be allowed to stand in strong heat until growth starts again, as we recently observed had been the case with one grower of these plants, which had half made growths in the middle of winter. Such growths never can flower, and by such treatment the plant gets the character of being a shy bloomer, but this it does not deserve if it is carefully handled in the autumn, and the winter growth is avoided. It enjoys an abundance of sun and light, and to obtain this we grow it in a basket, so that it may be hung up near the roof-glass, the basket being thoroughly well drained. The soil should be good fibrous peat and a little chopped sphagnum moss, mixing a few medium-sized nodules of charcoal with the soil during potting for the purpose of keeping it open; during the growing season it is a plant which likes a liberal supply of water, hence the necessity of providing ample drainage, for although *Catleyas* like water, they cannot long survive or keep in a healthy condition if it remains in a stagnant state about their roots. *Orchid Album*, vol. ix., part 108.

HARDY FRUIT CULTURE IN SOUTH WALES.*

THE climate and the soil and situation in many places in South Wales are admirably adapted for the cultivation of all kinds of hardy fruits. With these natural advantages, and the increasing demand for fruits of all kinds in our large towns and populous mining districts, it is surprising that some of our intelligent and energetic market gardeners have not long since made fruit growing a specialty on a large scale in the neighbourhood of Cardiff. After eighteen years' experience of growing fruit in this district, I am thoroughly convinced that as fine Apples, Pears, and Plums, and other kinds can be grown here in the vales of Glamorgan, and in many other places all over the country, as those produced in the best fruit-growing counties in England, if proper care be taken in selecting and cultivating the most suitable varieties.

There are few orchards in Glamorgan, and what few I have seen are (and have been) much neglected. To judge from the stunted sickly appearance of some of the trees, and the bushy mass of branches in others, nothing has been done to them in the way of pruning and manuring the soil since they were planted. The planting, no doubt, in the majority of cases, was crude, and consisted simply of digging a hole without any previous preparation of the soil, putting the roots into it and covering them with earth, after which the tree was left to its own resources—nothing being done to it afterwards.

To be successful in the cultivation of fruits of any kind the best sites should be chosen, and the ground thoroughly prepared, when necessary, by draining,

trenching, digging, and manuring before planting the trees. In orchards, Apple and Pear trees should not be less than 30 feet apart each way, and none but the best trees—worked on the free stock—with straight clean stems of 6 feet before branching, and not more than three years old from the time of budding, should be planted.

I may say here that I remember an intelligent farmer telling me in all earnestness, that his father was a successful cultivator of the Apple in this district, that he grafted his own trees, and those he grafted on the Grey Willow stock—which I take to be *Salix caprea*—succeeded the best on his heavy soil—the lias clay. It is needless for me to tell the members of the British Fruit Growers' Association that I have had no experience of that stock! Plants that have stood in nursery rows for years, and have been pruned repeatedly to keep their heads within bounds, seldom make good trees. When lifted they have scarcely any fibrous roots, and after replanting become stunted, and fail to make much growth for several years. On the other hand, young vigorous trees, planted at the age mentioned, start into growth at once, and soon become large and fruitful. In planting, the varieties must be kept by themselves as much as possible for the sake of uniformity of growth, and convenience in gathering and storing the fruit. Make the pit large enough to hold the roots without being cramped, and a strong stake driven into it to tie the tree to. After which place the tree close to the stake, spread the roots out on all sides before filling in the soil, which should be made firm, but care must be taken not to plant it deeper than it was when growing in the nursery row. When planted secure the tree to the stake, prune it, and mulch the surface with manure to exclude air and to keep down evaporation. All that is required now is to protect it from cattle, sheep, and horses. Barbed wire guards I find the best; they are cheap, durable, and answer the purpose better than any other kind of protection that I know. The principal culture of orchard trees is during the first few years when they are young. It consists of pruning and cutting out all weak useless branches and those that cross each other, keeping the trees clean and free of insect pests, and top-dressing the ground with good manure to keep them in a vigorous and fruitful state.

FRUIT GARDENS.

The cultivation in the fruit garden is different from that of an orchard. Apple and Pear trees may be planted here a little closer, say, from 18 to 20 feet apart, and trained in pyramidal form, and the ground worked and cropped between them with Gooseberry, Raspberry, Currant, and Strawberries, or vegetable crops, until they have filled their allotted space. I have recommended that the orchard trees be three years old from the time of budding; but for planting in the garden I prefer maidens or plants of one year's growth from the bud to those of four or five years' growth. They soon establish themselves, and grow faster than older trees, and can be trained to the form desired much easier. I repeat that too much care and attention cannot be taken in planting, and none but the very best trees should be planted to ensure successful cultivation.

There are several fine Apple and Pear trees in the Castle gardens here, both on walls and in the open quarters of the garden, which are much admired by gardeners and others visiting the place. They were all planted, pruned, and trained under my supervision, and perhaps I could not do better than describe the mode adopted in growing and training them. To avoid repetition, I may say that most of the trees were planted when maidens of one year's growth. The Pear trees on the walls are planted at the distance of 21 feet apart, and trained in fan-shape with a leader up the centre. When planting them they were kept away 6 inches from the bottom of the wall to allow room for the stem to swell; the roots were spread out carefully and covered, the ground made firm, and mulched with manure afterwards. The leaders were then cut back to within 18 inches from the

* A paper read by Mr. A. Pettigrew, at the Cardiff Conference of the British Fruit Growers' Association, August 12, 1891.

ground, and fastened loosely to the wall. In the following year they produced from three to five shoots each, which were carefully but loosely nailed to the wall as required during the growing season, and allowed to grow their full length without being stopped. At pruning time the centre shoot of each tree was cut back to within 18 or 20 inches from where it started, according to the strength of the growth, and to two or four remaining shoots, as the case might be, were nailed to the wall their full length; the two lower shoots horizontally, one on each side of the main stem, and the others at a slight angle up the wall. From this time on, until the trees had occupied their full space, they were examined regularly every spring shortly after starting into growth, and all the superfluous buds rubbed off the leading shoots, and a few of the buds near the ends of the permanent branches picked off to strengthen the terminal bud. I never shorten the points of the permanent branches until they have grown their full length, unless they have met with an accident, or the wood happens not to be sufficiently ripe to remain. The breastwood is taken off two or three times during the season, but I never pinch and stop the growths during the summer, as recommended by some writers.

To build up young trees and furnish the wall with them in the shortest time possible, I have stopped the leading shoot of the current year's growth after it had grown about 2 feet in length, which caused it to send out lateral branches. These in good seasons ripened well, and a year's growth was gained by adopting this method; but I do not recommend it in a general way, as the success mainly depends on the seasons being good to ripen the wood thoroughly.

PRUNING.

The trees are pruned as soon after the leaves fall as possible, and the roots mulched with enough stable litter for a breadth of 3 feet from the bottom of the wall, after which the branches are syringed with a wineglassful of petroleum to a gallon of water. All is thoroughly mixed by the syringe, continually churning it up during the operation. The petroleum thus applied, kills scale, and all insects it comes in contact with, and it gives the bark of the trees a smooth and healthy appearance. This finished, the branches are then secured in their proper position for the year.

PYRAMIDAL TREES.

These, though differently trained, are built up much in the same way as wall trees. When newly planted they are cut down to within 18 inches from the ground, and the following year they produce from three to five shoots each. One of the strongest of these is selected for a leader, which ultimately becomes the stem of the tree, and all the others are rubbed off except three of the best placed, which are retained to form the base and framework of the tree. The shoots are allowed to finish the season's growth without being stopped in any way. When they are being pruned in the autumn the leading shoot is left from 18 inches to 2 feet long, according to the strength and ripeness of the wood (but as the trees get older the leading shoots may be left even longer), and the side branches a little shorter. This system is practised year after year, cutting out all cross and superfluous wood, and training and furnishing the tree with well-arranged branches until it has filled its space, after which, the growth is spurred in the usual way close to the permanent wood every season to form fruit buds. I do not believe that stopping and pinching the young shoots during summer adds to the productiveness of the tree; besides, it is impossible in large fruit gardens, where there is a great number of trees, to find time to do so.

I do not advise root-pruning to be practised except in cases where the roots have penetrated a cold wet subsoil, in which the trees produce strong rank unfruitful wood. When such is the case, and the trees are young, they should be lifted entirely, the strong roots cut back, and the fibrous roots spread

out near the surface; but when the trees are large it is advisable to dig a trench 3 or 4 feet distant from the trunk all round, cut back the strong roots, and add some good soil to encourage fibrous roots to grow near the surface.

The Apple is more liable to the attacks of insect pests and disease than the Pear. The canker is the most difficult to deal with, and some varieties are more subject to it than others. When planted in low damp situations, the trees get covered with moss and lichen. They are also subject to the attacks of American blight, and this, in my opinion, is one of the principal causes of canker; but there is a great diversity of opinion about this. When once a tree is attacked with canker it is almost impossible to cure it, and the sooner it is grubbed out and a new one planted in its place the better. I think it is a mistake to lose time and valuable space with a sickly tree from any cause whatever, when trees can be bought so cheaply from our nurserymen. Moss and lichen can be destroyed by dusting the trees with newly-slacked lime on damp mornings during the winter months, and American blight by scrubbing the bark of the affected trees with a hard brush and soap-suds, and by frequent syringings of petroleum mixed in water as previously described.

Of Apples there are more than forty varieties, and of Pears about the same, grown in the Castle gardens. But the following twenty-four of each are amongst the most useful, both culinary and dessert. Apple: Devonshire Quarrenden, Irish Peach, Lord Suffield, Keswick Codlin, Lord Grosvenor, Pott's Seedling, Bleuheim Pippin, Beauty of Hants, Cox's Orange Pippin, Ecklinville, Emperor Alexander, Gloria Mundi, Golden Noble, Hawthoruden, Annie Elizabeth, Sturmer Pippin, Alfriston, Beauty of Kent, Dumelow's Seedling (Wellington), Lane's Prince Albert, Rymer, Warner's King, and Rushock Pearmain.

Of Pears, the following twenty-four varieties are grown successfully, both on walls and pyramidal trees in the open. Duchesse d'Angoulême, Jargonelle, Summer Bergamot, Beurré Magnifique, Beurré d'Amanlis, Beurré Diel, Beurré Rauce, Beurré d'Esperen, Durondeau, Louise Bouve of Jersey, Pit-maston Duchesse, Uvedale's St. Germain, Thompson's Brown Beurré, General Todtleben, Doyenné du Comice, Glou Morçeau, Winter Nelis, Marie Louise, Beurré Bosc, Beurré Clairgeau, Williams' Bon Chrétien, Vicar of Winkfield, and Gansel's Bergamot.

PLUMS.

The trees in the open quarters here are treated much in the same way as the pyramidal Apple and Pear trees, and those on the walls are pruned and trained the same as the Pear trees in that position. The Plum, like most of the stone fruits, is subject to the attacks of aphides, red-spider, honeydew, mildew, gum, and canker. The aphides generally show themselves first on the points of the young vigorous shoots, which they cause to curl. As soon as they are observed, the points of the shoots should be nipped off, to keep them from spreading over the tree, except in the case of the main shoots of wall trees, when the affected leaves should be picked off to preserve them entire. Syringing the trees with soap-suds and tobacco-water keeps them in check, but once the trees are badly affected—as they are in some places this season—it is not easy to get rid of them by any means. Honeydew is the effect of aphides' attacks. Red-spider is difficult to master in dry seasons, and some districts are worse for it than others. All kinds of deciduous trees are subject to it in warm close confined situations like the Castle gardens here. If once they get a strong footing, it is almost impossible to eradicate them by any means. Mildew may be destroyed by sulphur in some form or other. Gum and canker cause the leaves of the affected trees to silver, and the branches to die back. When such is the case, I know of no remedy except taking the trees out and planting young ones in their place.

There are many varieties of Plums to choose from, culinary and dessert. The following are what are

chiefly grown in the Castle gardens: Victoria, Denniston's Superb, Nectarine, Prince Engelhart, Bryanstone Gage, Transparent Gage, Kirk's Purple, and Coe's Golden Drop.

I have thus endeavoured, in as plain and practical way as I could, to deal with the subject I was invited to speak upon; and I trust the remarks I have offered may have the effect of causing more attention to be paid to the culture of our hardy fruits.

THE GENUS BROWALLIA.

THE great botanist Linnæus had among his numerous acquaintances a certain friend named Johu Browall, who was very humble in his relations with Linnæus, and, having adopted his new sexual system of botany, wrote an article against Siegesbeck defending that system. Linnæus, in acknowledgment of his friend's services, dedicated to him a genus of a single species, naming it *Browallia demissa*. Shortly afterwards Browall, having been made Bishop of Abo, assumed the pomp and dignity of a great magnate, and Linnæus having discovered a second species of this genus named it *B. exaltata*.

This excited the wrath of Browall, and he proceeded to write pamphlets against Linnæus, denouncing him in the most severe language. Later on, Linnæus discovered a third species differing slightly from the original outline of the genus, which he named *alienata*. The two men were never afterwards reconciled to each other, and thus we have preserved in the nomenclature of this genus a historical incident to which future generations of botanists will look back with considerable interest.

Speaking from a botanist's point of view, it is a genus of half-hardy shrubs or herbs belonging to the order Scrophulariaceæ, and bearing white or blue and in one species orange flowers. The corolla is salver form in general outline, but becomes twisted through the contortion of the upper end of the peduncle. &c.

SOME CAUCASIAN MAPLES.*

1. ACER VOLXEMI.—Some years ago, as we have already had occasion to mention, M. J. Van Volxem, of Brussels, was good enough to send us three young trees raised from seed, that he had himself gathered in the Caucasus.

One, the form that we named *A. Volxemi*, a second received under the same number as the preceding, and a third quite distinct from either, and labelled *velutinum*. The one we named *Volxemi* grew very rapidly, and made splendid foliage, of a silvery hue on the under surface. As the materials for a full examination were wanting in the first instance, it was natural that some considered it only a form of *A. pseudo-platanus*, others of *A. insigne*. For our own part, we have had the tree under (or rather over!) our eyes almost every day for fourteen years, and, moreover, we have had the advantage of communicating with various authorities on Caucasian trees, and especially with M. Boissier, who forwarded us type specimens of his *insigne* and other species for comparison. This year the tree in question flowered in the collection of M. Van Volxem. The flowers, as will be seen from our illustration at p. 189, settle the question that it is no form of *pseudo-platanus*, in spite of M. Wesmæel's opinion to the contrary in the recently-published *Mémoires de la Société Royale de Botanique de Belgique*, t. 29, 1891, p. 36, an opinion formed, of course, before he could have seen the flowers.

* ACER VOLXEMI, Mast., in *Gard. Chron.*, 1877, p. 72, f. 10; fol. et fruct.; 1891, p. 189, fol. et flores. Nicholson in *Gard. Chron.*, 1881, p. 10.

? = *A. Trautvetteri*, Medwedjeffs, Mitt. et in Kaukasischen landwirthschaftlichen Gesellschaft, heft iv. and v., Tiflis, 1880 (ex Wittmack in *Garten Flora*, 1891, p. 263). Pax. in *Just. Bot. Jahrb.*, 1880, 2, p. 80.

A. INSIGNE, Boissier et Buhse Aufz., p. 46. Boissier, *Flora, Orientalis*, 1, 18, p. 947; *Garten Flora*, 1881, p. 120; Pax. Mon. *Acer in Engler Bot. Jahrb.*, vii., 195. Wesmæel-excl. synonym. β *velutinum*, Boissier, *Flora subitans velutino tomentosa*. = *A. velutinum*, Boissier, *Diagnoses* [nec hort.], ser. 1, vi., p. 28, Wesmæel (see fig. 24).

It is possible that *A. Volxemi* is a form of *insigne*; all that we can say upon that point is, that it was not recognised as *insigne* by Boissier himself nor by other botanists who have collected in the Caucasus. Neither does it agree with any specimen of *insigne* that we have seen in the London herbaria. With great deference to our colleagues who hold different

2. *A. TRAUTVETTERI*.

This was described from the Caucasus by the Russian botanist, Medwedjeffs, in 1880. From the remarks and figures on this species by M. Wolf of St. Petersburg, Dr. Dieck and Professor Wittmack, in the *Garten Flora*, 1891, p. 263, we were led to the conclusion that this might be the same as our *A.*

is quite different from *insigne*, and moreover that our *A. insigne velutinum* was rightly so named.

3. *ACER INSIGNE* VAR. *VELUTINUM*.

The next Maple of which we have to speak was received from M. Van Volxem, under the same label as *A. Volxemii*. It was obvious from the first that



FIG. 24.—A BARDY CAUCASIAN MAPLE: *ACER INSIGNE*, VAR. *VELUTINUM*. LEAVES DOWNY ON THE UNDER-SURFACE FLOWER; IMMATURE AND MATURE SEED-VESSEL.

views, we nevertheless retain our opinion as to the specific distinctness of Van Volxem's Maple. For avenue planting, or where hardihood, rapid growth, and noble foliage are desiderata, we advise a trial of this tree; with us it is growing in garden soil overlying thick clay, and grows so rapidly that as our space is very limited it has to be headed back every year. On the sand at Kew it does not thrive so well.

Volxemi. To settle this point, we applied to Professor Wittmack, the Editor of the *Garten Flora*, who kindly sent leaves of our *Volxemi* and of *A. insigne velutinum* to Dr. Dieck, who travelled in the Caucasus last autumn, and saw both trees in their native country. We are now in possession of Dr. Dieck's reply, which is to the effect that our *Volxemi* is probably the same as *A. Trautvetteri*, and that it

it was quite different from that, being of much slower growth, with smaller foliage, slightly downy on the under surface. Our own impression originally was that it was a form of pseudo-platanus, but last year and the year before it flowered, and its affinity to *A. insigne* was then at once revealed. This year it has flowered again more freely, and the young inflorescence is figured at fig. 24, together with a

ripe fruit from Caucasian specimens. This tree, planted at the same time in the same garden as Volxem's Maple, has attained a goodly size, but it has never required heading down, and might, when not in flower, readily be taken for a variety of the common Sycamore. On comparing it with Boissier's specimens communicated by that eminent botanist, and on consultation with Dr. Dieck, and also with Dr. Stapf, now at Kew, and who is familiar with the plant in the Caucasus, there is no doubt remaining that the tree is *A. insigne* var. *velutinum* of Boissier. Mr. Nicholson also kindly sends us specimens of ordinary *insigne* as received from M. Max Leichtlin from Turkestan.

4. ACER SP.? (= *A. INSIGNE*, *Bot. Mag.*, nec BOISSIER).

The third tree sent by Mr. Van Volxem, under the name *velutinum*, is altogether different from either of the preceding. It flowered soon after planting, and repeated the process annually till killed. Its prominent characteristic, from a horticultural point of view, lies in the brilliancy of its crimson bud-scales. With us it was always more or less spring-tender, and during one of the recent severe winters, our tree declined the unequal contest, and succumbed. This is the species figured in the *Botanical Magazine* as *A. insigne*. We suspect, however, some displacement of labels, for the name *velutinum*, under which we originally received this from M. Van Volxem, and also other specimens through the good offices of Mr. Nicholson, from MM. Simon Louis Frères, of Metz, applies more properly to the variety of *insigne* previously mentioned. What the *Bot. Mag.* *insigne* may be, we do not at present venture to say. We incline to the belief that it is a new species, but, in any case, it is certainly not the *insigne* of Boissier. *M. T. M.*

KEW NOTES.

SADRAUA SPECTABILIS.—An example of this fine tropical shrub is now in flower in the T-range at Kew. It was received from the Royal Botanical Gardens of Brussels under the name of *S. macrophylla*, and it was figured in Regel's *Gartenflora*, t. 534, under this name. It has handsome foliage, nearly a foot long, lanceolate-obovate, serrate, and dark green. The flowers, which are fragrant, and not unlike those of the Tea plant, but a little smaller, are borne in large branched panicles from the axils of the leaves near the end of the shoots. There is a figure of this species in the *Botanical Magazine*, t. 3982, made from a plant "raised by Mr. Knight, of the Exotic Nursery, King's Road, Chelsea, from seeds imported from the Republic of Bolivia in 1838. . . Its beauty is of long duration, and we scarcely ever saw any stove plant more truly elegant and graceful."

Aristolochia grandiflora is now flowering freely in the Victoria House. Although introduced and figured in the *Botanical Magazine* nearly fifty years ago (t. 4368-9), this species had long ago disappeared from cultivation, until it was re-introduced three years ago by Mr. E. D. Sturtevant, of Bordertown, New Jersey, who kindly sent a plant of it to Kew. The leaves are large and heart-shaped, the stems climbing, and extending along the rafter to a length of about 15 feet. Already over thirty flower-buds are formed, and the first one has expanded this morning (August 8). In shape the flower is not unlike the popular little *A. elegans*, but the corolla measures 17 inches in width, by 5 feet in length, over 3 feet being narrowed into a long tail. The colour is rich cream-yellow, thickly mottled with black purple, and the mouth of the tube, which is nearly 5 inches across, is wholly black velvety-purple, the same colour surrounding the rim. In my opinion, this species is at least as interesting as *A. Goldiana*, and it is a much better garden plant.

Mariscus umbilensis, C. B. Clarke.—This is the correct name of the plant known in English gardens as *Cyperus natalensis*; so says Mr. Clarke, who is at present engaged in working up Cyperaceæ for the *Flora of India*, and to whom flowering and fruiting

specimens of this plant have lately been submitted. The old genus *Mariscus* was sunk in *Cyperus* both by Bentham and Boeckler; but Mr. Clarke proposes to reconstitute *Mariscus* as a good genus, but on totally different characters from those of the old *Mariscus*.

Mariscus umbilensis appears to be common in extra-tropical South Africa; it has been named *Cyperus umbilensis* by Boeck. in MS. in a collection from Umbilo, in the Walfisch Bay Territory. There is a true *Cyperus natalensis* of Hochst., which, however, differs very widely from the garden plant of that name, and which, so far as I know, is not in cultivation. *M. umbilensis* has long, arching, grass-like, glossy green foliage, and erect flower-heads, 2 to 4 feet high. The spiculae are deciduous, proving it to be a *Mariscus* and not a *Cyperus*, in which the spiculae are persistent, the glumes only being deciduous. It is a very elegant foliage plant, retaining its foliage for months in a healthy green state in an ordinary room. It may be raised in quantity from seeds, which are ripened in abundance by cultivated plants.

Crinum Moorei (white variety).—This is now in flower in the Bulb frame at Kew. It has flowers quite as large and substantial as the best forms of the pink-flowered type, and of the purest dazzling snow-white. Regel published a figure of it in *Gartenflora* under the name of *C. Schmidtii*. The Kew plant was received from Mr. Woodall of Scarborough, who had obtained it from someone as *C. giganteum*. It is a beautiful *Crinum*, and from the fact that it is almost hardy it is certain to find much favour. As a greenhouse *Crinum*, it has no equal among white-flowered kinds.

Lilium Henryi is much finer this year than it was last. It is an orange-coloured *L. speciosum* simply. *L. chloraster* is a much better garden Lily than its name would suggest; it is quite as large as *L. Brownii*, to which it bears a resemblance. Lily fanciers should see this plant now represented by strong flowering specimens in various parts of the garden. *W. W.*

Lysimachia paridiformis, sp. nov.—This interesting new species has just flowered in the Royal Gardens, Kew, the plants having been raised from seeds sent home by Dr. Henry from Central China. It was first described by Franchet in *Bull. Soc. Linn., Paris*, 1884, p. 433, along with its varieties *L. steodophylla* and *L. elliptica*, from specimens collected at Kweichan, Dr. Henry's specimens being found in Ichang and the immediate neighbourhood. It has also been found in Kwangtung by Mr. Ford, and his specimens differ in the stems being leafy instead of only scaly, as in the specimens now flowering at Kew, and which rightly appears to be Franchet's var. *elliptica*. In habit *L. paridiformis* closely resembles the broad-leaved variety of *Trientalis*, and also, as its name suggests, *Paris quadrifolia*. The stems are from 1 foot to 18 inches high, bright red, and with three or four pairs of opposite scales instead of leaves. The leaves proper, which are elliptic tapering to both ends, are in opposite pairs, but so close together as to suggest whorls of four, and hence the striking resemblance to the *Paris*. They are yellowish-green when young, but assume a deep purple tint as they become older. Flowers numerous, axillary, as large as those of *L. vulgaris*, bright yellow, with eye of a deeper tint. So far as we are acquainted with the habit and flowering of *L. paridiformis*, it will make a very useful rock plant; and as the plants withstood the late severe winter without any protection whatever, no fear need be felt about its not proving hardy anywhere in England.

L. Dahurica, which botanists say should rank as a variety of *L. vulgaris*, we also notice in flower in the Kew rockery. It is a very common plant from Dahuria to Mandshuria, and proves of much value as an autumn-flowering rock plant. To the gardener it differs widely from *L. vulgaris*—first, in its later flowering season; and second, and which is of much more importance, it does not produce runners like *L. vulgaris*, is more graceful in habit, and lasts longer in flower.

Erysimum Wahlbergii, which is now flowering

in the herbaceous grounds at Kew, is new to us, and promises to be of much interest and value as an early autumn-flowering plant. With the exception of *E. Perowskianum*, it is the handsomest of the taller-growing species, the flowers are as large as those of *E. ochroleucum*, and very showy. It grows 1½ to 2 feet in height, much branched, and with numerous lanceolate, entire, or slightly and irregularly toothed or notched leaves. The flowers are over half an inch in diameter, of a bright deep yellow, and when in full flower a very striking object.

Primula Poissoni, which flowered at Kew for the first time in England two months ago, is still flowering vigorously. This, without exception, is the most persistent flowering *Primula* we know, and as the seedlings have shown a great variety in the shade of purple, we may expect something very fine from the seedlings raised from the plants now in flower. It is found in marshy spots, and if grown in pots, they should be stood in saucers of water.

Crocus Sharojani is now in flower in the herbaceous grounds at Kew, and the novelty of an orange-flowered *Crocus* in early autumn is, indeed, pleasing. It varies in time of flowering in England, from the end of July until August 10 or 12; the past severe winter does not seem to have interfered with it much, as it shows as much vigour now as when first imported. It is a native of the Northwest Caucasus, and the mountains south of Trebizond, where it is found at an altitude of 7000 feet, and usually associated with *C. vallicola*, to which it is nearly allied, and which flowers three weeks later. *C. Sharojani* is one of the two species in which the previous year's leaves remain until the autumnal flowering time, and although apparently perfectly hardy, it is a species that resents lifting and storing more than any other species. The flowers, as already noted, are of a bright deep orange, and very showy. *D.*

DOES IT PAY TO GROW APPLES?

THIS was the heading of an interesting and instructive article in *Gardeners' Chronicle*, of May 2, 1891. The remarks therein are none too severe upon the shiftless fruit farmers of England or America, who take no pains, and spend no money to keep their fruit trees in a free-bearing condition. I felt strongly tempted to pen a few remarks on this important subject after the sudden change to ungenial weather on Whitsun eve. Our uncertain climate no one can fight against in any other way than by adopting good cultivation; and herein lies the difficulty with English farmers—they seem to have a rooted aversion to spade husbandry; they will scratch their fields lengthways and across, harrow the clods up and roll them down as often as you like, yet the best of it does not loosen the ground more than 8 or 9 inches deep, and the sole of the plough forms a compact hard floor at that depth. But good gardeners know well that this method of culture will not do for Apple trees; and when it comes to handling the spade, verily a shoemaker or a tailor can do better work than the average farm labourer—or, to use his new election name, journeyman farmer.

In these progressive times the fruit farmer is not, and ought not to be, dependent upon the old-fashioned broad-soled plough and horse labour to bring his land into good cultivation for fruit farming; if he does depend upon such, he is leaning upon a bruised reed. What is wanted in the ordinary cultivated farms is some sort of cultivator that will stir the soil to the depth of 15 or 18 inches, without bringing the subsoil to the surface, and thus breaking through the hard pan formed by centuries of ploughing—sometimes, as I have ascertained by measurement, less than 6 inches below the surface. For this purpose the steam cultivator is specially adapted; it crashes through the hardest clay subsoil with ease, stirring it up throughout to any required depth. The work may be done for about 15s. an acre, the farmer finding coals for the engine, which is not a

rious expense. The surface could then be well shaken up with the harrow, and a good foundation laid, upon which to plant the trees. I am no advocate for burying much manure in the ground, but all my experience goes to prove that stirring it up well to the depth of about 15 or 18 inches is absolutely necessary, if success for a good term of years is to be looked for. The right way to apply the manure is in the form of surface-dressings, put on in the winter and lightly forked in, in the early spring-time. In dry summers, a mulching of decayed manure is excellent to place over the roots, especially if the soil is light, and the sub-soil infertile.

Drainage is sometimes, but not always, necessary. In a garden of which I had charge for twenty years, we could grow excellent Apples, and it was not drained. Where my lot is now cast, drains 3 feet deep, with a good outfall, are quite as necessary a part of the culture of the trees as pruning and manuring.

As to the sort of trees to plant, the varieties best adapted for the district, and the distance they ought to be asunder, are matters which may well lead practical men to grave discussion.

I had recently a long drive through the Kentish orchards near Swanley (where, by the way, Mr. Cannell has been successfully urging the farmers to drop the plough and take to spade husbandry), and a few days ago I was shown over the large orchards planted at Sawbridgeworth by the Messrs. Rivers, father and son, and in Kent as well as in Hertfordshire, standard and half-standard trees have been planted at a distance of some 16 feet apart, the intervening spaces being planted with Currant, Raspberry, and Goose-berry bushes, or in some instances Strawberries. In each case the larger proportion of the trees were Plums. The Sawbridgeworth soil is better adapted for Plums than for Apples, it being a good holding loam with a chalky subsoil, excellent for growing Wheat. I am in favour of the bush form for Apples, and prefer the best culinary varieties, these being as a rule the best paying crop, generally bringing in the London markets 7s. or 8s. a bushel fresh gathered from the trees. Everyone wants Apples, and would like to have good fruit, if it can be obtained, and the demand for fruit of the best quality increases every year. Therefore, the old scrubby orchards do not pay, and as the quantity of good fruit sent into the market goes on increasing at a rapid rate, the money obtained for fruit of inferior quality will be less and less. The American writer says truly that "neglected orchards, like neglected children, are rarely a pleasant heritage." The word "never" might have been substituted for "rarely" in the case of orchards. Children have a power of will, which, if exerted, may raise them above the consequences of neglect and down-troddenness, but there is no volition in an Apple tree. This question has been much before the public lately, and there has been a moving amongst the dry bones, but it is not a new thing. Nearly a hundred years ago, Mr. Thomas Andrew Knight was concerned about the decay of the Apple orchards, but Knight and other leading cultivators did not hit upon the true cause of the decadence of the fruits, in which they were certainly intensely interested. One grand idea of Knight's, in which there is probably a little truth, and some superstition, was, that trees of a certain age tended to decay even in their young state. Referring to some of the popular Worcestershire varieties of Apples, he says:—"The Moil, and its successful rival the Redstreak, the Masts, and Golden Pippin, are in the last stage of decay, and the Scire and Fox-whelp are hastening rapidly after them;" and after a dissertation on experiments with the old sorts of Apples, he believed he was "justified in the conclusion that all plants of this species (the Apple), however propagated from the same stock, partake in some degree of the same life, and will attend the progress of that life in the habits of its youth, its maturity and decay," and thinks it necessary to add, "though they will not be any way affected by any incidental injuries, the parent tree may sustain after they are detached from

it." London thought Knight's doctrine contrary to the general analogy of plant life, and remarked that "Vines, Olives, &c., have been propagated by extension for ages, and are still, as far as can be ascertained, as vigorous as they were in the days of Noah or Pliny." Speechly, and other good gardeners of the time, blamed the climate, and supposed "that the return of genial seasons will restore to us, from old trees, as good fruit as heretofore." I nowhere find that the cultivation was supposed to be at fault. We know better now, and if the old gnarled trees, picturesque with lichens dangling from every branch, are anywhere retained, it can only be for their look of antiquity, as old-world curiosities, or for the study of the parasitic lichens, silvery, green, and gold, which are beautiful exceedingly to the students of these interesting plants.

The fact remains, and is sufficiently clear to those who will study the signs of the times, that for the production of a paying crop, the old trees must go. Plant young trees of the best varieties after the soil has been prepared by good cultivation, and on land that can be bought from £50 to £100 an acre. Apples will then pay, and give the cultivator much pleasure, as well as being a good investment for his money. *J. Douglas.*

CASTLE HILL, ENGLEFIELD GREEN.

This compact estate, the property of G. C. Raphael, Esq., is of fifty acres in extent, and mainly consists of gardens and pleasure grounds. It is embellished by noble trees, which tell of the site having been a garden for a great many years, although the old homestead and its occupiers have long since passed away. On the spot where that building stood, a massively-built modern house of the present owner now stands. From the verandah of the mansion, which is furnished all round with tall tree Ferns, placed at intervals of a few yards, and brightened by hanging-baskets of bright flowers, the eye lights upon an arch of single white Roses of great beauty, which is turned over the walk bordering the flower gardens. In front of the house are two lawns, divided by a piece of water ornamentally treated; further on is a stretch of garden, with another lake beyond. Here, at the edge of the water, are several giant *Taxodium distichum* of great beauty, the largest having a circumference of 12 feet round the trunk: the delicate green tint of their foliage, and their noble proportions, make them striking objects. On the other side are some very large Alder trees, and beyond a very large Tulip tree, which is an especially free-flowerer. Another object of beauty is a large spreading tree of the Lebanon Cedar, whose girth of bole at breast-height is 18 feet; and near it is a huge specimen of a Cedar, resembling the Lebanon in some particulars, but with finer foliage, of a bluish tint, something like that of *Cedrus atlantica*, but certainly not the same as any of the specimens of that species, which are planted near, and may be compared with it. The Firs at Castle Hill are also of great size and beauty, and about the grounds are large trees of things not generally found of any size in gardens, such as the *Gleditsia triacanthos*. Near the house are some very neat looking carpet beds, and beyond these a geometrical flower garden, the centre very effectively arranged with *Ficus elastica* in the middle, then variously tinted *Ricinus*, among which are clumps of *Phalaris arundinacea variegata*, or Gardener's Garters, and the whole broadly banded by dwarf-clipped Golden Yew. The radiating beds are chiefly of brilliant scarlet, pink or crimson *Pelargoniums*, each with an appropriate edging, and the whole forms an admirable combination. For a further supply of flowers there is the Rosery by the lower lake, and everywhere in convenient spots are borders and nooks of showy herbaceous perennials, judiciously planted, with a view to getting a show, even until the hard frosts come.

THE KITCHEN GARDENS are neat and well cropped, the fruits on the walls and in the orchard being good and

fairly plentiful, indeed much beyond the average this season. Among the Peas, Champion of England is stated to have produced marvellous crops of fine quality, and Veitch's Perfection is still the favourite in its class. Under a shady wall in the open garden is a bed of Watercress, growing simply in the garden border, after the manner so often spoken of by the late Mr. Shirley Hibberd, and which is said to be a very successful mode of keeping up an almost un-failing supply if properly carried out. The method is spoken highly of at Castle Hill, and it might certainly be practised with advantage in many other gardens. Everywhere in these gardens, both outdoors and under glass, the neatness and order which Mr. Swan, the gardener, preserves, is very remarkable.

THE GLASSHOUSES.—Some new Orchid-houses have recently been added, and Orchids form a special feature, but they are not allowed to elbow out other good and showy classes of plants. The collection of *Cattleyas* in the large new house are in excellent condition, and as small weak pieces are never bought, there is a very uniform collection of all the leading species, such as *Cattleya aurea*, *C. gigas*, *C. Warocqueana*, the forms of *C. labiata*, &c.; here, too, are some noble masses of *Lælia anceps*, both white and coloured, and all the other *Lælias*, including some stont plants of *autumnalis alba*, of which there are said to be two distinct forms among the different specimens. In this house also *Vanda Kimballiana* and *V. Amesioa* grow far more vigorously and are flowering better than they do where more heat is given them, and specimens of *Cologyne cristata alba* pass over their flowering season without the wrinkling of the pseudobulbs which so many growers complain of. Among the *Cattleyas* in bloom are some good forms of *C. Gaskelliana* and *C. gigas* and *C. Mendelii*, as well as others of the smaller species, and also the bright yellow-flowered *Sobralia xantholeuca*, *Chysis aurea*, *Angraecum falcatum*, *Calanthe natalensis*, and several forms of *Miltonia Roezlii* and *M. vexillaria*.

Here, as in many other places, the *Saccolabiums* and *Acrides*, and some of the *Vandas* are the least satisfactory, but an alteration in the interior of the house is contemplated which will probably lead to better results. In this house, as in many of the other houses at Castle Hill, foliage *Begonias*, *Selaginellas*, *Maidenhairs*, and other plants not liable to insects are planted under the stages and on the end walls, and while assisting to keep a healthy atmosphere in the houses they are pleasing to the eye. Here a fine fine form of the showy *Dendrobium McCarthiae* is in bloom, also *Vanda Roxburghii*, *Oncidium Papilio*, and various *Cyrtipediums*, of which a promising lot of home-raised crosses are also coming on.

THE PHALENOPSIS HOUSE is a success, and that is more than most collections can boast. It is a small house, with bare earth basement, and fitted with a brick bed, such as is found in Melon-houses. This bed has a little bottom heat under the moist cocoanut fibre with which it is covered, and is utilized for striking *Dracenas*, *Crotons*, *Aralias*, and other plants wanted for decoration. From the roof are suspended the plants of *Phalenopsis*, and with them the compact-growing species of *Angraecum*, and the whole of the plants flourish exceedingly, and bloom in the most satisfactory manner, the foliage increasing in size and substance year by year. *Angraecum articulatum* and *A. Ellisii* grow here with the *Phalenopsis* to perfection, and are sending down their long flower-spikes almost as stout as a cedar pencil. It takes time to produce such plants, but it also requires something else, viz., continued good culture.

In the cool houses the *Odontoglossums* are in fine condition, and some are furnished with bloom; here, too, among a batch of *Epidendrum vitellinum majus* is a plant of a perfectly double-flowered form of it, which has proved constant by producing five spikes of double flowers last year and four this season. It is a very remarkable variation, and of considerable beauty (see fig. 18, *Gardeners' Chronicle* for August 1, 1891). With the *Odontoglossums* are the cool-house *Oncidium*s such as *O. macranthum*, *O. lamelligerum*, &c., some of them with flower-spikes,

and a stout plant of the new *O. Leopoldianum*. The *Masdevallias* and *Pleiones* are grown for the summer in cold frames, and that method of culture seems very successful, and the *Dendrobies*, of which there are a large number grown, are now growing vigorously in two of the warmest and most moist houses.

The **GREENHOUSE**, in which the flowering plants are placed, is always a pleasant sight here all the year round, and at the present time there is a marvellous show of flowers on the *Pelargoniums*, *Hydrangeas*, *Lianthus*, ivy-leaved *Pelargoniums*, *Tuberoses*, *Begonias*, *Lilies*, &c. Of the last-named there are many very finely-flowered *L. Wallichianum*, which is a species not often seen doing so well. *Celsia cretica*, too, is a pretty and useful plant here, and the baskets of *Torenia* and blue *Lobelia* are very pretty. In the numerous other houses are divisions filled with *Eucharis*, *Poinsettias*, *Coleus*, *Crotons*, *Dracenas*, and other decorative plants, and the large *Camellia*-house has specimens well furnished with buds, while the *Melon*-houses, *vine*-ries, and other fruit-houses are well in keeping with the rest of these fine gardens.

NOTICES OF BOOKS.

"**LA MOSAICULTURE**."—This title will be a little confusing for English readers, who would hardly suspect that it referred to carpet-bedding. This style of garden decoration is very popular on the Continent, and indeed, with many persons in this country. Whatever we may think of the want of taste generally exhibited, there is no doubt that these beds do possess many attractions, and some employers demand the construction of them by their gardeners. M. Mottet's little book, published by Octave Doin, Paris (London: Williams & Norgate), affords a very useful guide as to the selection and propagation of the plants, the designing and preparation of the beds. Even to those who do not read French, the book will be serviceable, as it furnishes not only ample lists of suitable plants, but also a large number of plans and diagrams showing the method of planting. We are pleased to see an absence of the absurd butterflies and other objects which have in some cases brought this style of decoration into ridicule.

"**LES PLANTES D'APPARTEMENT ET LES PLANTES DE FENETRES**."—Under this title M. D. Bois has published a handy little volume on window plants. The first part comprises some elementary notions as to the conditions favourable or unfavourable to plant life, the ordinary cultural operations, and the like. Some useful hints are given as to the purchase of plants in the public markets or flower-shops. Descriptive notices of suitable plants are supplied, together with a glossary of terms and an alphabetical index. The work is published by J. Baillièrre et fils, 19, Rue de Hautefeuille, Paris, and for all to whom the language presents no difficulties we commend it as a very serviceable little book.

FOREIGN CORRESPONDENCE.

BUENOS AIRES.

With this I send an Oak plant, with a few details respecting it, thinking that a record of the rapidity of growth, compared with the growth of same plant in the "old country," may be of interest to your numerous readers. The acorns, from one of which the accompanying plant was produced, were gathered with others in the month of March, 1890, and sown on the 12th of the following month (April); the plants appeared above-ground towards the end of the following September. During the months of October and November we had some severe frosts (unusually severe for this locality), consequently the plants were cut down several times, but "broke away again." Compared with other seasons, the past has not been one at all conducive to rapid growth, being extremely

dry until quite late in the season; but the accompanying plant when pulled from the seed lines yesterday measured, from the point of the roots to point of growth, 7 feet 1½ inch.

We have here: common Ash, seeds of which were sown in October, 1887; present measurements:—height, 15 feet 8 inches; circumference, 1 foot from the ground, 14 inches. *Carolina Poplars*, which were put in as cuttings (where the trees now stand) in July, 1886, and were headed back in July, 1890, stood from 40 to 50 feet high, and in circumference were 20 inches; some of same trees were cut down, sawn into boards, and boxes made. *Lombardy Poplars*, four years from cuttings, 45 feet high, circumference 30 inches. *Eucalyptus globulus*, sown in October 1887, present height 42 feet, circumference 20 inches. *Golden Ash*, budded on the common Ash in February, 1889, bud started in the second week of the following November, and by the end of March following had made 7 feet 10 inches. *Casuarina stricta*, not yet four years from seed, are over 17 feet high and 12 inches in circumference. Apple trees, only four years from grafts, are giving good crops of fruit, fruit large and sound, but not so weighty or such good flavour as our English Apples. A great many British forest trees do well here. Horse Chestnuts, Beech, and Sycamore very indifferently. What would some of the home gardeners think of budding *Roses*, and in five weeks having a growth of 17½ inches?

We have, of course, a very long growing season and a glorious climate; with some trees growth commencing early in September, older plants of Oak and Ash and other trees not making any movement until well into October. Growth generally begins to decline towards the end of April, excepting the *Eucalyptus* and *Casuarina*, these continuing to grow well into May and frequently into June. Our hottest day the last two years has been 95° Fahr. in the shade. *Château Parry, Quilmes, Buenos Aires, S. America, June 16, 1891.*

PLANT PORTRAITS.

AGANISIA IONOITEBA, *Nicholson*.—Originally known as *Koelensteinia*. *Lindleya*, t. 287.

ANOGANTHUS BREVIORUS, *Garden*, July 18.—A yellow-flowered *Amaryllis*, native of Natal.

ARCTICUS ARIZONICA, *Garden and Forest*, p. 317.

CALADIUM ADAMANTINUM, *L. Linden, Illustration Horticole*, t. 132.—A Peruvian importation, with long-stalked, hastate leaves, deep green, with white veins, and numerous small white spots.

CATTLEYA DOWIANA AUREA, *Orchid Album*, t. 132.

CATTLEYA LABIATA VAR. *SCHROEDERII*, *Garden*, July 11.—Segments lilac, lip also deeper lilac, with a central orange blotch.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

PEACHES AND NECTARINES.—The earliest house should now be gone over, if at all thick, and abundance of light admitted into the trees, so as to ripen the wood. Many of the shoots that have borne fruit should have been removed early, to give room for next year's wood to get well ripened; and though removal of all useless wood is now recommended, shortening back must be deferred for a time, as the removal of too much wood at one time causes the shoots to make new growth—but much may be done by removing branches not required, and early-fruiting wood that may have been left. If at all dirty, no time should be lost in thoroughly cleansing with sulphur and water or tobacco-water and soft-soap, with a little sulphur, all well mixed together. The roots should never be allowed to get dry, so that a mulch of decayed manure will check evaporation. Now is a good time to make a note of varieties, and to determine what removals may be required, as it is often necessary to lift young trees that grow too much to wood; these must get attention as soon as possible after the fall of the leaf. In Peaches for early fruits there is a wider range than in Nectarines. I will give a list

of what I have found the best early next month, so that new additions may be made if required.

THE SUCCESSIONAL HOUSES that have had the fruits just cleared should get a thorough soaking of liquid manure, removing all old wood that has borne fruit, and thinning as recommended for the earlier trees, giving a good mulch of decayed manure, and syringing daily, and also cleansing if red-spider be present. Give abundance of air in those houses that do not get plenty of sun, and a little warmth in the pipes to assist in finishing up the wood. In modern houses with a south aspect, and the foliage kept thin, this is only necessary with the latest trees.

LATE HOUSES will now be giving plenty of fruits, and these must get sufficient moisture at the roots to prevent premature ripening. The syringe must also be kept quiet when the fruits commence to soften; much can be done to retard or hasten the fruit by ventilation, and the use of fire-heat. Abundance of air greatly adds to the flavour of the fruit, but too much at night must be avoided by closing the front ventilators, as cold draughts prevent the fruits swelling. A mulch of spent Mushroom-manure will assist the roots and keep them from drying. The wood must also be removed as soon as the fruits are gathered, as advised for earlier houses. In unheated Peach-cases much can be done to forward the fruit by closing early, and by careful airing in dull weather, for if not pushed forward, the crop comes in with the early varieties on a south wall. Trees in pots that have borne crops must not suffer for moisture; these may be removed to an open sunny position, the pot plunged up to the rims, and the surface covered with decayed manure, and in dry weather given a good syringing nightly with the garden engine, and kept clean. *G. Wythes, Syon House, Brentford.*

THE KITCHEN GARDEN.

DWARF AND SCARLET RUNNER BEANS.—The early and late sowings in light soils should be mulched heavily with manure, but on heavy soils less so. Water them thoroughly when the soil becomes dry. Beans of all kinds require good rich soil, and should not at any time be allowed to suffer for want of water, or the flowers will not set well. The plants should be kept in vigorous growth by picking all pods when large enough, allowing no seeds to ripen; it is desirable to save seed from any special variety, the smallest pods should be removed, retaining the longest and best-shaped ones only. In case of a glut, the green pods may be kept in a fresh condition for several days by putting the stems in vessels of water, and placing them in a cool shed.

To prolong the supply of French Beans as long as possible, seeds should be sown in 8-inch pots, five or six plants in a pot, and sufficient space left for earthing up. The pots may be stood out-of-doors until established, removing them into suitable quarters later.

LETTUCES.—Sow the Hardy Cabbage varieties on raised beds to stand the winter; and again, a fortnight later, another sowing should be made. These, if afforded some slight protection in very severe weather, will come into use long before spring-sown ones. When the plants are large enough, they should be thinned sufficiently so as to stand clear of one another. The thinnings can also be pricked out in other beds.

EARTHING CELERY.—The main crop should soon be ready for the first earthing. This is best done in three times, at intervals of a fortnight, and when the plants are perfectly dry; all small leaves and side shoots should first be removed, and the tops drawn tightly together with a piece of matting just under the green leaves. This must not be tied too low, or in any position that will cripple the growth of the young heart of the plant, as it should remain until after the second earthing. Be careful to ascertain that the plants and the soil at their roots are in a thoroughly moist condition before the soil is added. If worms and slugs are likely to be troublesome, a good dressing of lime and soot mixed should be given before any soil is placed around the stems. If it be necessary to give any more water or liquid-manure, it should be given a day or two before commencing to earth. The foliage and soil should also be in a fine and dry condition at the time of earthing, and the latter prevented from entering the centre of the plants. Where fish-guano or other artificial manure is applied, it should be sprinkled in the trenches, and incor-

porated with the soil in the first stages of earthing-up. If any heads are required for show purposes, they should be first wrapped round with brown paper before any soil is put against them, as a further preventive against discoloration. Care must be used not to earth too deeply the first time, as the young leaves must be allowed to continue their growth freely. The soil should be broken up with the spade, and pressed around the stems. In order to have it well blanched, and of good flavour, the light must be excluded from the stems as much as possible, and this will apply more especially to the last earthing.

Chervil, Radishes, and Mustard and Cress, should still be sown at short intervals if they are in constant demand. Herbs of the various kinds should, if not already done, be cut and slowly dried, and the required winter stock bunched, placed in paper bags to keep them free from dust, and hung up. Make plantings at intervals of Endive and Lettuces for autumn use. *C. J. Waite, Glenhurst, Esher.*

PLANTS UNDER GLASS.

HABROTHAMNUS—The varieties *H. carminata*, *H. elegans*, and *H. Newalli* make very useful plants for forcing during the winter, if they are properly prepared. Have the shoots cut well in during the summer, so that the plants have time to make young growths before autumn. Stand the plants out in the open on a bed of coal-ashes, from the present time to the third week in September, which will cause the young shoots to break strong and sturdily. When taken indoors, place them in a greenhouse; afterwards, bring them in heat as required. The larger the plants are, the more flowers they will produce.

CHRYSANTHEMUMS.—These will now require daily attention, in the way of tying in the shoots, and also disbudding. Plants which are intended to produce exhibition blooms should have all side-shoots pinched out as soon as they appear. Those which have filled their pots will require abundance of water at the roots, and the early varieties which have set their heads should be assisted occasionally with clear manure-water, or some well-tried fertiliser. Any plant which may have been potted late should be staked, so that no damage may be done to the roots later on. Syringe the plants overhead twice each day, when the weather is bright, to keep them in a healthy state.

INDIAN AZALEAS.—The latest of these should by this time have completed their growth, and if not already done, should be shifted from their growing quarters into the open air at once, so as to perfectly mature the young wood and develop the flower-buds for another season. Plants which have been grown under the shade of Vines or Peach-trees, should have a gradual course of exposure to the full rays of the sun, lest the young foliage should become burnt, and a great check thus be given to the formation of the flower-buds. Keep a sharp look-out for thrips, as at this season of the year they increase very rapidly, and will quickly do irreparable injury to the plants, and on their first appearance, either fumigate, or thoroughly syringe the plants with a solution of soft soap and tobacco-water, and also syringe freely with clear water every evening when the weather is bright. Should any of the plants require re-potting, they should have attention at once. Fibrous peat of the best quality, also some charcoal, broken to the size of Hazel-nuts, with a liberal addition of silver-sand, will suit their requirements. Potting must be done thoroughly, and they will amply repay any extra labour bestowed upon them. Make the fresh material quite firm round the old ball, avoid giving large shifts, one clear inch around the old ball will be quite sufficient. After potting, stand them on a bed of coal-ashes and be careful to place them level, so that water can be equally distributed. *R. Milner, Penrice Castle, Swansea.*

THE HARDY FRUIT GARDEN.

PEACHES AND NECTARINES—These trees, although later than usual, have made good growth, the foliage being strong and healthy, and free from insects. The season being backward, every possible attention should be afforded the trees, especially late kinds, pinching back as fast as they appear all sublaterals. Keep the leaves from overhanging the fruit, and so fully expose each to the full influence of the sun. Lose no time in removing any of the shoots where too thick, cutting them back to two or three eyes, in case a fresh shoot may be required

another season for keeping the body of the tree filled with young fruitful wood. If the roots have been heavily coated with manure, no time should be lost in removing it, so that the sun may strike the soil direct, warm the roots, and help along the fruit. Do not over-syringe the trees, once or twice weekly is ample in dull sunless weather; but should the days be hot and dry, syringe more frequently, and not later than 2.30 p.m. Midseason sorts, such as *Noblesse*, *Royal George*, *Stirling Castle*, *Goshawk*, &c., should, if the crops be heavy, receive attention at the roots, and if the wood is weak a few more fruits may be taken off, and then feed well with liquid manure. All cropping should in a great measure be regulated according to the strength and vigour of the trees. Dymond is again this season cropping well, and is, in my estimation, one of the best Peaches ever sent out. Early sorts, such as *Alexander*, *Waterloo*, *Amsden*, *Early Beatrice*, will be over, and the trees should not be neglected, but partly pruned, this time removing wood which has borne fruit, refilling with shoots trained for that purpose; also syringe once or twice weekly, and let this be thoroughly well done, while a few applications of liquid manure at the roots will be a great help to large and fruitful trees, especially if the soil is light and dry.

Earwigs, in many gardens, will be found very numerous and troublesome, eating the fruits at the points, and thus spoiling probably the very best and most handsome Peaches. They should be trapped by placing pieces of Bean stalks, or anything hollow, in 6-inch lengths at intervals amongst the branches. Earwigs find their way down these, and should be blown out over a pail of hot water daily. With constant attention these creatures may be kept in check, and the fruit spared from injury.

APRICOTS.—The laterals must be pinched, and all the leading shoots made secure to the walls. After the fruits are ripe and gathered, lose no time in bringing the garden-engine into use, thoroughly washing the leaves, and dislodging any insects. Do not be led astray by the frequent rains; the borders are apt to get very dry where sheltered. If the borders are well made, and the trees are in good bearing, a deluge of manure-water will also prove very beneficial to the trees, and help them to plump up strong fruitful buds; in the meantime, soil and other material should be got in readiness for top-dressing and renewing all fruit borders in need of it. *H. Markham, Mereworth Castle, Maidstone.*

THE ORCHID HOUSES.

THE INTERMEDIATE HOUSE.—*Odontoglossum grande* does well in this house, and at present has about half made up its new growths. This *Odontoglossum* does not like too much water at any time, even when growing strong; if at all overdone, the young growths will go spotted, and the plants quickly lose its roots. Any plants that are now growing clean and strong will be improved by a little guano rubbed into the water before using, at the rate of about 2 oz. to the gallon of water; this, if followed for the next two months, will improve the size of the flower-spike. *Miltonia vexillaria* that have not already been repotted should be done at once. Our own plants are always repotted during the early part of August; this gives the plants plenty of time to get established before the winter sets in. The most proper way to water these plants is by the syringe, and the only time when care is necessary is immediately after repotting. If the potting compost, which should consist of peat, sphagnum, and either coarse silver sand or potsherds, broken small, is moist at the time of use, no water will be required at the root for a week or two, that which falls from the foliage of the plants being ample to keep the roots sufficiently moist. *Pleiones* must now receive an ample supply of moisture at the root, also manure-water should still be given the plants until they are taken from their growing quarters for resting purposes. Much depends upon when these plants are required in flower, they are easily kept back to a late date by keeping them growing, but once they are taken out into a resting-house, nothing that does not materially affect the size of the flowers will keep them back afterwards. These plants are in many cases even yet kept dry when resting; this is undoubtedly a great mistake, for if the roots are allowed to die entirely, the size of flower and the healthy condition of the corals will both suffer. *Vanda cuculea* is now sending up spikes; this is one of the most unsatisfactory plants to grow of the whole genus, and yet one of the most beautiful.

I have grown this plant for a number of years with varying success; for two, three, and in some cases four years after these plants have been imported the growth and the flowering have been perfectly satisfactory, then when the right treatment has seemed to have been found the plants refuse to grow, but if placed into a warmer house, spotting of the foliage quickly ensues. The best plants I ever grew of this *Vanda* was in a position where the door could be thrown open upon them for five months in the year, the side and top ventilators also being open; the plants were frequently syringed overhead. *Vanda tricolor* and *V. savais* will now likely send up spikes of flower. These become very useful now that Orchid flower is short, but should these plants be required to make a good show during the spring, or for exhibition purposes, the spikes should be removed as soon as they show themselves. Few plants are likely to suffer more than *Vandas* from being allowed to over-flower themselves. These plants should now receive a good syringing at least twice daily; more especially is this necessary where plants have lost several leaves after the last season's flowering. This will assist in getting a larger number of roots from the bare stems. The plants may be cut down to bring the foliage down to the level of the pot when the potting season comes round. No change will be necessary in the temperature for the different departments from that given in a previous Calendar. *A. G. Catt, Parkfield, Hollow.*

THE FLOWER GARDEN.

HERBACEOUS PLANTS.—The recent rains have greatly benefited herbaceous plants. Plants of early-flowering varieties of the *Potentillas*, which were cut down as soon as done flowering, are now sending up a profusion of dwarf sturdy flower-spikes which are well furnished with their pretty green leaves. Cut out all decayed flower-stalks and leaves from among the fresh foliage, and gather seeds of choice flowers as they ripen. Continue to tie up flower-stems that require support, and train climbers over the space allotted to them, the points of the shoots being allowed to hang somewhat loosely and informally. Rock plants should be kept within their limits, the same remark applies to the tall strong-growing ones, as each plant should be allowed due space to develop and show to advantage its special features.

ARRANGING THE COLOURS FOR 1892.—The present or any time within the next few weeks will be a good time to note down any alterations contemplated being made in the floral picture next year. My practice is to make a plan of the flower garden, and, when the display of flowers is at its best, enter thereon the names of the plants which are to be put into each bed the following summer. The beds on one side of the central walk in our Italian garden being a facsimile of those on the other, they are, therefore, filled alike in pairs, so that one side of the plan is devoted to the arrangement or composition of the beds for the ensuing summer, and the other half to that of the spring-flowering plants, noting down, in April, what description of plants are to replace the summer occupants of the beds the following October or November. We then propagate the several kinds and varieties of the needful plants, in proportion to the arrangements thus made; and when planting time arrives, there is no time lost in determining "what we shall put in this bed, and what in that," and in wondering whether we have enough of such and such plants to do so. There is no working in the dark. The necessary quantity of each kind is previously known, and propagated accordingly, with a liberal allowance for any mishaps that may occur before planting time arrived. One plan made on stout drawing paper will last several years, as the pencil writing of the previous autumn and spring can be easily erased.

GENERAL WORK—This will consist in clipping Box edging, Thorn hedges, &c. The latter are not always cut into so good a shape as they might and should be. In some few cases it is necessary to cut Yew hedges square at sides and top, so as to be in character with surrounding objects; but in a general way they should be cut into a rounded point on the top, sloping gradually from mid-height of hedge, giving a section representing a semi-elliptical figure. Hedges thus cut, as they are on this estate, and in most of the nursery grounds in Edinburgh and further north, are always thick and well furnished from the ground, and look well. *H. W. Ward, Longford Castle, Salisbury.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY,	AUG. 19.	{ Trowbridge. Shrewsbury (three days).
THURSDAY,	AUG. 20.	{ Aberdeen (three days).
FRIDAY,	AUG. 21.	{ Brechin (two days). Devon and Exeter.
SATURDAY,	AUG. 22.	{ Leith.
SUNDAY,	AUG. 23.	{ Cercle Van Houtte, Ghent, opens (eight days).

SALES.

MONDAY,	AUG. 17.	{ Special trade sale of Dutch Bulbs at Protheroe & Morris' Rooms.
WEDNESDAY,	AUG. 19.	{ Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	AUG. 20.	{ Special trade sale of Dutch Bulbs at Protheroe & Morris' Rooms. Orchids in Flower, at Stevens' Rooms.
FRIDAY,	AUG. 21.	{ Imported and Established Orchids at Protheroe and Morris' Rooms.
SATURDAY,	AUG. 22.	{ Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—61°·8.

THE extension and improvement of fruit culture in this country are attracting great attention just now. When the subject was first started, the fair prospects were well nigh ruined by exaggerated statements and theories based on imperfect or defective evidence. A more wholesome state of things now prevails. People are beginning to find out that the Royal Horticultural Society has for many years past done excellent service, and that a very large proportion of the information we have about fruits and fruit culture has emanated from Chiswick; whilst the Fruit Conferences that have been held there, as well as in Edinburgh and elsewhere, and the reports that have been published since, have placed in the hands of the public a vast amount of trustworthy information. The Fruiterers' Company, by giving publicity to Mr. WRIGHT'S prize essay, has greatly helped on the work. The British Fruit-Growers' Association has also been most active in diffusing information of the right kind, and publishing it in the right quarters. The proceedings of the Beddington Conference, held under the auspices of the last-named Society, have already been noted by us. Arising out of that, a scheme of education comprising an elementary knowledge of plants and their ways of life, and gradually passing on to the technical details of cultural operations, has been prepared by the Society for submission to the Education Department,

and there is every probability that it will be adopted in the rural schools. If this scheme works well, as we believe it will do, a very important step will have been taken, and one which will grow and develop, so that we shall eventually have a trained band of teachers, capable of going from place to place to demonstrate to the cottagers and small cultivators the best methods of cultivation, the best sorts to grow, and other matters of interest to them. In fine, we shall be adopting what Belgium, France, Germany, and other countries have already done, to the great benefit of the country districts.

At Cardiff also, this young and energetic Society has this week shown evidence of its power for good. Mr. E. J. BAILLIE'S paper on "Fruit Growing as an Industry," was an excellent sample of an introductory address. Mr. BAILLIE dealt with facts which we need not repeat here at length, as our readers are familiar with them—facts, however, which need repeated presentment on the spot in the rural districts. We may, however, extract a few sentences which show that Mr. BAILLIE is on the right track. "Fruit-growing as an industry," said he, "is working for a living, not riding a hobby, or playing with a fad;" moreover, it is a productive industry, not an employment or occupation that can run itself, or that can be run under the so-called superintendence of a lazy fellow, or of one who lacks method, or lacks knowledge of a particular order. "In these days," continued Mr. BAILLIE, "it too often happens that spasms of speculation are indulged in instead of sustained occupation. A nibble at some commission in the morning, a juggle with a share list at noon, a manipulation of some mining venture, or a transfer of some stocks, characterise rather than caricature phases of what come to be called (for show of respectability) modern commerce."

Mr. BAILLIE further pointed out, that this matter of fruit culture is much more horticultural than agricultural—the fruit cultivator must be a good gardener. The lecturer then proceeded to expatiate on the requirements of the case, both as regards men, trees, and soil, and insisted on the necessity for growing the best of its kind in the best way. First-rate quality should be aimed at, and fruit should be bought by sample as grain and other produce of the earth is sold. The method of dealing with orchards infested with insects was expatiated upon, and the lecturer ended with an eloquent peroration, laughing at the foolish fears and doubts of the pessimist, and advocating the rational extension of fruit-culture not only for financial reasons, but also on the higher grounds of the physical and mental welfare of the cultivator.

"There are weary eyes aching over the needle night after night, to these there is little to look at of this beautiful world—only the dull dim street. There are heavy hearts which hear no semblance to music, save the dinner-bell at the factory; there are languishing spirits in close crowded courts fainting for the breath of the breeze. Toilers these in the towns whose lives are almost without hope. Open the gates of Arcadia! Lead the children out into a peopled paradise! How grandly then would everything go in the way which those who had eyes to see know must be right? Coming face to face with the fair freshness of Nature, how we can strike off the chains that bind humanity down to the dull routine of a mechanical existence of a sunless life, when smoke and chimneys take the place of sunlight and trees, and the hissing of steam and the fumes of chemicals torment and stifle those who might find freedom and fulness of life in work of the orchard and the garden, or rest in the shelter of the grove."

Mr. POTTIGREW'S paper, thanks to the courtesy of the Hon. Sec., is given in full in another column, where its thoroughly excellent qualities will commend it to the notice of practical men.

English Orchid Growing.

ENGLISH Orchid growers, it appears, must hide their diminished heads. The editor of the *Journal des Orchidées* has paid several of our establishments, public and private, a visit, and has arrived at the conclusion that on the continent, and especially in Belgium, there are much better cultivators of Orchids than are to be found (barring exceptions, such as that of Mr. MEASURES) in London. M. WAROCQUE'S collection, for instance, is extolled at the expense of that of Baron SCHRODER.

As to the commercial establishments, the impression made on our visitor was one of "bad cultivation, want of system (*ordre*), and cleanliness. The majority of the houses are badly kept, the pots and stages are dirty . . . the culture is not good, and is not to be compared with that of the principal commercial establishments of Belgium." *Odontoglossums* in particular excited our colleague's animadversion—pseudobulbs not larger than pigeon's eggs, feeble inflorescence, flowers badly developed, and of bad shape. We should have supposed the visit had been paid in the course of one of our November fogs, but the writer attributes our deficiencies to want of air, too high a temperature, and to the employment of peat. Some of the best specimens he saw in England were of Belgian origin, which is, he says, not surprising, as it will not be easy to find in London *Odontoglossum* cultivation corresponding to that of the Horticulture Internationale, or of MM. VERVAET, VINCKE, VUYLSTÈRE, PEETERS, and MORREN, in Belgium; or that of DUVAL and TRUFFAUT in France. Such slashing criticism has, *ipso facto*, an element of weakness about it, and it will certainly not be entirely acquiesced in. The paucity of new plants also struck our contemporary. All of which *donne à penser!* Our Orchid growers are well able to take care of themselves.

ANCIENT SOCIETY OF YORK FLORISTS.—Under the auspices of the Society, commemorative services were held on Sunday last, in the church of St. Michael le Belfrey. The handsome interior of the edifice lends itself admirably to floral decoration, and in the skilled and willing hands of several of the members of the Society, was made to assume a very beautiful appearance, in fact, pronounced most beautiful by very many appreciative admirers. In the morning, the vicar, Rev. E. S. CARTER, preached, basing his discourse on the words "Consider the Lilies." In the afternoon the chaplain of the Society, Rev. F. UMPLEBY, preached from the words, "If God so clothe the grass, which is to-day in the field." The Very Rev. the Dean of YORK preached in the evening, from the words, "the fruit of the Spirit," the several discourses being made appropriate to the occasion. The choir also rendered good service, being specially augmented; the anthem "The Wilderness" (Goss), was sung in the afternoon and again by desire in the evening, the soloists being Messrs. WILKINSON, HAGYARD, SUTCLIFFE, COX, and Master LEE, of the Cathedral choir. At the close of the evening service, Mr. A. SAMPLE, the organist, gave an organ recital, which most of the congregation remained to hear, with manifest appreciation. A great number of people remained in the church until quite a late hour, seemingly charmed with the scene presented. The offertories at each of the services were in aid of the County Hospital and York Dispensary, about £10 being realised, which makes no less a sum than £30, which this Society has obtained for charitable purposes within the last three years.

THE SILVA OF NORTH AMERICA.—The second volume of Professor SARGENT'S classical publication on the trees of North America is before us. It is devoted to the description and illustration of trees belonging to the following orders: Cyrillaceæ, Celastraceæ, Rhamnaceæ, and Sapindaceæ, some fifty in all. We have already expressed our opinion of the substantial value of this work, both as regards the text and the illustrations. The value of illustrated works is often quite disproportionate to the cost and labour expended in their production. To those who

ample index of these notes given us hereafter. The plates are remarkable for their faithfulness, and for the careful presentation of those details so serviceable to the botanist, but which are, not unnaturally, ignored by the non-botanical artist. One of the most interesting genera treated of in the present volume is *Acer*, or Maple, of which sixty or seventy species are known, the largest number being found in Japan. In North America, with which alone the present volume is concerned, there are nine, five of which belong to the Atlantic, two

palmatum, Rafinesque, *New Flora*, 1:48 (1836), not of Thunberg." The additional trouble to the author would be trifling in comparison to the convenience conferred on the reader. The true Sugar Maple is referred to as *A. barbatum*, of Michaux, and a long footnote gives details as to the preparation of the sugar from its sap. The *Acer saccharinum* of Linnaeus, it appears, is the Maple, best known to us as *A. dasycarpum*, or sometimes as *A. eriocarpum*, otherwise Sir CHARLES WAGER'S Maple, an excellent town tree. *A. negundo* is also an excellent town-tree.



FIG. 25.—PALM HOUSE, WELBECK GARDENS. (SEE P. 1-5.)

only aim at the production of a drawing-room table book, and to those who desire nothing else, this may not be of consequence, but when a more serious purpose is in view, the result is vexatious. Professor SARGENT'S book is intended for use and research. It abounds with information, the notes in particular being replete with curious and valuable observations. Among them we may note biographical notes on the principal botanists of past times connected with the plants described. It is to be hoped that we shall have an

to the Pacific region, one is peculiar to the central mountain ranges, and one extends across the Continent. The Sycamore, *A. pseudo-platanus*, does not thrive in the United States, nor are the Japanese ones capable of adapting themselves permanently to the climate. The Norway Maple, *A. platanoides*, makes itself quite at home. It would be useful if Professor SARGENT would, in succeeding volumes, give the date of the original establishment of each species thus, "*Acer macrophyllum*, Pusth, Fl. Am. Sept. 1:267 (1814); *A.*

The white-leaved Maple, so common now in our gardens, is only a variegated form of this species, although many people speak of it as of Japanese origin.

MESSRS. LAING & SONS.—The *employis*, numbering eighty, of the firm of Messrs. JOHN LAING & SONS, nurserymen, Forest Hill, had their annual beanfeast on the 7th inst. Journeying from Forest Hill Station, they reached Eastbourne shortly after 10 A.M., when each one amused himself according to

his own fancy until 1 o'clock, when all assembled at the Lamb Hotel to dinner. After dinner all again went their own way, meeting at Eastbourne Station at 8.30 p.m. for the return journey, reaching Forest Hill about 10.30 p.m., all being thoroughly satisfied with the day's outing.

THE CONGRESS OF HYGIENE AND DEMOGRAPHY.—At this important meeting, papers were read on town smoke and fogs, open spaces, heating towns by steam, preventible diseases, &c. The very large proportion that the latter bear to the total is a disgrace to our civilisation, and furnishes the best answer to those who, with a want of due sense of proportion, endeavour in all honesty to obstruct the progress of knowledge, and to perpetuate disease and misery which might be obviated.

MR. W. J. GRANT.—We understand that this gentleman, so well known in the Rose world as a very successful amateur grower and exhibitor, has been appointed by the Monmouthshire County Council to superintend the department they have created for Agriculture, Horticulture, and Forestry. Mr. GRANT for some years managed the fine estate of Hope Ead, Ledbury, and the knowledge that he there brought to bear on every kind of farming, the management of stock, &c., combined with his well-known business habits, have no doubt been the cause of his obtaining this honourable and responsible position. He will devote himself to developing the resources of the county, and we are sure that all who have known him will wish that he may be many years spared to fulfil the duties of the post to which he has been appointed. Since leaving Hope Ead, he has been connected with the English Fruit and Rose Company; but his present position is one much more suited to his varied talents and acknowledged ability.

DECAYING OF PEACHES.—We have received samples of Peaches and Nectarines which prematurely dropped, and which discoloured and rotted without any signs of fungus, except the mould which is usually found on rotten fruit. The stone was in some, but not all cases, split. Can any of our Peach growers suggest a cause and remedy for this not uncommon malady?

THE BRIGHTON AND SUSSEX NEW HORTICULTURAL AND MUTUAL IMPROVEMENT SOCIETY, and the Brighton and Hove Chrysanthemum Society, will amalgamate for their annual outing on August 18, when they intend visiting some of the leading places at Redhill and Reigate, including Gatton Park, Wray Park, the Great Doods, Woodhatch Lodge, High Trees, &c. Weather permitting, the party will leave Brighton at 7.50 A.M.

THE TREATMENT OF DISEASE IN PLANTS BY MEANS OF COPPER COMPOUNDS.—The salts and other compounds of copper appear likely to occupy a place in horticultural science, next in importance to that of manures. A mixture of lime and blue vitriol (copper sulphate) has been employed for some time with success as a germicide in the treatment of the diseases of the Potato, the Tomato, and the Vine. Within the last few months, Mons. AIMÉ GIRARD has been applying this mixture to the Sugar-Beet, in cases where the roots have been attacked with the disease known as *Peronospora Schachtii*. Solutions of lime and copper sulphate, each containing three per cent., are mixed and then sprayed over the crop, and there is evidence to show that the disease has been effectually checked, for the fungus to which it is due appears unable to live after being damped with this solution. The use of lime along with the copper-salt has been supposed by some to be quite unnecessary; but this is not the case, for some recent experiments made by Signor E. FORMENTO, show that the copper cannot reach the inner parts of the plants by dialysis, except when the salt is mixed with lime. He made experiments with the Vine and other plants in determining the manner, and the extent of the absorption of

copper by vegetable tissues. Since it is now established that plants can assimilate metallic compounds with readiness, the effect of using copper-salts for germicidal and insecticidal purposes should be watched with care in the case of food-plants like the Sugar-Beet, the Potato, cereals, &c., for copper is known to exercise a toxic effect upon the human economy. Of course, in the case of plants which are not used as food materials, it does not matter.

THEORY AND PRACTICE.—Nothing is more common than to hear the "practical" man denounce theory, and loudly asseverate his opinion that an ounce of practice or of fact, as he calls it, is worth a ton of theory. Of course, the value of a theory is directly proportionate to the accuracy with which the facts have been observed and correlated; but, as a general rule, it will be found that the practical man is the wildest theorist. The explanations he gives, say, of the phenomena of plant-life, are often astounding—the deeds of the sap being something far beyond the comprehension of the physiologists. We append a good illustration of the practical man's theory. Evidently the writer had to deal with Plums diseased and distorted by a fungus (*Exoascus pruni*), so often figured and described in these columns. But here is the explanation given of these bladder-Plums: "In the Hon. Captain COCHUANE'S garden at Redcastle, some Beans are growing under a Damson Plum tree, and, while both were simultaneously in blossom, the bees appear to have carried the pollen from the Beans to the Plums, with the result that a large quantity of the fruit is a hybrid between Damsons and Beans. The Plums are shaped like Beau pods, being elongated and hollow, but containing neither stones nor beans. One or two of the pod-Plums, which we have seen opened, showed what appeared to be the rudiments of what might be either a stone or a bean. Of course the fruit so changed is entirely useless for any purpose." Similar theories are invoked to explain the cup-shaped Foxgloves—these are generally attributed to crossing with a Canterbury Bell. A lady correspondent, year after year, used to send us specimens of Violets affected with the parasitic fungus, *Ecidium violæ*. These Violets grew beneath the shadow of some Ferns, *erygo*, the Violets were crossed with the Ferns. Were not the brown spots conclusive evidence? We ventured to think not, but our correspondent returned to the charge, and refused to be convinced that her interpretation was not the correct one. These persons belong to a class who vehemently oppose evolutionary theories, but nevertheless formulate theories of their own, so baseless that not the wildest of speculative evolutionists could entertain them.

THE RELATIVE ACTIVITY OF GREEN AND RED LEAVES.—Mons. JUMELLE, of the Paris Academy of Sciences, has been comparing the relative activity of green and other coloured leaves by exposing them to sunlight under comparable conditions in a closed atmosphere containing a known quantity of carbonic acid gas, and then determining how much of this gas was decomposed. The results show that in trees with red or coppery leaves, the chlorophyllian assimilation is always lower than in the same tree with green leaves. This explains the well-known fact that trees of the former class increase in size much more slowly than those of the latter. In some cases the differences are very great; thus, the assimilation of the green Beech is about six times as great as that of the copper Beech, and there is the same difference between the ordinary and the purple Sycamore trees.

THE ACQUISITION OF ATMOSPHERIC NITROGEN BY PLANTS.—A large number of experiments has been carried on during the past few months by ATWATER, which confirm the view that nitrogen is readily absorbed from the atmosphere by certain plants when treated with "soil-infusion," and that the gain of nitrogen is dependent on the number of root-tubercles which the application of this liquid

induces. SCHLOESING and LACERENT have also been carrying on an investigation into the same subject, and with similar results. In commenting upon the results of these researches, BERTHELOT states that he regards them as a final proof that under the influence of microbes, leguminous plants can utilise and fix the gaseous nitrogen of the atmosphere.

DAMAGE FROM ALKALI WORKS.—An important case affecting the alkali trade was concluded at Chester Assizes lately, after a two days' hearing. WILLIAM BOOSEY, nurseryman, of Middlewich, sued the Cheshire Alkali Company to recover damages for injuries done to his nursery by powders and gases given off by the defendants' works. Plaintiff has 12 acres of nursery ground at Middlewich, and alongside these the defendants constructed alkali works. It was proved that the bicarbonate of soda escaped from them and seriously damaged the nursery. The jury awarded plaintiff £500 damages.

FUMIGATING FRUIT JARS.—MR. WARREN of Isleworth, as a large fruit grower, has of course at times considerable surplus fruit, which he finds it needful to utilise himself rather than send it to market, when the returns are practically *nil*; hence he boils down much of it into pulp and preserves it in large but narrow-mouthed jars for the jam makers in seasons when the scarcity of fruit creates a demand for pulp. Formerly, Mr. WARREN did bottling largely, but the introduction of the canning process in America has materially discounted the value of bottled fruits. The jars in question hold, perhaps, about six or eight quarts; they are all thoroughly cleansed and stood for use when needed. But as no sugar is added to the pulp, and as it is important that all fungoid germs be fully destroyed before the jars are filled, it is the rule to dip into a solution of sulphur long strips of calico, one half their length; these strips are, when dry, ignited at the sulphur end and dropped into the jars, but the other ends are kept in the mouths by the large corks or bungs which are fixed into the mouths immediately the jars are filled with the sulphur fumes. These fumes are so powerful as to destroy all fungoid life within the jars, and so soon as found to be ready for use the corks are removed, the strong sulphur fumes rushing out check the ingress of air, and the vacuum thus created is immediately filled by the boiling pulp. This is at once tightly corked down, and will in that state keep for even a couple of years in good condition. Soft fruits, such as Gooseberries, Currants, Raspberries, Strawberries, and Plums are thus preserved. Market dealers object often to Saturday-gathered fruit, hence most of this is boiled down.

MR. BOWERMAN, HACKWOOD GARDENS.—Many of our readers will, with us, regret to learn that this estimable gardener has been compelled to give up his supervision of the fine gardens at Hackwood Park, Basingstoke, for three months, his medical advisers having ordered absolute rest.

SMOKING IN THE BOTANICAL GARDENS, REGENT'S PARK.—At the annual meeting of the Royal Botanic Society, Regent's Park, on Monday last, Mr. EDWARD LEDGER, a Life Fellow of the Society, protested against the restriction against smoking in the gardens, and pressed on the Council the necessity of removing the objectionable rule.

MESSRS. LAIRD & SINCLAIR, OF DUNDEE.—The employes of this firm held their annual picnic on Wednesday, Aug. 5, in the grounds of Craighall, Blairgowrie, Perthshire, the residence of Gen. CLARK-RATFRAY. The party to the number of forty proceeded in brakes from Dundee, where a very enjoyable day was spent.

ORCHIDS TO NAME.—We learn that the number of Orchids named at Kew for orchidists amounts to about nineteen in each week, the total thus approxi-

mating to a thousand a year. That so great use is made of the herbarium by the gardening fraternity is very satisfactory—we could wish that others besides orchidists would avail themselves of their opportunities in equal proportion. But as the necessary researches often occupy much time and labour on the part of skilled experts, it is obvious that if the work of the department is to be carried on, a considerable increase in the staff must take place. For our own parts, we should like to see a staff of three or four trained assistants told off to act solely as the go-between the herbarium and the garden—to ascertain the correct names of the plants in the garden, as well as of those submitted to them by the public, to see that the plants of all descriptions were kept adequately and correctly labelled, that specimens were preserved for drawing or for drying, and to prepare an authoritative *Hortus Kewensis* with the assistance of the other members of the staff.

STRAWBERRIES.—Ninety-four tons of Strawberries were conveyed to Glasgow in two recent consecutive days by the Caledonian Railway Company.

RESEARCHES ON THE MANURING OF SOILS.—A German contemporary gives some account of recent researches by T. LEONE on the manuring of garden soils. From a series of exhaustive experiments, this scientist concludes that the phenomena of nitrification and denitrification in soil are due to the activity of certain bacteria or micro-organisms, and they occur in alternation according to the amount of nutriment capable of sustaining the life of these tiny beings present in the earthy matters. Thus, when an abundance of nutritive material is at hand, the rapid development of the bacteria is accompanied by the oxidation of substances which are called proteids, and this takes place partly at the expense of the oxygen in the nitrates present, with the result that ammonia and nitrites are formed. On the other hand, nitrification commences as soon as the decomposable nitrogenous products are either assimilated or are converted into ammonia compound. If this be true, then the effect of manuring soil would be in the first instance to suspend the ordinary process of nitrification, and to convert part of the nitrates present into nitrites, nitrification only recommencing when the organic matter was decomposed, and the formation of ammonia had attained a maximum. The manuring of soils, therefore, gives rise to a cycle of phenomena, and the destruction of the nitrates or nitrites in the soil is complete or partial according as the supply of manure is abundant or otherwise.

THE FORMATION AND PROPERTIES OF HUMUS.—The black organic matter of soils called humus is due to the decay chiefly of vegetable matter. This decay is brought about by the attacks of moulds and bacteria, the former alone causing the production of dark-coloured matters. P. A. KOSTYTCHEFF has recently been investigating this subject, and has been experimenting with various kinds of vegetable *débris*, e.g., grass, Oak, Elm, and other leaves. He found that as these matters decayed, there was invariably no loss of nitrogen. Now grass and leaves contain proteids, and these decompose into ammonia, a gas which partly consists of nitrogen, and since there is no loss of nitrogen, it follows that the ammonia must be reconverted into other substances, and this appears to be done by the agency of living organisms, which find their nourishment in the decaying matter. Ammonia and similar substances serve as nutriment to moulds, in the protoplasm of which their nitrogen is stored up, and this decomposing in its turn serves as food to bacteria, which still retain the nitrogen in proteid combinations. The soil, with its estimated 60,000,000 of organisms per gramme, must contain much nitrogen in the proteid form, and one set or other of organisms will predominate according to variation in the conditions. In general, the first development in decaying vegetable matter is that of bacteria, the medium becoming acid; then follow the decay of these

bacteria, the ammonia produced neutralising the acid, and moulds growing in the neutral medium; afterwards bacteria and moulds develop together. Thus, humus always contains easily decomposable matter, and consequently, the rate of decomposition observed at any period of the decay is about the same. In humus produced above the water-line, all trace of vegetable structure is destroyed by the leaves being gnawed and passed through the bodies of earthworms, caterpillars, wireworms, &c.; under the waterline, the vegetable structure is preserved, and peat results. Experiments with dead leaves pulverised by the action of these animals, in comparison with the same leaves not attacked by them, show that little or no influence on the rate of decay results from their action. After passing through their bodies, the organic matter is still fit to nourish moulds and bacteria, and when these have multiplied sufficiently to accumulate a fresh stock of protoplasm, the earthworms, &c., attack it again, and so destroy all trace of structure. The soil of black lands is permeable to a small depth only by water, and this circumstance retards decomposition, and accounts for the accumulation of humus. The decay of humus is fastest in the best drained and most open soils; for this reason, the presence of clay in a soil promotes the accumulation of humus. Woods promote drainage by loosening the soil and abstracting water, and hence in plantations the accumulation of humus is retarded, and the earth becomes lighter in colour. Inferior organisms are a means of diffusing organic matter throughout the soil—the mycelia of fungi, for instance, growing on a dead root, ramify laterally, and thus carry organic matter a little outward; succeeding organisms extend this action, and the soil becomes darkened in proportion. The humic acid of black soil is almost exclusively in combination with lime; this lime is, according to KOSTYTCHEFF, carried to the insoluble humus as acid carbonate dissolved in the water, and the acid carbonate is decomposed by contact with the moist humus. KOSTYTCHEFF is a member of the Society of Naturalists of St. Petersburg, and his paper, which is a long one, has been reproduced in several of our German contemporaries.

A NEW INSECTICIDE.—Hydrazine, a substance hitherto unknown outside the chemical laboratory, is stated by O. LOEW in the *Berichte der Deutschen Chemischen Gesellschaft*, xxiii., p. 3203, to exert an extremely poisonous action upon tiny organisms of the most varying description. A solution, containing only one-fifth of a gramme of hydrazine sulphate per litre of water, rapidly killed algae, fission organisms, moulds, schizomyces, and lowly types of water organisms. The substance, however, appears to be poisonous in its effects upon more highly-developed animals, such as dogs and guinea pigs, and there seems to be some reason for supposing that except in extremely dilute solutions, the effect of hydrazine upon the young shoots and buds or plants is deleterious. It would, however, be worth while making a series of experiments with solutions of known strength, in order to see whether hydrazine and its compounds may be turned to practical account in horticulture.

SUGARS IN MUSHROOMS.—Lovers of fungi may be surprised to learn that several species have been found to contain certain of the sugars. BOUQUELOT has recently been examining these fungi chemically. He finds that *Lactarius piperaus*, Scop., contains, immediately after it is gathered, a considerable quantity of a sugar called trehalose, and also a little of another sugar called by chemists mannitol. If, however, the fungus is dried before being examined, and then treated with water, no trehalose is obtained, mannitol alone being present. The same phenomenon is observed if the Mushrooms are merely kept for a few hours after being gathered, and hence the disappearance of the trehalose is a result of the continuance of the vital processes of the Mushrooms. Examinations of various species of

Mushrooms at different stages of growth show that when young they contain trehalose and no mannitol, in the middle period they contain both these sugars, and when mature they contain mannitol only. *Amanita mappa* is an exception, since in all stages it contains mannitol and no trehalose. The conversion of trehalose into mannitol is a process of reduction, and is probably connected with the formation and maturation of the spores. In many species the phenomena are complicated by an increase in the amount of glucose (Grape-sugar) that they contain, and in others by the appearance of glucose which is not present in the earlier stages of their growth.

PLANTS AS "CHEMICAL LABORATORIES."—In a paper on the assimilation of mineral salts by green plants, published in one of our German contemporaries, A. W. F. SCHMIDT states that the nutritive salts of the soil do not at once reach those parts of the plant when they are wanted, but are generally stored up in the root-stems and in the woody parts of the stems which are above ground. The seeds contain large quantities of salts, especially of the phosphates; they exist here as organic compounds, but during the process of germination they are again split up, and return to their original inorganic condition. The power possessed by plants of storing mineral substances differs very much qualitatively as well as quantitatively. The assimilation of nitric acid takes place in the green cells, and the nitrogen migrates chiefly in the form of amides and amidocids, which can be detected in the leaf parenchyma. The function of the lime appears to be to convert the poisonous potassium oxalate, which is found in considerable amount, into harmless calcium oxalate.

PRESENTATION TO MR. JOHN BAGALEY.—This gentleman, who for many years has been connected with Mr. BULL'S nurseries at Chelsea, and who has now joined the management of the Liverpool Horticultural Co. (JOHN COWAN, Limited), was on Thursday evening, the 30th ult., entertained at the Pier Hotel, Chelsea, to a farewell supper by his friends and members of the Chelsea Bicycle and Tricycle Club. He was presented with a beautiful gold demi-hunter watch in a case, and an address handsomely illuminated and framed.

"BOTANICAL MAGAZINE."—The August number contains figures of the following plants:—

Paralujya splendida, t. 7187.—A very handsome tropical climber belonging to the Verbenaceæ. It has large ovate-stalked leaves, and terminal many flowered cymes of irregularly 4-lobed funnel-shaped white flowers, from which the four stamens project. It is a native of North Queensland, and flowered last year for the first time in the Palm-house.

Cypripedium californicum, t. 7188.—A species with plicate leaves, flowers in terminal racemes, each about 1½ inch across, with greenish-yellow segments, and a white bag-shaped lip with a red spot. It flowered in the gardens of W. E. GOMPERTON, Esq.

Pleurothallis immersa, t. 7189.—A purple-flowered species, the scape of which is concealed at its base in the channel formed by the depression in the middle of the upper surface of the leaf.

Synantheris sibirica, t. 7190.—A very curious Indian Aroid with a single pedately cut leaf, the lobes of which are irregularly pinnately divided. The spathe is relatively short, widely tubular, acute, cream-coloured with green spots, the spadix with female flowers beneath, separated from the males by a single ring of neuter flowers, the apex of the spadix prolonged into a long slender cylindrical cream-coloured appendix destitute of flowers. Kew.

Rehmannia rupestris, t. 7191.—A trailing herbaceous perennial covered with thick white hair; leaves stalked, ovate; flowers sessile, 2½ inches long, with a short bell-shaped toothed calyx, and a long curved, tubular, pale yellow corolla, expanding at the top into a somewhat irregularly 5-lobed limb. It is a Scrophulariaceous plant introduced from the Mountains of Hupeh, Central China, by Dr. HENRY. Flowered at Kew.

HOME CORRESPONDENCE.

MORELLO CHERRIES.—Some of your correspondents, when giving particulars of hardy fruit crops in their districts, remarked upon the failure of their Morello Cherries, which they attributed in part to attacks of black-fly. I infer they cultivate them on conventional lines, upon north-aspect walls, a system which, however well it may answer in giving crops in a general way, is not of necessity the only one suitable to this invaluable fruit. A system which, in all probability, has become established owing to the fact that no other kinds of hardy fruit will succeed so well against such sunless cold walls. Though under proper culture very fine fruit of the Morello Cherry can be and is generally grown upon such aspects, it must not be forgotten that severe late frosts and attacks of aphid play more powerfully upon trees growing in such a position than upon others enjoying sunshine in larger degree. Though such adverse cropping conditions as I have noted above were given in a garden of repute little more than a mile distant from my own garden, I am bound to confess I never had a heavier or finer crop than this season. My trees, however, enjoy a sunny position upon an east wall. Black-fly attacked the tips of the shoots certainly in the month of June, and I had them dipped in tobacco-water, with the result that they disappeared, and I was no longer troubled by them. So much for the two crops, growing on dissimilar aspects in the same neighbourhood. What I am more anxious to advance, however, is the suggestion that all but certain cropping fruit could be made much more useful by varying the place of culture, *ie.*, planting the necessary quantities against north-aspect walls as before, also a fair number of trees upon east or west-aspect walls. My contention, as regards the latter, is that they crop more certainly and give supplies of ripe fruit for kitchen use, or bottling, some considerable time before those grown against shady walls are ready. I have thought it strange gardeners have not more generally planted standard Morellos. Not only are they most ornamental when in bloom, but most constant in cropping, and though in the ordinary way the fruits are small, even this may be readily remedied by somewhat severe pruning or thinning-out the young shoots each season. Moreover, standard Morellos commence fruiting freely the second year after planting, giving abundance of culinary fruit at a most acceptable season. Villa gardens having low walls which are not suitable to other fruits, because, whether Pears, Peaches, or Plums, the trees will not bear unlimited restraint, and are prone to advance their growth upwards beyond the limits of such low fences, proving in a very few years how useless all attempts at dwarfing them has been. Against such low fences, whether of brick, or wood, the Morello Cherry will succeed well. At least I have four such dwarf trees against a 6-foot high wall, covering a length of 17 feet, from the ground upwards, which have been planted between fifteen and twenty years. They have never missed fruiting heavily, the large Cherries often from sheer weight of crop hanging upon the grass verge below. From these trees I have just gathered 25 lb. of well ripened fruit; the circumference of their boles is 10 inches, a gravel-walk adjoins the wall and rests upon their roots. My pruning practice has been to lay in all short young shoots, shear back the facing so as to form fruiting spurs, and against the centre of each tree I have thrown an arch from the wall over the walk whereon strong shoots are permitted to grow, which are laden with flowers at one time, and with fruit at another. By contrast with the miserable attempts made at dwarf fruit-tree culture in suburban and other gardens, I maintain Morello Cherry trees stand prominently useful, and worthy the attention of all having low parting fences between limited gardens. Whilst upon this subject, I may add, that horses appear to do little or no injury to Cherry trees growing totally unprotected in orchards, wherein they are constantly turned loose. The wall and archway-grown Morellos I have before referred to are a boundary to my grass-laid orchard, there being no protection given them whatever; besides which I have other standard Cherry trees, including the Morello, whose numerous branches, densely laden with fruit, sweep downwards towards the grass, yet are never interfered with, though occasionally my two last ponies would nibble at the lower branches of the Apple trees, and occasionally rub the lower fruit off whilst grazing beneath the trees. *William Early.*

ENGLISH AND FOREIGN PLUMS.—British fruit growers for market not only seem destitute of resource, such as is necessary to checkmate the success of early sales by foreign co-growers, whereby they may be better enabled to hold their own in the home markets, but also so wedded to old stereotyped practices, they appear incapable of taking advantage of facts but too plainly forced upon them by the same foreign rivals. Unhappily, I could prove my case, and uphold my contention too successfully in regard to the majority, if not all, the different kinds of fruit sent to British markets by these separate and several growers. Suffice it, that I take Plums as the crop which has, hitherto, afforded foreign salesmen the most perfect means whereby to hoodwink British growers. That this is a startling statement I am willing to admit. I, nevertheless, leave it to the reader to determine whether I do not prove it. Our markets are filled with very green Greengages, packed neatly in effective boxes, and are glutted with foreign Plums annually for a month or two before an English Plum finds its way into market, so that the edge of the demand is worn off before British fruit appears. If we admit during the last fortnight the foreign Gages have become passable dessert fruit, it is as much as can be admitted, as previously they were wasted as regards all but cooking purposes. During the second week in July, foreign consignments of ordinary Plums (really very common varieties) reached our shores, and found ready markets, and were sold retail very freely at 4d. per lb. Now these examples were really as hard as bullets, being little if any more advanced than were home crops at the same date; since which our native Plums have been rapidly advancing to maturity; yet, strange as it may appear, the last market reports up to the time I write make no note of the receipt of home-grown consignments. Has the British Plum-grower yet to learn that green Plums—aye, green as the home crops were a fortnight ago—make the best of puddings and pies—that, in fact, for all culinary purposes, they are as good, or superior at such green stage than subsequently, when the foreigner has mulched our markets with inferior hedgerow samples, and carried off another year's harvest. Why do British growers let such crops hang until they are ripe, the trees thoroughly exhausted, and the finest varieties, with best-grown fruits in the world have to go begging for customers at unremunerative prices? to say nothing of the destruction by crushing in transit of over-ripe fruit. Our Plum crops are so excessively heavy it would have been charitable to the trees to have commenced thinning and marketing them two or three weeks ago, to say the very least. Even should these facts fail to rouse growers, is it too late for them to take lessons from, at least, their superiors in strategy—continental consignees? *William Early, August 6.*

WHAT IS A SEEDLING PLANT?—Referring to your article on this subject, and looking at the question from a florist's point of view, it is, so far as my observation goes, customary with us, in Scotland, to speak of new varieties of florist's flowers as "seedlings" until they are catalogued and offered for sale. The variety, say it is a Pansy, may be one, two, or three years old before being sent out, and, during that time, it may receive certificates as a seedling; but, as soon as it is sent out, no more honours of that description are awarded to it. Perhaps some of your readers may be able to suggest a better definition of the term seedling; yet, I think the above is capable of practical application without much friction. *M. C., Rothsay, N.B.*

FORCING LILUM CANDIDUM.—Where white flowers are in great demand in the early part of the year, few plants for forcing better repay the trouble incurred than this old favourite. If it is desirable to force them regularly, it is best to have two sets of bulbs, forcing each set alternate years. I find that the same bulbs do not give such good results if forced annually. The best time to commence is as soon as the stems of those planted out begin to decay. Take the bulbs up carefully, shake all the soil from the roots, select the largest, and remove any small bulbs that may be attached to them. The pots for growing them in should not be less than 9 inches; plant in good turfy loam, with one-third part well-decayed manure, or spent Mushroom bed, a liberal amount of sand being added. Pot firmly, placing the bulb 1 inch beneath the surface, watering well to settle the soil about them. They may then be plunged in coal-ashes, or in the ground, until required for forcing. If it is desirable to get them in flower by Easter, a commencement

should be made early in November, by placing them in a house or frame with a slight warmth, giving them a good watering if at all dry; let them remain until showing signs of growth, hard forcing in the early stages not being conducive to strong growth and fine heads of bloom. When growth has fairly commenced, a light position in an early vinery is a good place for them, the increasing heat of which suits them admirably, and they may receive supplies of weak manure-water at each alternate watering, increasing in strength as the flower stems advance, and supporting them with sticks. By the end of February they will be showing buds; a sharp look-out being kept for green-fly, which will effect a lodgment among the young buds, and quickly spoil the prospects of flowers. Dust with tobacco-powder. They will now require large supplies of water. As soon as the flowers begin to expand, place them in the conservatory or greenhouse. It is best to remove the anthers as the flowers open, because the yellow pollen soon spoils their appearance. After flowering they may be hardened off in a cold frame, or warm corner, finally planting them out-of-doors. *W. H. Stephens, The Gardens, Prescott House, Stourbridge.*

MELONS.—I only grow four kinds, which I think are first-class to keep up a succession through the season. All had the same treatment, the seeds being sown the same day—February 16, 1891. High Cross Hybrid ripened eighteen days earlier than the other three kinds, and I think it the best and earliest Melon that is grown for first crop. I have grown it for five or six years. It is a round netted fruit, with fine green flesh, good flavour, and free setter. The next to ripen was Sion House, oblong, a netted yellow skin, and scarlet flesh—a first-rate Melon. The Countess was ready a few days later. The fruit of this variety is beautifully netted, the flesh white, a free setter, and good Melon. Monarch, the latest of the four, keeps a long time in good condition after it is cut. It is a netted oval fruit, green flesh, exquisite flavour, and free setter. All the above Melons were grown in 10-inch pots in good turfy loam, with a small quantity of fresh horse-droppings, potted very freely, then plunged in a bed of leaves. *W. Smythe, The Gardens, Basing Park.*

POTATOS IN LANCASHIRE.—Both early and late Potatoes were cut to the ground by the frosts of May 16 and 17, when 13° was registered on the last date. Growth recommenced quickly, and excellent crops of early Ashleaf have been dug, very clear, and free from disease. A patch of Snowflake has been lifted to-day (August 10), of good-sized tubers, and not a diseased one to be seen. Late kinds look healthy, and promise well. *Wm. Fox, Holker Gardens.*

THE POTATO CROP.—If we get no unusual attack of the disease, there will be this year an enormous crop of Potatoes. That qualifying "if" may seem a large one after some previous years' experience, but, generally, I do not think it is in any degree large this year. How rarely has it been the case that we have had such healthy leafage on the Potato plant on the 8th of August as we see this year! A day or two since I looked over the Potatoes at Chiswick. Remembering the stormy nature of the weather we have recently passed through, and how in past years such weather would have generated the disease rapidly, I could not but think that, for the time of year, the crop there never looked better, even the very earliest varieties showing freshness and vigour of an unusual kind. Only in one place, evidently where one of the recent heavy storms had led to a temporary flooding of the row, was there any evidence of decay in the plants. Of course we may yet have the disease badly, because there is ample time, but all recent experience has shown that, be the attack ever so virulent, only a very small proportion of the tubers are now affected, so that comparatively little harm is done to the general crop. With the weather keeping finer and warmer the tuber development now made every week is wonderful, indeed August is the great month for tuber making, and every day both helps to increase the tuber bulk and minimise the effects of the disease should it appear. Sulphate of copper is being employed at Chiswick to prevent disease attacks, if possible. In one of the Tomato-houses, disease is very evident in the plants, but dressings of this assumed fungicide fail to check or cure it; that does not look hopeful for the Potato crop, especially that every shower and storm must wash the plants clean of the powder. But the question which naturally arises in relation to the non-appearance of the Potato disease so far is, does it come from the

exceeding severity of last winter, which helped to destroy the spores, or is it failing to find in the weather those atmospheric conditions which usually favour its development? So far as prices are concerned, Potatoes are plentiful already at £1 per ton. Some growers think that better prices will rule later, because the corn harvest may be but a moderate one, and the foreign crop is less than usual. So far as present appearances go, the home corn crop will not be a moderate, but rather a plentiful one, only late in being harvested. Even if we have some shortcomings, it seems evident that these will be more than neutralised by the abundant Potato crop, so that our main articles of food seem certain to be both plentiful and cheap this season. On the whole, the food outlook is an excellent one. A. D.

SEXUALITY OF ACERS.—In the *Gardeners' Chronicle* for July 4, 1891, p. 11, you illustrate male and hermaphrodite *Acer Vilmorini*. Judging by our Maples, you will not find the flowers functionally hermaphrodite. The stamens never mature in the fertile flower. The anthers are pollenless and functionless, and do not thicken it worth while to produce a filament. This is our experience, and it looks like it there. The plant is monoecious, not polygamous. *Thos. Meehan*.

THE COPYRIGHT VALUES OF SOME GARDENING BOOKS.—It is not often that the public have opportunities of judging the copyright values of well-known gardening books. The bankruptcy of the old-established firm of Groombridge & Sons, resulting in a general "selling-up" at Puttick & Simpson's, on Tuesday, has resulted in one of these opportunities, and readers of the *Gardeners' Chronicle* will be especially interested in the under-mentioned prices. The results will, at first sight, appear insignificant, especially when it is remembered that these books have run into many and large editions; but it is precisely this fact which had a very appreciable influence in gauging the prices. They are not necessarily behindhand in their information, or antiquated in their ideas. But gardening is essentially a progressive science, and the general public hesitates to buy a book unless it has the imprint of to-day upon it—but it must be candidly admitted that the preference is not at all uniformly wise. In the case of the numerous books of the late Shirley Hibberd, it will be generally admitted that there is, to use a colloquialism, "plenty of life in them yet." They are charmingly written, for Shirley Hibberd's style and manner of imparting information on the most recondite subjects had a brilliancy and perspicacity entirely peculiar to himself. To come, however, to the books themselves: Fifteen were catalogued under Shirley Hibberd's name, and the one most highly appraised was *The Amateur's Rose Book*, the copyright of which (with stereo plates and wood blocks) sold for £22; at which sum *The Amateur's Flower Garden* was also disposed of, but the latter lot included also about 500 copies "in quires." The copyright of *The Amateur's Greenhouse* (with stereo plates and blocks) went for £20; and *The Amateur's Kitchen Garden* (including 1666 coloured plates), for £15. All these are nominally 6s. books, the last one being illustrated, as will be inferred, in colours. The copyright of *Brambles and Bay Leaves* (with eight wood blocks) went for 20s.; whilst *Garden Favourites* did not secure a bid. Better, but only comparatively so, was *The Fern Garden*, which went for £9, the purchaser securing not only the copyright, 151 plates, 8 colour blocks, and twenty wood-blocks, but about 1000 copies in quires, and an assortment of 250 coloured plates; *Field Flowers*, with all the stereo plates, colour blocks, 200 copies in quires, and 2950 various coloured plates, realised £10, at which sum was also sold the *Rustic Adornments for Homes of Taste*, and a large number of coloured plates. The copyright and wood-blocks of the *Book of the Aquarium and Water Cabinet* fetched £8; the same of *Profitable Gardening*, £8 10s.; the copyright, blocks, and 590 coloured plates of *The Ivy* sold for £4 10s.; of the *Sea-weed Collector*, £7; of the *Town Garden*, £1; and of the *Greenhouse and Garden Frame*, £6 15s. Besides gardening books by Shirley Hibberd, there were two 1s. pamphlets by Mr. J. Cuthill, one on *Market Gardening*, £2, and a *Manual on the Cultivation of the Mushroom*, &c., £3 5s.; these prices including not only copyright, but blocks, plates, and much more than a sufficient number of printed copies to cover the outlay. The copyright and so forth, with 2171 numbers and 400 double numbers, and over 1000 coloured plates of *Greenhouse Favourites*, sold for £17; the copyright, &c., with fifty copies in quires of the Rev. J. S. Henslow's *Dictionary of Botanical*

Terms, went for £6, which was 20s. more than was given for J. R. Mollison's *Window Gardener* (with 300 copies in quires); H. J. Slack's *Marvels of Pond Life*, copyright, blocks, 200 copies in quires, and 2300 coloured plates, sold for £10; and Sara Wood's *The Dwellers in our Gardens*, £8 10s. *W. Roberts*.

NOVELTIES.

The tacks, of which we give an illustration, are of steel, well and uniformly made, sharply pointed, and,

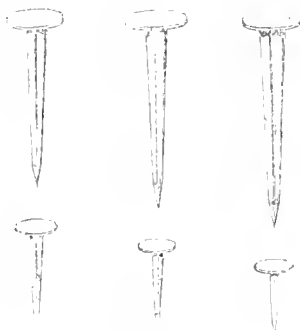


FIG. 26.—GROOVED TACKS.

owing to their grooved sides, they "hold well." They may be had from Messrs. Nettlefold & Sons, 54, High Holborn.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 11.—The ordinarily gloomy-looking Drill Hall was lighted up on this occasion with a large and miscellaneous assemblage of plants, exhibited for the judgment of the several committees and for the admiration of the visitors. The chief things exhibited were the Carnations, of which we give a special note, a few Orchids and herbaceous plants, and a fine collection of Peaches, Apples, Gooseberries, Plums, &c., which are duly noted in the following columns. The Floral, Orchid, and Fruit Committees had plenty of work before them, the last-named making an endeavour to settle the knotty points connected with the selection of the best varieties to recommend for cultivation in various districts for cottagers and small growers. As the committee consists principally of trade growers and professional gardeners, with a few amateurs, it was evidently difficult for them to realise adequately the requirements of cottagers. The assistance in various counties of the local clergy interested in horticulture might be invoked with benefit. The Scientific Committee failed to furnish a "quorum," and no meeting was in consequence held.

Mr. Hudson gave an excellent lecture on "Stove Plants" at the 3 o'clock meeting, but for the majority of people its excellence will have to be taken for granted till they see it in print. The acoustic properties of the hall are bad enough in all conscience, and it does not make matters any better to place the audience under the gallery where the speaker ought to be, and *vice versa*: neither does it facilitate the comfort of the reader, nor help his auditors, to deprive the reader of a reading-desk. Under present circumstances the best place to hear would probably be under the table, supposing the non-conducting cloth were removed. But as such a position would hardly be decorous, we trust that speakers who wish it, may be provided with a desk whereon to lay their manuscript. This would serve as a useful reminder to the speaker to lift up his head, while he would not be compelled to address his remarks to the table. In the course of his observations, Mr. Hudson commented on the improvements manifest during the last quarter of a century, and dealt with many of the leading decorative plants such as Palms, Crotons, Dipladenias, and many others. In connection with this subject, he mentioned the history of *D. Brearleyana*, raised by a mechanic and eventually purchased for £150 by a London nurseryman. Mr. Bunyard, Mr. Wythes, and the chairman, Mr. Douglas, contributed to the discussion.

An effective group of *Campanula pyramidalis*, white and blue, and *C. p. compacta*, surrounded by

C. carpatica, was exhibited by Mr. G. Wythes, gr. to the Duke of Northumberland, Syon House. The plants were in 7-inch pots, and full of flower; this gained a Silver Banksian Medal. Mr. Wythes also showed three large white flowers of *Cereus hexagonus*.

A Silver Banksian Medal was awarded to Mr. C. F. Bause, Morland Nursery, South Norwood, S.E., for a beautiful group of *Caladiums*, two new ones gaining First-class Certificates, viz., *Louis Van Houtte*, a rich bronze-crimson, and *M. Léon Say*, metallic-crimson; the varieties *Duchesse de Montemart*, cream with green veins; *Raymond Lemoine*, crimson-cream and cream border; and *Madame Imbert Koechlin*, yellow with crimson spots, were conspicuous.

Messrs. Pitcher & Manda, United States Nursery, Hextable, had a double white *Achillea*, *The Pearl*, which will be useful for wreaths.

A silver-gilt Flora Medal was awarded to Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, for a collection of well-coloured *Crotons* and dwarf Ferns, *Sunset*, *Magnificent*, *Bergmanni*, and *Comte de Germiny* were some of the best *Crotons*. Mr. May also showed a basket of *Bouvardia Purity*, which has already been certificated, the flowers are waxy-white, large, and stand erect and compact. A clear pink *Bouvardia*, *Mrs. Robert Green*, was also in this exhibit.

Messrs. James Veitch & Son, Chelsea, obtained a silver Banksian Medal for a collection of plants for table decoration, which consisted of small Palms, *Azaleas*, *Sarracenia*, *Nepenthes*, *Yucca filamentosa variegata*, *Y. f. aurea variegata*, Ferns in variety, &c.

Orchid Committee.

Present: Mr. James O'Brien in the chair; Messrs. H. M. Pollett, H. Ballantine, E. Hill, H. Williams, Jas. Douglas, A. H. Smee, Lewis Castle, and Dr. M. T. Masters, F.R.S.

Messrs. Jas. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, exhibited two hybrid *Cypripediums* in *Cypripedium Corningianum* × (*C. superbiens*, seed-bearer, and *C. Philippinense*, whose features somewhat resemble those of the favourite *C. Morganæ* ×, but with long and densely spotted petals; and *C. macrochilum* × (*C. longifolium*, seed-bearer, and *C. (mopedium) Lindenii*, male). The result has been very extraordinary in several ways, and notably in the crossing with a species in which the lip is very rudimentary, resulting in the lip in the progeny being almost twice the length of the seed bearing one—the only one of the two which can be said to have a pouch or lip. The plant, which had the usual bright green leaves of the *Selenipedium* section, had a four-flowered scape equal in size to those of *C. caudatum*, and much the same in colour as *C. caudatum Wallisii*. The petals are after the manner of *C. caudatum*, but as seen in the young specimen exhibited, not so long. The peculiar feature is the long and beautifully-marked labellum. Messrs. Veitch also exhibited their *C. Cleoine* ×, whose flowers were something like those of *C. Sedeni caudulum*, but smaller.

Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited *Dendrobium Statterianum* (not to be confounded with *D. Phalenopsis Statterianum*), a supposed hybrid probably between *D. crystallinum* and *D. Bensoniæ*. The flowers were something like, but richer in colour than those of *D. crystallinum*, and the rich yellow of the lip seemed to tell of *D. Bensoniæ*. The absence of nodes on the pseudobulbs prevented its being considered a form of *D. Boxallii* (a reputed cross between *D. crystallinum* and *D. crassinode*). *D. Statterianum* is a pretty and showy variety, and is stated to last in flower for nearly two months. Mr. Statter also exhibited a grand form of *Bollea celestis*, *Phajus Humboldtii rubescens*, a fine spike of *Lælia elegans Turnerii*, and a spike of a good variety of *Cattleya velutina*.

C. J. Lucas, Esq., Warnham Court, Horsham, sent a well-grown plant of *Angraecum Ellisii*, with twenty-one flowers; a plant in flower of *Thrixpernum Berkeleyi*, and a cut spike of *Ceologyne pandurata*.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), showed a plant of *Lycaste tetragona*, and one of *Dendrobium longicornu*.

Messrs. Seeger & Tropp, 112, Lordship Lane, East Dulwich, exhibited *Cattleya Gaskelliana* var. *speciosa*, a variety with well-formed flowers. Sepals and petals pure white, lip edged with white, and having a bright purplish-crimson blotch, with yellow at the base.

Messrs. Charlesworth, Shuttleworth & Co., of Park Road, Clapham, and Heaton, Bradford, showed

the curious little brown-and-yellow *Odontoglossum Hennisii*, described in the *Gardeners' Chronicle*, Aug. 8, p. 158. F. M. Barton, Esq., Highfield, Gainsborough, sent a hybrid *Cypripedium* (supposed parentage *C. barbatum* and *C. venustum* var.), but exhibiting very little change from one of the poorer forms of *C. barbatum*; and from the gardens of His Grace the Duke of Devonshire, Mr. Owen Thomas came other examples of his fine culture of *Disa grandiflora*, to which a medal was awarded at the last meeting. The flowers were very large and fine in colour, one spike bearing eleven flowers. A special vote of thanks was passed with regard to this exhibit.

Fruit Committee.

Messrs. J. Veitch & Sons, Chelsea, sent seventy-nine dishes of ripe Gooseberries, some of the best being Warrington, Laccashire Lad, Ironmonger, Highlander, Pretty Boy, and Keen's Seedling. There were twenty-four dishes of early Apples, the best being Mr. Gladstone, Red Astrachan, and Lord Grosvenor; four dishes of Cherries, four of Pears, including excellent Citron des Carmes; also seven dishes of red, white, and black Currants. The collection was given a vote of thanks, though a Silver Medal would have been unanimously awarded, had not this been given at the last meeting for a collection of Gooseberries.

Two nice boxes of Cucumbers, named Matchless, from Mr. S. Mortimer, Swiss Nursery, Farnham, were awarded a First-class Certificate; they were of a good colour, with scarcely any neck, and not too large, with very few spines; this should make an excellent exhibition Cucumber.

A Bronze Banksian was awarded to E. M. Nelson, Esq., Hanger Hill, Ealing, for twenty-two dishes of Gooseberries and one dish of Early Prolific Plums, the best of the Gooseberries being Smiling Beauty and Lady Leicester. A Cultural Commendation was also awarded to a fine dish of Humboldt Nectarines, from the same exhibitor. Mr. Chadwick, the gardener at Hanger Hill, grew the Plums on walls.

A nice dish of an early yellow Plum, named St. Etienne, was contributed from the Society's Gardens, Chiswick, and received an Award of Merit; this Plum should make a good companion to Early Rivers.

Messrs. Burton & Sons, The Peacheries, Bexley, sent eight large boxes of Peaches and Nectarines, containing about 250 fruits of great excellence, some having been grown on standards. The Peaches were Dymond, Sea Eagle, Royal George, and Alexander Noblesse. The Nectarines shown were Elruge, Pine-apple, and Humboldt, the two latter of a splendid colour, this collection being awarded a Silver Banksian Medal.

Mr. C. Ross, Welford Park, Newbury, sent a large Melon, named Meritorious, of good shape, and with a thick scarlet flesh and pale green lining near the outside, it was good flavoured, considering the small quantity of sunshine of late; this received an Award of Merit. Melons were also sent from Syon House, and Mr. Cannell sent a new one named Eynsford Gem, but it was past it best.

Grapes were sent from Mr. Maher, Yattendon Court, Newbury, a new seedling, being a cross between Hamburg and Alicante, but not in good condition as to colour or ripeness. A bunch of Hamburg was also sent for comparison.

New Peas were sent called Leeton's Excelsior, a cross between Duke of Albany and Veitch's Autocrat, but these were too far past their best for favourable comparison. H. Balderson, Esq., Comos Hall, Hemel Hempstead, sent a new Pea, a cross between Veitch's Perfection and Ne Plus Ultra, an improvement in size of pod and Peas, with the deep green colour of the latter, with good flavour. This the committee desired to be sent to Chiswick for treatment as to its cropping qualities.

The Carnation Show.

The Supplementary Carnation Show, which the prize given by Martin R. Smith, Esq., for Border Carnations occasioned, was much more extensive than was to be expected from the lateness of the season, all classes of the Carnation being well represented. The conditions under which the flowers were shown appeared in full last week; so far as could be perceived these conditions were observed, and Mr. Smith must be congratulated upon the success of his experiment.

In the class for the best border variety of self-coloured Carnation, not fewer than twelve trusses, the 1st prize was awarded to Mr. W. H. Divers, The Gardens, Ketton Hall, Stamford, for Ketton Rose, bright rosy-pink, with good shell-shaped petals, a little inclined to cup, not without the suspicion of a

tendency to burst its calyx; 2nd, Mr. C. Blick, gr. to M. R. Smith, Esq., The Warren, Hayes Common, Kent, with Alice Newman, a large, dull deep scarlet flower, apparently a very strong grower, of fairly dwarf habit; 3rd, Mr. A. Searing, The Gardens, Oak Lodge, Sevenoaks, with an unnamed white Self, with a slight tinge of sulphur in the centre, apparently also a little inclined to split its calyx. Other flowers exhibited in this class were Gloire de Nancy, white; and Mrs. Reynolds Hole, from Mr. E. C. Goble, Walcot nursery, Ryde, Isle of Wight, both with split pods; Carolus, a pale form of Mrs. Reynolds Hole, of a soft salmon colour, but not perfect in the calyx; and Cotin, dull orange crimson, a strong grower, large and rough as shown, from Mr. A. Herrington, The Gardens, Shrubland Park, Needham Market.

Mr. G. H. Sage, The Gardens, Ham House, Richmond, exhibited a pleasing pink self, a strong grower, but a little rough. Mr. John Walker, nurseryman, Thame, had a deep pink self, flushed in the centre with bright rose, also of vigorous growth. Mr. Shoesmith, gr. to Mrs. Hodgson, Shirley Cottage, Croydon, showed a deep pink self, flushed with pale rose, the flowers somewhat coarse. Mr. J. Douglas, gr. to Mrs. Whitbourn, Great Gearies, Ilford, had a soft pink self, delicate in colour, good petal, and a strong grower. From Mr. William Robinson, Gravetye Manor, East Grinstead, came Gravetye Rose, bright rose, the petals inclined to cup, even in what appeared to be young flowers.

The class for twelve self-coloured border Carnations, not less than six trusses of each variety, brought a very fine collection from Mr. C. Blick, showing varied colours, good quality of bloom and sturdy growth, which was awarded the 1st prize. It consisted of Clovis, bright crimson, fine in petal; Lady Gwendoline, deep rosy-scarlet; Etna, bright scarlet; Mrs. Muir, white; Dr. Hodd, bright purple; Iona, sulphur; Dainty Dick, soft pink; Maroon, bright crimson shaded with maroon; Roma, bright rose; Marion, maroon-crimson; Louisa Jameson, rosy-scarlet, very fine; Albatross, pure white, small, good petal; and Mary Morris, pink. The foregoing showed the effects of the weather less than any other collection, and was characterised by better quality of bloom throughout. Mr. A. Herrington came 2nd, having Ovid, pink; Sport, of a port wine colour; Comtesse de Paris, blush; M. Janssen, maroon; Carolus; Jean Armstrong, deep pink; Madame de Lafausse, white with sulphur centre; Merchant of Venice, rosy-scarlet; and Colin. The 3rd prize was awarded to Mr. John Walker, nurseryman, Thame, who had unnamed seedlings of various colours, generally small and compact in flower.

Mr. C. Blick also gained the 1st prize in the class for eighteen varieties of flake, bizarre, or fancy Carnations, staging a fine lot of flowers, including Sir Beauchamp Seymour, yellow, flaked with salmon crimson; Lady Hermione, a rose-edged Picotee, much barred; Lucretia, blush, flaked with purple maroon; Phoebe, crimson bizarre; Lady Grimston, white, having a very light edge of rose; Sir Granville Egerton, scarlet flake, with slight lines of maroon; Miss Constance Graham, scarlet flake, very fine; Alice Ayres, white, with slight flakes of red; Mrs. Faouy Fane, crimson bizarre; Oreg, a purple-edged Picotee; May Queen, rose flake; Archie Dougall, a heavy red-edged Picotee; and some unnamed seedlings. The second prize went to Mr. J. Douglas, with an unnamed collection of bizarre and flaked Carnations with Picotees.

Other contributions of Carnations helped to make up one of the most interesting displays of this popular flower ever before seen at a meeting of the Royal Horticultural Society. Mr. C. Turner sent from his collection at Slough, a number of grand plants in pots, of named varieties; boxes of cut blooms of border varieties, and stands of exhibition blooms; a highly meritorious contribution. There were six plants of Romulus, yellow ground, heavily flaked with deep rose and flushed with mauve (Award of Merit); four plants of King of Scarlets, brilliant scarlet, large, and very handsome (Award of Merit); six plants of Lord Randlesham, yellow ground, suffused pale red and flaked with dull slaty-purple; six plants of Victory, yellow ground, heavily flaked with pale scarlet and flushed with crimson (Award of Merit); six plants of Ruby, very rich bright ruby-rose, extra fine (Award of Merit); twelve plants and two boxes of cut-blooms of Queen of Bedders, deep dull scarlet, dwarf erect growth, very fine in the flower and remarkably strong grower (Award of Merit); and three blooms each of Rose Wynne, bright maroon self; Salamander, a salmon-pink self; Rose Unique,

very soft deep pink, extra fine; Lady Walker, buff-yellow; Golden Fleece, pale yellow; Duchess of Sutherland, heavy rose edge Picotee; Mrs. Harford, medium rose-edge, fine in petal; Lady Emily Van de Weyer, light rose edge Picotee; Purity, light red edge Picotee, a large flower of fine quality, massive in petal; Edith M. Wynne, yellow ground edged with maroon and crimson and slight stripes of scarlet (Award of Merit); Countess of Jersey, bright yellow, edged with rose—very fine (Award of Merit); Madeline, a beautiful light rose-edged Picotee (Award of Merit); Mrs. Walford, yellow ground, with slight lines of rosy-purple at the points of the petals (Award of Merit); Old Coin, yellow, delicately flaked with salmon and crimson; and Lady Mary Currie, rose flake—a fine variety, but with too much colour on the petals. Mr. J. Douglas staged two of his fine new yellow grounds, viz., Mrs. R. Sydenham, pale yellow, edged with rose—a beautiful flower of fine quality (Award of Merit); and Lily Henwood, heavily edged and flaked with bright purplish rose—very fine.

From the Society's garden at Chiswick came a very interesting collection, consisting of The Moor, deep bright crimson; Guiding Star, scarlet; Fireball, bright crimson; Theodore, heliotrope colour, highly fragrant, distinct, and novel; Chiswick Red, very bright; C. J. R. Allinson, deep pink; Dante, scarlet-flake; Madame Van Houthe, yellow ground; Sam Toplis, scarlet-flake; Alida, a very fine fleshy pink self; Mrs. Reynolds Hole, Van Dyck, rose-flaked with slaty-blue; Caractacus, crimson-bizarre; Romeo, purple-edged Picotee; J. B. Bryant, red-edged Picotee; Redbraes, purple-edged; Brockhans, yellow ground, heavily flaked with slate; Snowdrift, white; Caledonia, purple; and Edith, pale ground, flaked with scarlet.

Mr. E. C. Goble staged twelve bunches of Carnations, including Lady Sutton, a bright buff self; Boulanger, deep bright scarlet; Mrs. Frank Watts, white; Germania, Mrs. Reynolds Hole; Rosy Morn, deep bright rose; James Bennett, yellow ground, edged rosy-purple; Alice Ayres, &c.

Mr. Martin Rowan, Manor Street, Clapham, sent six boxes of town-grown Carnations and Picotees, showing how well they can be cultivated within easy distance of the City. The collection was awarded a Silver Flora Medal.

From Mr. F. Bull, florist, Wormingham, Colchester, came twelve blooms of a very bright yellow ground, a seedling from Pride of Penhurst. Messrs. James Veitch & Sons, Exotic Nurseries, Chelsea, had four large boxes of cut blooms, including some very fine selfs, such as Germania, Florence, John Barnet, deep purple; Rose Celestial, rose; The Bride Brilliant, bright scarlet; Dr. Parke, deep pink; Raby Castle and Charles I., yellow ground, heavily edged and flaked pale rose; Lothair, delicate pink; Mrs. Combie, yellow, flaked with rose; and William Toby, maroon self.

Other florists' flowers comprised superb lemon and orange African and striped French Marigolds from Messrs. Dobbie & Co., Rothesay; also selected garden Marigolds, Violas, in bunches, and fine fancy Pansies from the same. From Messrs. Paul & Son, Cheshunt, came a collection of hardy flowers, Cheshunt Scarlet Bedder Rose, shaded scarlet; Tea, Kaiserin Frederick, a very pretty pale variety; H.P.'s, T. B. Haywood, deep crimson; Charles Gater, bright crimson, fine and full (Award of Merit); Dowager Duchess of Marlborough, pale rose; and Bruce Findlay, bright shaded-crimson. Messrs. J. Peed & Son, Rorpell Park Nurseries, Streatham, had a large collection of blooms of handsome Gloxinias. Messrs. Hurst & Son, seed merchants, 152, Houndsditch, sent some double varieties of Chrysanthemum carinatum. Mr. Arthur Rawlings, Florist, Romford, had a stand of new Dahlias, among them, Mrs. McIntosh, deep yellow, with cerise reverse, a very promising flower, which the Floral Committee desired to see again; George Hurst, bright crimson-scarlet; and Mrs. Ocock, yellow, tipped with pale brownish-red and mauve; and a stand of twelve excellent show Dahlias. Messrs. Henry Cannell & Sons, nurserymen, Swanley, had a collection of Cactus and decorative Dahlias, including Oban, salmon, flushed with mauve, which the committee wished to see again; Wm. Pearce, yellow; Beauty of Arundel, bright crimson and purple; Panthea, Duke of Clarence, Black Prince, Sydney Hollings, &c.

ORCHID COMMITTEE AWARDS.

First-class Certificate

To *Cypripedium Corningianum*, from Messrs. James Veitch & Son.
To *Cypripedium macrochilum*, from Messrs. James Veitch & Son.

Awards of Merit.

To Dendrobium Statterianum, from Thos. Statter, Esq.
To Cattleya Gaskelliana speciosa, from Messrs. Seeger & Tropp.

Botanical Certificate.

To Odontoglossum Heaninii, from Messrs. Charlesworth, Shuttleworth & Co.

Cultural Commendation.

To Angraecum Ellisii, from C. J. Lucas, Esq.

Special Vote of Thanks.

To Mr. O. Thomas, for group of Disa uniflora (grandiflora).

FLORAL COMMITTEE.

Awards of Merit.

To Carnation Pride of Sevenoaks, from Mr. W. A. Searing.
To Carnation Ketton Rose, from Mr. W. H. Dovers.
To Carnation Mrs. R. Sydenham, from Mr. J. Douglas.
To Caladium M. Leon Say, from Mr. F. Bause.
To Caladium Louis A. Van Houette, from Mr. F. Bause.
To Rose Charles Gater, from Messrs. Paul & Sons.
To Carnations Romulus, King of Scarlets, Victory, Ruby, Queen of Bidders, Edith M. Wynne, Countess of Jersey, Mrs. Walford, Madeline, from Mr. C. Turner.

MEDALS.

Silver gilt Flora.

To H. B. May, for group of foliage plants.

Silver gilt Banksian.

To J. Veitch & Sons, for group of foliage plants.
To F. Bause, for group of Caladiums.

Silver Flora.

To Mr. Rowan, for group of Picotees.

Silver Banksian.

To Mr. G. Wythes, for group of Campanulas.
To C. Turner, for group of Carnations.
To Messrs. Dobbie & Co., for group of Violas, &c.

Bronze Banksian.

To Paul & Son, for group of herbaceous plants.

FRUIT COMMITTEE.

First-class Certificate.

To Cucumber Matchless, from Mr. A. Mortimer, Swiss Nursery, Rowledge.

Awards of Merit.

To Seedling Melon Meritorious, from Mr. Charles Ross, Welford Park.
To Plum St. Etienne, from the Royal Horticultural Society's Gardens.

MEDALS.

Silver Banksian.

To Thomas Burton & Sons, Bexley, for Collection of Peaches and Nectarines.

Bronze Banksian.

To E. Chadwick, gr. to E. W. Nelson, Esq., for Collection of Fruit.

ST. NEOTS HORTICULTURAL.

The twenty-seventh exhibition of this Society took place in Priory Park on August 3, and was in all respects a good one for the district. St. Neots being in the centre of a great market gardening community, prizes are offered for farm and market garden produce. A few classes for cut flowers are open to all comers. In the class for twenty-four Roses, E. B. Lindsell, Esq., Hitchin, who has been very successful this season, was 1st, with a very fine lot of blooms.

In the class for twenty-four bunches of flowers, Messrs. Wood & Hunt, Girtford, were 1st, with some very fine hardy herbaceous flowers, making an imposing display. Messrs. Wood & Hunt were also 1st with twelve bunches of hardy herbaceous flowers, staging another fine lot.

In the member's class for twelve cut Roses, Mr. Lindsell was again 1st, with good blooms. Mr. Lindsell was also 1st with twelve blooms of tea-scented varieties. Other cut-flowers included fine Stocks, charming bunches of hardy flowers and half-hardy annuals, Zinnias, Phloxes, &c.

In the plant classes, Mr. Redman carried off most of the 1st prizes. In the class for four tuberous-rooted Begonias, Mr. R. J. Towgood, St. Neots, was 1st; tricolor zonal Pelargoniums are well grown at St. Neots, and it is stated that they are becoming much more popular.

Fruit was somewhat sparingly shown; but vegetables were a great feature.

ATHERSTONE HORTICULTURAL.

MONDAY, August 3.—The annual exhibition of the above Society was held in the Merevale Park. The show itself was one of the best the Society has ever held; the number of entries exceeded that in former years, and the quality of the exhibits was marvellously good considering the season. Especially was this the case in the cottagers' classes, in which there is generally fierce competition. In the open classes some grand exhibits were to be seen. The large collections arranged for conservatory effect were again a centre of attraction. The 1st prize of £3 and a silver medal was won

by Mr. R. Allum, of Tamworth. There was a number of very choice stove and greenhouse plants, the principal prize-takers being Mr. Allum, Mr. H. Townshend, Mrs. Dugdale, Mr. Alderman Kenrick, Mr. R. Stafford, Mr. H. Cunliffe Shaw, Canon Thornton, Mr. G. Moore, &c. In the classes for cut flowers, there were some beautiful Roses shown by Messrs. Perkins Brothers, of Coventry; and Mr. Woodford and Mr. Durno, of Atherstone; and many of the other exhibits in this tent were exquisite specimens of floriculture. The fruit was particularly fine and good. The amateur division was well represented, and brought together some remarkably good stuff, worthy in many cases of better prizes.

THE CARNATION AND PICOTEE UNION, OXFORD.

TUESDAY, August 4.—The annual exhibition was held in Mr. Dodwell's garden in the Stanley Road. There was a large display of flowers in the competition classes, and many of the blooms were of fine quality. It was a field day for the southerners, for no flowers were forthcoming from Lancashire, Yorkshire, or the north, for the simple reason that the plants were not in bloom, the long spell of damp, cold, and sunless weather being the cause. The Midland growers were also *hors de combat* from the same cause.

In the class for twelve Carnations, Mr. Read and Mr. M. Rowan were placed equal 1st; and for twelve Picotees, 1st, Mr. Read. For six Carnations, 1st, Mr. J. Kean; and for six Picotees, 1st, Messrs. Thomson & Co. For twelve self and yellow grounds—1st, Mr. M. Rowan; and for six self and yellow grounds—1st, Mr. Nutt.

For six of the Kilcurry yellow-ground flowers—1st, Mr. Read; and for six yellow-ground varieties—1st, Mr. Read. In all these classes from five to seven other prizes were awarded. There were a large number of blooms staged in the single classes, many of them of considerable merit, and all the prizes were awarded.

The premier blooms were—Carnation George Melville, P.F., in Messrs. Rowan's stand of twelve; Picotee Mrs. Payne, medium rose-edge, in Mr. Read's stand of twelve; Self Carnation Germania, in Mr. Nutt's stand of six; and Fancy Picotee Tournament in Mr. Read's stand.

Certificates were awarded to Martin R. Smith, Esq., for border Carnations; Niphetos, white; Mrs. Louisa Jameson, scarlet; Lady Gwendoline, a paler scarlet; Abigail, warm rose colour; Royal George, rosy-purple; and Athene, light purple.

Certificates also were awarded to the following new varieties staged by Mr. Charles Turner:—Dr. Hogg, bright scarlet bizarre; Charles Turner, a grand scarlet flake; Charles Henwood, a fine purple flake; and a S-lf-yellow; Lady Walker, similar in colour to Germania, and not superior to it; Ruby, a superb self, rich rosy-carmine, of fine form, is a beautiful variety, but was not certificated.

The following new Picotees of Mr. Turner also received Certificates:—Madoline, heavy rose edge—a very fine flower; Lady Emily Van de Weyer, a light rose edge, with first-class petal and form; Lord Rendlesham, deep salmon ground, suffused with bright shaded mauve, and should be amongst the Carnations noticed above; Sunset, pale salmon, with bright lilac-tinted red markings; Apollo, creamy-yellow, with faint carmine markings; Romulus, creamy-yellow ground, with rich pale carmine markings—very fine; Mrs. Henwood, a fine flower, with pale yellow ground, and pale scarlet markings.

In addition to the competitive display, Mr. Dodwell's well-grown collection of over 3000 pots of plants were in fine condition; and the number of various coloured self and fancy varieties, so suited to general decorative work, and raised by Mr. Dodwell, were objects of general admiration.

ANNUAL EXCURSION OF THE ROYAL SCOTTISH ARBORICULTURAL.

WEDNESDAY, August 5.—Over fifty members of this Society started from Edinburgh on the annual excursion at 6.55 A.M. Drumlanrig, Terregles and Kirkconnel, Dumfriesshire; Munches, Kirkcudbrightshire; and Castle Kennedy, Wigtonshire, were the principal places on the programme to be visited during the three days' excursion.

The party, on leaving Princes Street Station, included, among others, the President (Professor Bayley Balfour), Messrs. Malcolm Dunn, Jas. Kay,

Jas. Buchanan, Geo. McKinnon, J. Methven, D. Thomson, D. P. Laird, Alex. Milne, A. Kerr, T. Williamson, J. Henderson, and W. Robertson. Abington, on the upper waters of the Clyde, was the destination of the party. The number of members was increased by the time they sat down to breakfast to seventy.

From Abington the party started in vehicles for Drumlanrig, over the Lowther Hills *via* the Pow-trail Glen and the Dalveen Pass, a distance of about 24 miles. The road at first traversed a purely pastoral country, extremely bare of woodland. It would have been more profitably occupied with trees than with the sparse flocks of sheep that grazed on them. "A grand field verily for reforestation," was the general comment. All that was wanted to render the district perfect for the purpose of dairy farming was the shelter of judiciously planned plantations. Soon after passing the boundary of Lanarkshire into Dumfriesshire, the Dalveen Hills, clothed with pasture to the summit, rose into view. The sides of some of the deep gorges were lined with dense masses of *Alnus crispa*, while on the short close-cropped turf appeared wide-spread patches of dwarf Ferns.

The party was met at Carron Bridge, immediately outside the northern boundary of the Drumlanrig policies, by Mr. Fingald, head forester on the Drumlanrig estates, and by Mr. Doughty, who occupies the same position on the estates of the Duke of Buccleuch at Lougholm, and were thence conducted through the northern part of the grounds. They were here struck with the immense extent and the thriving condition of the woodlands, and the varied features of the extensive landscape opened up to view in the progress towards the Castle. In 1883 and 1884 we were informed by Mr. Fingald this portion of the grounds and others which we were unable to visit were devastated by gales, upwards of 300,000 trees having been blown down. The effects at the time must have been extremely depressing to the proprietor as well as to his chief forester, who had planted many of the fallen trees and fostered all during his fifty years of service. The gaps so made were visible only by the presence of wide groups of *Abies Alberti* and other trees of a younger race than those surrounding them which had weathered the storms. These younger trees had been planted immediately the ground was cleared of the wreck, and are now in many cases rivaling those which remain of the older plantations. There are about 11,000 acres of enclosed woods on this property.

Arriving at Drumlanrig Castle, the party was met by Mr. David Thomson, the head gardener, and had its numbers augmented by other prominent members of the Society—Mr. James Watt, Carlisle; Mr. Paton, Kilmarnock; and others having arrived by other routes. At this stage the company were hospitably entertained to lunch by the Duke of Buccleuch, for which his Grace was warmly thanked on the motion of Professor Bayley Balfour.

The remainder of the time here was occupied in noting the larger trees around the flower gardens and the Castle, some of which were among the oldest and the largest on the estate. Among those measured, the largest were—a fine Oak, which girthed 15 feet 4 inches at 5 feet from the ground; some grand Limes, the largest of which girthed 16 feet 1 inch at the same height; a Sycamore, girthed 17 feet 2 inches at the same height, with an elevation of 97 feet; a Silver Fir, 13 feet in girth, and 96 feet high; a Beech, 15 feet 7½ inches in girth, and perfect in symmetry as a park tree; two specimens of *Pinus pinaster*, 60 feet high, and within an inch of being equal in girth to the largest, being 7 feet 8 inches; a Hornbeam girthed 8 feet 2 inches, with spread of top of 74 feet; and a Douglas Fir 8 feet 2 inches girth, and 80 feet high, planted about forty years.

In the flower garden a specimen of *Cupressus Lawsoniana lutea* attracted the attention as being probably the finest in Scotland. It was 10 feet high, and perfect in shape and colour.

The party then drove *via* Thornhill, direct to Dumfries, the head-quarters of the excursion for the first night. On arriving at Dumfries, the company was further increased by the arrival of Dr. Somerville, of Darham, late Lecturer on Forestry in Edinburgh University, and by others from the locality.

The Annual Dinner of the Society took place in the Commercial Hotel at 8.30 P.M., Professor Bayley Balfour presiding, and Mr. John Methven croupier. Further particulars will be given in our next issue.

TRADE NOTICES.

THE ENGLISH FRUIT AND ROSE COMPANY (CRANSTONS).

WHEN this Company was formed, we are told that debentures to the extent of £11,000 were issued, payment of which was guaranteed by the Law Guarantee and Trust Society, which is responsible to the Debenture holders. To secure itself, the Law Guarantee Society agreed with the English Fruit and Rose Company to execute a deed enabling the Society to take possession of the Society's business in certain contingencies. Some of these contingencies have come to pass, and the result is that the Guarantee Society is now in possession of the Company's property. The Guarantee Society, we believe, intend to carry on the business; practically, therefore, there are no assets for general creditors. The Guarantee Society have, as we presume they were entitled to do, laid their hands on everything, and the ordinary creditors are not likely to get anything. Such a state of affairs should put the trade on their guard how they give credit to similar societies.

MESSRS. PETER LAWSON & CO.

At the seventh annual general meeting of the shareholders of Peter Lawson & Co. (Limited), held to-day, the Report as issued to the shareholders was adopted, and a dividend of 7 1/2 per cent. per annum was declared, carrying forward the sum of £2801 4s. 11d.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Table with columns for DISTRICTS, TEMPERATURE (Daily, Accumulated), RAINFALL, and BRIGHT SUN. Rows list districts 1-14 with corresponding weather data.

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending August 8, is furnished from the Meteorological Office:—

"The weather has continued in a very unseasonable condition generally. Frequent falls of rain, occasionally accompanied by thunder and lightning, have occurred in all districts, and the intervals of

clear sky have been (excepting in the extreme S.W.) very brief.

"The temperature has just equalled the mean in 'Scotland, W.', but has again been below it in all other parts of the Kingdom. In 'England, E. and S.', and in the 'Channel Islands,' the deficit has been as much as 4°. The highest of the maxima, which were registered either on the 2nd or 8th, ranged from 73° in 'England, S.', to 67° in 'England, N.W.' and the 'Channel Islands.' The lowest of the minima, which were recorded on somewhat irregular dates, varied from 36° in 'Scotland, E.', and 38° in 'England, S.W.', to 47° in 'Scotland, W.', and 49° in the 'Channel Islands.'

"The rainfall has been considerably in excess of the mean over the Kingdom generally, but in 'Ireland, N.' a slight deficit is shown.

"The bright sunshine has been less than the mean in nearly all districts, the deficit being greatest in the northern and eastern parts of England. The percentage of the possible amount of duration ranged from 54 in the 'Channel Islands,' and 43 in 'England, S.W.', to 37 in 'England, S.', 21 in 'Ireland, N.', and 19 in 'England, N.E.'"

MARKETS.

COVENT GARDEN, August 13.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal sale-men, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

MARKET well supplied, and quotations the same as last week. James Webber, Wholesale Apple Market.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table listing prices for various cut flowers including Asters, French, Carnations, Gladioli, Heliotrope, Lilies, etc.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing prices for various plants in pots including Aralia Sieboldi, Aspidistra, Begonia, etc.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing prices for various vegetables including Artichokes, Beans, Beet, Carrots, Cauliflowers, Celery, Cucumbers, Endive, Herbs, etc.

POTATOS.—Supplies still very heavy, and a slight show of blight amongst most samples. Buyers hold aloof, except at very low prices. Beauties, 60s. to 55s.; Roses, 60s. to 55s.; Snowdrops, 75s. to 80s.; Kidneys, 85s. to 90s. J. B. Thomas.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table listing prices for various fruits including Apples, Cherries, Currants, Gooseberries, Grapes, Lemons, Melons, Peaches, etc.

NOTICES TO CORRESPONDENTS.

ANTS: B. Kent. These insects may be expelled by dusting flowers-of-sulphur about the nest; strong-smelling mineral oils may also be used. Carbolic acid diluted with ten times its bulk of water, then squirted in their haunts, will dislodge them. They may also be trapped by bones or sponge soaked in treacle, periodically visiting the traps, and dipping them in boiling-water.

CARBOLIC ACID TO VINES: In the issue for July 25 "A. W." inquires what proportion of carbolic acid to water should be used on the roots of Vines? I am now enabled to inform him that it is best to use one bushel of stone lime, one teacupful of crude carbolic acid, and enough water to slack. Apply the mixture with a brush. J. J. Willis, Harpenden.

DOUBLE FLOWER: J. H. If the flower be absolutely double, no seed can possibly be produced, but it comparatively rarely happens that the flower is in this sense perfectly double.

ERRATUM.—In our report of the Southampton Show on p. 174 of last week's issue, we stated that Mr. Rumsey, of Waltham Abbey, was 1st with 24 Rose blooms; it should have been, Mr. S. G. RUMSEY, Wrotham, Kent.

FUNGUS IN MUSHROOM BEDS: G. P. D. The fungus is too small, imperfect, and undeveloped for determination; doubtless it came from the spawn. It seems to be a little stunted form of the Mushroom, by some means arrested in growth, but so very young that there are no spores. M. C. Cooke.

GLOXINIAS: J. T. The white flower is good, and if the habit of plant is satisfactory, would be worth propagating; the others are fine, but more common.

GRAFTING: Inquirer. The Art of Grafting, by Charles Baltet, English Edition (1873), to be had of William Robinson, 37, Southampton Street, Strand, small 8vo, pp. 230, with numerous illustrations. We do not know the price; a few shillings, probably.

GRAPES: J. R. H. Your Grapes are "shanked," which condition generally arises from faulty cultivation.

GUATEMALA SEEDS: W. F. & Co. The only names we recognise are Papaya, the Papaw (Carica papaya), Mammal Apple (Mammea americana), Guava (Psidium pomiferum); all these require moist stove treatment. We can send out to our correspondent in Guatemala to inquire about the others, but you might have to wait a long time for an answer.

INSECTS: H. & C. Caterpillar of the Wood Leopard Moth. Does great injury by boring into and feeding upon the wood of fruit trees, &c. They may be pulled out of their burrows by means of a hooked wire, or injections of tobacco water or soft-soap may be employed.

MELONS: W. A. So far as we can tell, in the absence of information as to culture, we believe your leaves have been scalded by sun-burn when wet. Give more air.

NAMES OF PLANTS: Pleione. 1, Odontoglossum cristatellum; 2, Epidendrum alatum; 3, Catasetum galericium.—G. P. Campanula. Send better specimen with root leaves. The bud in the axil of foliage leaf of Tulip is not a rare occurrence. The ordinary bulbs are buds in the axils of scale leaves.—A. B. S. W. Verbascum nigrum.—J. H. J. Peach Noblesse; Gooseberries—1, Golden Drop; 2, White Champagne; 4, Whitesmith. The Gooseberries were not ripe, and it is difficult to name without seeing them growing, many are so much alike.—A. H. B. Allium Schoenoprasum var. sibiricum.—Subscriber. 1, Hedychium flavosum; 2, Francoa ramosa; 3, Mimulus glutinosus; 4, Salvia patens.—A. H. A. 1, Cedrus atlantica; 2, Viburnum lauratum—wayfaring tree.—C. & S. K. 1, Campanula alliariifolia; 2, Acaena

inermis; 3, *Athyrium f.-f.* Frizella, as near as possible; 4, *Origanum vulgare aureum*; 5, *Bal-lota nigra*; 7, *Anagallis tenella*; 8, *Parnassia palustris*; 9, *Campanula isophylla alba*.—*J. R. H.* 1, *Campanula pyramidalis*; 2, *Galega officinalis*; 3, *Berberidopsis corallina*; 4, *Ceanothus azureus*; 5, *Iibiscus syriacus*; 6, *Phygellus capensis*; 7, *Malva moschata alba*.—*J. C.* 1, *Eleoedendron orientale*; 2, *Selaginella Willdenovii*; 3, *Epi-phyllum truncatum*; 4, *Dracana nigrescens*; 5, *Selaginella casia arbore*; 6, *Rochea coccinea*; 7, *Panax laciniatum*; 8, *Cereus coccinea*; 9, *Cyano-phyllum magnificum*; 10, *Acalypha Macafeana*; 11, *Selaginella Mertensi*; 12, *Rondeletia speciosa*. The Heaths should be sent to some nurserymen who makes a specialty of them. Another time do not send more than six. Our time is valuable.

ONIONS DISEASED: *C. E.* The Onions are badly attacked by a parasitic fungus named *Peronospora Schleideniana*; the latter is an ally of the fungus of the Potato disease, and starts rapid putrifac-tion. As this pest appears with you every year, it would be instructive if you would furnish us, in more detail, with your experience. The fungus is known to arise from resting-spores, which hyber-nate in rotten Onion-refuse and in the earth, therefore ground tainted with the disease should on no account be used for Onions a second season, and all Onion refuse should be burnt or deeply buried. Some Onion growers evade the disease by early seed sowing, and by hastening the growth of the Onions, just as early Potatos escape the Potato disease. *W. G. S.*

ORCHID HOUSES: *T. L. C.* We do not recommend any of the dulled or ribbed glasses for glazing orchid houses. For all purposes of plant culture, good clear glass is the best, as it admits as much light as possible during the dull season, and can conveniently be shaded in summer. If dull glass were used, much needed light is excluded at night and in winter. We advise you to adhere to the old and proved method for glazing the Orchid house you are about to erect.

ORCHID INSECTS: *S. & T.* The insect which has gnawed the leaf of your *Acrides maculosum* is identical with our *Eunaleus albo-costatus*, described and figured in the *Gardeners' Chronicle* for July 25, 1891. It is to be noticed that your insect was found injuring an oriental plant, whilst the one we previously described had attacked a Mexican one. We believe your insect was also an inhabitant of the New World.

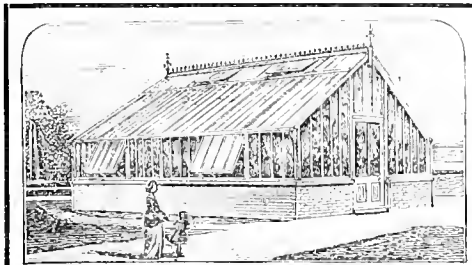
POTATOS v. POTATOES: *S.* An old story—our spell-ing was originally accidental. A question was raised and submitted to one of the foremost authorities of the day, who decided that our method was as correct as the other, and that we were only in advance of the time in adopting it, so we retained it.

TOMATO FUNGUS: *J. S. & Sons.* Destroy as many of the affected leaves as you can, and dust the remainder with Tait's Anti-Blight Powder.

CATALOGUES RECEIVED.

- JAMES BACKHOUSE & SON, York—Flower Roots, Spring-flowering Plants, &c.
- DICKSON & ROBINSON, Old Millgate, Manchester—Dutch Flower Roots.
- DICKSON, BROWN, & TAIT, Corporation Street, Man-chester—Flowering Bulbs.
- VAN MEERBEEK & Co., Hillegom, Haarlem—Dutch Bulbs, &c.
- J. R. PEARSON & SONS, Chilwell, Nottingham—Dutch and other Bulbs.
- WILLIAM BAYLOR HARTLAND, 24, Patrick Street, Cork—Daffodils, &c.
- WILLIAM PAUL & SON, Waltham Cross—Bulbs and Winter Flowering Plants.
- JAMES VEITCH & SONS, Chelsea—Hardy Trees and Shrubs, also Bulbous Roots.

COMMUNICATIONS RECEIVED.—Professor Balfour.—Professor Meibum, Philadelphia.—W. H. B.—W. S.—J. M.—R. D.—W. W.—J. M., Birmingham.—Lois Nath, Ghose, Calcutta.—Professor Cornin, Paris.—Hurst & Son.—E. B.—H. W. W.—W. F. & Co.—E. G. L.—J. L.—J. H. C.—E. C.—J. B. F.—Amateur.—H. W.—A. S.—Lady Gardner.—W. E.—C. C.—W. A. C.—J. S.—Erectus.—G. W. J. (next week).



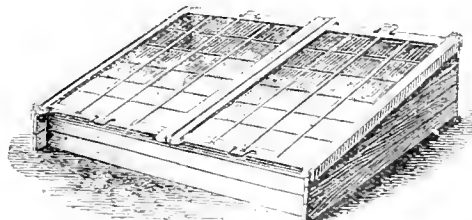
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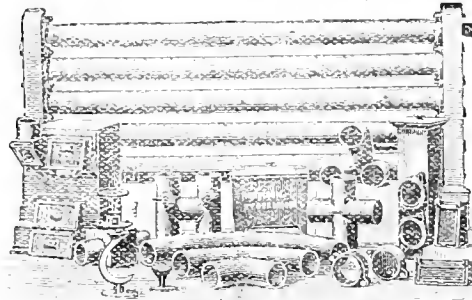
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1-light, 4 ft. by 6 ft.	CASH	2	0	0
2 " 8 ft. by 6 ft.	PRICES,	3	0	0
3 " 12 ft. by 6 ft.		4	2	6
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THE JUBILEE YEAR

OF THE

GARDENERS' CHRONICLE.

THE *Gardeners' Chronicle* was founded, in 1841, by the late Dr. Lindley, Sir Joseph Paxton, and others. It proved a great success from the first, having then few competitors. As the exigencies of the time have required, it has been trebled in size, so far as horticultural matters are concerned. Illustrations which at one time were few, and given only at intervals, are now numerous and regularly issued. The price has been reduced one-half, and though there are now many competitors in the field, the *Gardeners' Chronicle* is generally recognised as the leading authority in all matters relating to Gardening, Garden Botany, Forestry, and the sciences connected therewith. What others think of it may be judged from the following from among many unsolicited expressions of opinion:—

EXTRACTS FROM THE PRESS.

"THE *Gardeners' Chronicle* has faithfully held to its promises. It is still, to-day, the best gardening journal, being indispensable equally to the practical gardener and the man of science, because each finds in it something useful. We wish the journal still further success."—*Garten Flora, Berlin, January 15.*

"The *Gardeners' Chronicle* celebrated, on Jan. 2, the fiftieth anniversary of its foundation. This is, in [English] garden literature, an unique event. . . . The publication is one of special excellence."—*Vossische Zeitung, Berlin, January 7.*

"The *Gardeners' Chronicle*, one of the most justly renowned horticultural journals of the world, celebrates the fiftieth anniversary of its foundation. The career of this publication, which is an authority in scientific as well as in practical matters, has been most successful and interesting. . . . With such a past, there can be no doubt as to its future."—*Revue Horticole, Paris, January 16.*

"The *Gardeners' Chronicle* is known wherever intelligence in horticulture is appreciated."—*Mechan's Monthly.*

"The first issue of the *Gardeners' Chronicle* for the year is a jubilee number devoted largely to a commemoration of the fiftieth anniversary of that journal's first appearance. Founded by Dr. Lindley and Sir Joseph Paxton, its policy has always been directed by men of accurate knowledge and scientific temper. Its trusted correspondents have been among the foremost of skilled cultivators and recognized authorities in the sciences related to horticulture. During its life of half a century, its influence has tended to elevate and dignify the art of horticulture, not only in England, but throughout the world, and it was never more worthy to command respect than under its present management. Our venerable contemporary is to be congratulated on the possession of so honourable a history, whilst its future is bright with the promise of ever-increasing usefulness."—*Garden and Forest (New York), Jan. 21.*

"We wish to give ourselves the pleasure of recognizing an event in the career of a respected contemporary. . . . The *Gardeners' Chronicle* is the senior by only seven years of the *Journal of Horticulture*, and, to speak paradoxically, we may venture

to say, that both these journals are as young as ever, and disseminate, each in its own way, matter of interest to botanists and horticulturists throughout the world, where the science of botany is studied, and the art of gardening is practised by the community."—*Journal of Horticulture, February 5, 1891.*

"THE JUBILEE OF THE 'GARDENERS' CHRONICLE.'—On January 2, 1841, appeared the first number of a weekly paper which, thanks to the scientific research and practical knowledge of its editors, soon became, and has ever since remained, the principal horticultural medium in England."—*Illustration Horticole, Brussels, Jan. 1891.*

"One of the best conducted English horticultural papers, the *Gardeners' Chronicle*, celebrated the fiftieth year of its existence on January 2. This journal was called into existence by Dr. Lindley and Joseph Paxton. Two of the first and most industrious assistants were the recently-deceased landscape gardener Marnock in the practical part, and James Bateman, who published a series of interesting articles on epiphytal Orchids. Of other eminent writers, there are mentioned the names of Charles Darwin, Dean Herbert, Sir W. Hooker, who, in 1841, was appointed Director of the Royal Botanical Garden, Kew; Sir J. Hooker, Professor Daubeny, Dr. Royle, Henslow, MacIntosh, Curtis, Phillip Frost, Robert Thompson, Robert Fortune, and Berkley."—*Moller's Deutsche Gartner Zeitung, Erfurt, February 1, 1891.*

"For the past half a century, the *Gardeners' Chronicle* has been the leading horticultural and botanical newspaper in the United Kingdom. . . . With such a talented proprietary and staff of editors, it is not surprising that the paper was at once recognized, and took up a leading position as the first horticultural journal of the kingdom. Its success has been very great. . . . Very few of the first working printers on the paper are left to witness the prosperity of the venture, except the writer of these lines (the editor of the *Press News*). . . . The *Gardeners' Chronicle* is still recognized as the leading horticultural journal of the kingdom."—*Press News, January, 1891.*

"The *Gardeners' Chronicle* has just celebrated its jubilee, its first number having appeared January 12, 1841. The founders were Dr. Lindley and Sir

Joseph Paxton. It is to be congratulated upon its long and eminent list of contributors, and upon its constantly increasing usefulness. It is one of those gardening journals that have become a necessity, not only to the practical gardener, but to the professional botanist as well."—*The Botanical Gazette (American), February, 1891.*

"This important journal renders great service in acting as an intermediary between botanists and horticulturists, impressing on the one the true principles of classification and nomenclature, and on the other, the fact that the observation of living plants in the garden teaches many things which cannot be learnt, either in the herbarium or the laboratory, facts which the new generation is disposed to overlook."—*Alphonse de Candolle, Geneva.*

"Let me offer my best felicitation on the semi-centenary jubilee of your splendid *Chronicle*, which you have edited with so much talent, knowledge, and discrimination, for so long a while as the worthy successor of the great Lindley. Wishing the *Gardeners' Chronicle* also in future a splendid success under your able leadership, I remain, *Ferd. von Mueller, Melbourne.*"

"You have brought the *Gardeners' Chronicle* into an admirable condition of prosperity and authority. Of all analogous publications, the *Chronicle*, with no possible reservation, takes the lead. It is more widely read than any of the horticultural journals, owing to its wider circulation. The matter is the most varied, and the illustrations the most correct and elegant. What I wish is, not the continuance and enhancement of your success, for that is certain, as the future will prove, but the continuance of that marvellous energy which has had such excellent results already."—*Maxime Cornu, Director of the Jardin des Plantes, Paris.*

"In 1841, Lindley and Sir Joseph Paxton enriched horticulture with this high-class periodical, in which science has always taken an equally important part with practical information. The issue for the 3rd of last January was devoted to the celebration of the anniversary. The *Gardeners' Chronicle* cannot fail to prosper under its present management, which is conducted with unusual ability and skill."—*Le Jardin, Paris, March 20, 1891.*

THE GARDENERS' CHRONICLE

("The Times of Horticulture")

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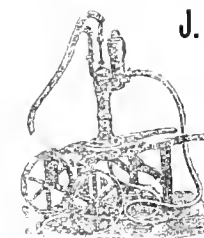
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THE COTTAGER'S CALENDAR of GARDEN OPERATIONS. By the late Sir JOSEPH PAXTON, M.P.

W. RICHARDS, 41, Wellington Street, Strand, London, W.C.

BOILING WATER OR MILK. |
E P P S ' S
GRATEFUL-COMFORTING.
C O C C O A
BREAKFAST OR SUPPER.

To Gardeners and Others.

THE LONDON COUNTY COUNCIL is about to APPOINT SUPERINTENDENTS of BROCKWELL PARK, Herne Hill, and WATERLOW PARK, Highgate, and is prepared to receive APPLICATIONS for these APPOINTMENTS. The Salary of the Superintendent of Brockwell Park will be £100 a year, rising £5 every year to a maximum of £125; and the Salary of the Superintendent of Waterlow Park will be £50 a year, rising £5 every year to a maximum of £105 per annum. In each case a residence, free of rates and taxes, and supplied with gas and water, will be provided; but there are no other allowances.

Applicants, whose age must not be less than 35 or more than 45 years, must be practical gardeners, and also capable of managing men and dealing with the public.

Applications must be upon Forms, which can be obtained at this Office, and must be accompanied by copies of not more than three recent testimonials.

Particulars of the duties will be supplied the same time. Applications must be sent in to us on or before September 13, 1891, after which date none will be received.

H. DE LA HOOKE, Clerk of the Council.
 Spring Gardens, S.W., August 13, 1891.

WANTED, a HEAD GARDENER, in Hertfordshire.—An energetic, practical, and obliging Man. He must thoroughly understand his business, and be able to produce a constant supply of the very finest Fruit, Flowers, and Vegetables; also Early and Late Forcing of them. Cut Flowers and Decorative Plants for house and table are wanted all the year round. About eight men are employed. There are between two and three acres of Kitchen Garden, with the usual Tomato, Stove, Cucumber, Grape, and Greenhouses, Conservatories, &c. It is hoped that no one will reply to this advertisement unless he has filled a similar situation before, and is capable of managing the men, and thoroughly well looking after what is usually done in a first-class place. Preference will be given to a middle-aged man, without family.—Letters, with all particulars, must be addressed to Mr. W. B. BINGHAM COX, 26, Southampton Street, Strand, London, W.C.

WANTED, a GARDENER, within twelve miles of London.—A strong, active man, about 25 or 30 years of age, as Second Gardener, where three are kept. Must understand the management of a first-class Kitchen Garden, and have a practical knowledge of Houses, Vines, and all general work.—Write, in first instance, stating age, experience, and other particulars, to C. B. H., Medical Battery Co., Ltd., 52, Oxford Street, London, W.

WANTED, a GARDENER, at Martinmas (November), to work small Market Garden.—Apply, No. 138, Keith & Co., Advertising Agents, Edinburgh.

WANTED, a first-rate WORKING GARDENER. Must thoroughly understand Greenhouses, Frames, and Flower and Kitchen Gardening. Small Orchard. No Forcing. Single-handed, with occasional help; married. Wages, 21s. per week.—Mr. Ivy House, Chertsey, Surrey.

WANTED, a SECOND GARDENER and WIFE, good Landrass.—Address, with full particulars, Mr. CHAMOND, Knoyle Gardens, Salisbury.

WANTED, a SECOND GARDENER, who thoroughly understands Glass Work.—Apply by letter to O. H., Southend Cottages, Fareham, Hants.

WANTED, a SECOND GARDENER, in a Gentleman's garden, not under 21, who is a first-class Grower of Soft-wooded Plants, Orchids, Ferns, &c. Wages, 22s. per week.—C. KERSHAW, Stead Syke Nurseries, Brigg-house, Yorks.

WANTED, a young MAN as PALM and FERN GROWER.—State experience and wages expected, to W. FROMOW AND SONS, Sutton Court Nursery, Chiswick.

WANTED, a good ROSE-BUDDER for a few thousand stocks.—State particulars to GEO. BOLTON, Buntingford, Herts.

WANTED, a good FRUIT GROWER. Well up in Cucumbers.—H. HUXFORD, Anchor-in-Hope Lane Nursery, Charlton.

WANTED, a first-class WORKING FOREMAN, well up in growing Flowers, Plants, Tomatoes, Cucumbers, Melons, &c., for Market. Good wages will be paid to a good man. Apply, with references, &c., to MR. TRAVIS, Plymouth Road, Fenrth, Cardiff.

WANTED, a young MAN, for Lawn and Kitchen garden. One used to mowing machine and scythe preferred. Bothy and vegetable tables.—CHAS. BARNETT, Hilton Park Gardens, Wolverhampton.

WANTED IMMEDIATELY, an experienced MAN in the Nursery, Vinery, Chamber Growing, &c.—Apply, stating wages, A. DUCKERING AND SONS, East Barkwith, Lincoln.

WANTED, AT ONCE, TWO young MEN, with some experience as IMPROVERS, in the Houses. Wages to commence at 15s. per week.—J. CARTER, Wharton Grange, Framfield, Sussex.

WANTED, a young MAN, for Flower and Kitchen Garden.—One used to Spade and Scythe, and about 23 years of age. Wages, 14s. and lodgings.—Mr. HALL, Shiplake Court Gardens, Henley-on-Thames.

WANTED, for a Gentleman's establishment, strong country LAD.—Used to Cows, first-rate Milk-er, and fond of animals. Bothy provided; highest references required.—State wages, to RONALD SCOTT, Esq., The Elms, Acton Hill W.

WANTED, a reliable MAN, for the Houses. A good Grower and Propagator of Bedding and general Soft-wooded Stuff, Ferns, Chrysanthemums, &c. Unexceptional references as to ability, character, &c. required.—State wages (moderate), and full particulars to LANTON BROTHERS, Bedford.

Seed Trade.

WANTED, a young MAN, having connection with Gardeners round London, to Travel.—Address, SEED, Deacon's Advertising Offices, Leadenhall Street, E. C.

WANTED, a strong, active single MAN, for Kitchen Garden work; 15s. a week and bothy. Also a strong active LAD, from 17 to 18, for general Garden work; wages, 12s. and bothy. Must be Roman Catholics.—Apply to the GARDENER, Frenham Place, Farnham, Surrey.

WANTED, AT ONCE, a smart COUNTER-HAND, with experience in executing Bulb and Seed Orders. Wages, 20s. per week.—Apply, by letter, to B. 12, King Street, Covent Garden, W.C.

WANTED, TWO respectable married MEN, as STOKERS. Wages, 24s. 6d. per week.—Apply, FOREMAN, Turnford Hall Nurseries, near Broxbourne, Herts.

WANTED, a young MAN, to assist in the Office as NURSERY CLERK. Must be a good writer, and understand Book-keeping, and willing to make himself generally useful. Good testimonials indispensable.—State age and wages required to GEO. JACKMAN AND SON, Woking Nursery, Woking.

WANTED, a young MAN as SHOPMAN, with a knowledge of Seeds and Bulbs, and assist in Nursery occasionally.—Must be strictly honest and persevering.—State particulars and wages to W. FROMOW AND SONS, Sutton Court Nursery, Chiswick.

WANTED, as STOKER, a steady married MAN, without family, and to make himself useful in the Nursery. Preference given to one who can Paint Greenhouses. Situation permanent to steady man. Wages, 20s. per week, with cottage, fire, and light.—State full particulars to TURNER BROS., Florists and Nurserymen, Garston, Liverpool.

WANTED, an experienced SALESWOMAN, for the Floral Department.—Apply, THE FLORAL DEPOT, Market Place, Nottingham.

WANT PLACES.

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester (Limited), are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address—"DICKSONS, CHESTER."

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

SANDERS, St. Albans, can thoroughly RECOMMEND several first-class HEAD GARDENERS.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, Liverpool, are in a position to recommend a first-rate man as HEAD GARDENER, BAILIFF, or FOREMAN; also a thoroughly competent man as HEAD GARDENER, who has a good knowledge of Orchids; unexceptional references in each case.

Head Gardeners.

JOHN LAING AND SONS can at present recommend with every confidence several energetic and practical Men of tested ability and first-rate character. Ladies and Gentlemen in want of GARDENERS and BAILIFFS, and HEAD GARDENERS for first-rate Establishments or Single-handed Situations, can be suited and have full particulars by applying at Staunstead Park Nurseries, Forest Hill, London, S. E.

B. S. WILLIAMS AND SON beg to intimate that they have at present in their Nursery and upon their Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Victoria and Paradise Nurseries, Upper Holloway, N.

GARDENER (HEAD).—J. W. SILVER can with the utmost confidence recommend an exceptionally high class man, as above; of long experience in Fruit and Plant-growing, and the general management of a large establishment. The highest references as to both character and ability.—Streatham and Norbury Nurseries, London, S.W.

J. VERT, Audley End Gardens, informs over fifty applicants (with thanks) that he has ENGAGED a FOREMAN.

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GARDENER (HEAD).—A gentleman is desirous of recommending his late father-in-law's Head Gardener, who was with him between seven and eight years, during that time giving entire satisfaction, being a thoroughly competent man, with seven under him. Married, with grown-up family; Wife had charge of Dairy and Poultry. Can have personal character.—R. KING, 8, Whiteley's Cottages, Hillingdon Heath, Uxbridge.

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GARDENER (HEAD).—Age 29, single; last five years Head Gardener at Quinta d'Achada, Madeira. Thoroughly understands the Cultivation of Vineyards, Sugar-cane, Arrowroot, Fruits, and Flowers. Speaks Portuguese and German. First-class character.—WELLS, Barry Cottage, Stanley Road, Pokesdown, Bournemouth.

GARDENER (HEAD), where two or three are kept.—Age 38; thoroughly practical in all branches. Leaving for no fault, with first-class character.—G. COLLINS, Storrington, Palborough.

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GARDENER (HEAD WORKING).—Age 44; a good all-round Hand. Married, with family. Eight years in present situation, nine and ten previous. Wife could do Laundry work if required.—S. RENDELL, Hawkwell Place, Pembury, Tunbridge Wells, Kent.

GARDENER (HEAD WORKING), where three or more are kept; age 40.—A GENTLEMAN wishes to recommend his Head Gardener as above, to any Lady or Gentleman requiring a thorough good all-round steady and reliable man.—Apply, E. M. HUTTON RIDDELL, Esq., The Bank, Newark-on-Trent, Notts.

GARDENER (HEAD WORKING); age 33, married.—A GENTLEMAN wishes to recommend his Head Gardener to any Lady or Gentleman requiring the services of a thoroughly practical man. Seven years' excellent character.—J. C., 2, Weston Cottages, Pembroke Road, New Southgate, N.

GARDENER (HEAD WORKING); age 33, single.—Mr. FERRIS, The Gardens, Mount Mount, Mill Hill, Hendon, will have much pleasure in recommending his Foreman, J. Jones, to any Lady or Gentleman who may require the services of a thoroughly practical and competent man.

GARDENER (HEAD WORKING).—Fifteen years' practical experience. Grapes, Peaches, Melons, Plants, Orchids, Flower and Kitchen garden, also laying out new grounds. C. RANCE, late of Handcross Park, can with confidence recommend J. H., who has lived with him about seven years.—25, Salisbury Road, Highgate Hill, N.

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GARDENER (HEAD WORKING).—Age 32 married; seventeen years' good and varied experience in all branches. Good references from present and previous employers.—J. R. Albert Road North, Reigate, Surrey.

GARDENER (HEAD WORKING).—Age 39, married; a thoroughly good, practical, and competent Gardener. Twenty-three years experience in Growing Grapes, Peaches, Figs, Melons, Cucumbers, Mushrooms, Tomatoes, Stove and Greenhouse Plants, Flower and Kitchen Gardening, and Early and Late Forcing. Abstainer; highest references.—GARDNER, Oakwood, Chichester, Sussex

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GARDENER (HEAD WORKING, or good SINGLE-HANDED).—Age 37, married. Thoroughly practical in every branch of the profession. Good character.—J. ARNOLD, Cotesbach Hall Gardens, Lutterworth.

GARDENER (HEAD WORKING).—Married, two children, (youngest age 2); thoroughly experienced in Early and Late Forcing, &c. Highest reference from present employer.—T. W., 7, Edingham Road, Reigate.

GARDENER (HEAD WORKING), where two or three are kept.—Age 38, married, five children. Sixteen years' character.—W. RIGDEN, 31, Belford Road, Ealing Dem.

GARDENER (HEAD WORKING); age 40, married, three children.—A Gentleman wishes to recommend a trustworthy man, who has been with him eleven years, as above. Thoroughly experienced in Forcing, and in all wages; also Land and Stock. Total abstainer.—W. C. R., Cobbe Priory, Shaftesbury; for character and ability to Milk Beaufoy, Esq., M.P., 1, Holme Lea Terrace, Lyme Regis.

GARDENER (HEAD WORKING).—Thoroughly understands his work in all its branches. Wife could do Cooking or Dairy, if required. Good character.—E. BAKER, Telli-ford Rectory, near Bath.

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GARDENER (SINGLE-HANDED).—Age 37; married, three children. Five and a half years' good character. No objection to horse or cow.—J. E., 98, Dorset Road, Clapham, S.W.

GARDENER, or GARDENER and BAILIFF.—Mr. F. H. CRASP, Canford Manor, Wimborne, can strongly recommend a first-class man as above. Excellent Grower of Fruit, Plants, Flowers, and Vegetables, and a good and economical Manager of a gentleman's place generally. Unqualified testimonials and highest references.

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GARDENER (SECOND or UNDER).—Age 22; two years' good character.—A. LONGHURST, Mr. Gatward, West Street, Ewell, Surrey.

GARDENER (SECOND), where three or four are kept.—Age 24, single. Ten years' experience Inside and Out. Good references.—W. M., 39, Pope Road, Bromley, Kent.

GARDENER (SECOND), where four or five are kept; or JOURNEYMAN, in a good establishment; Inside preferred.—Age 25; two and a half years' excellent character.—W. ABBOTT, 55, Peckwater Street, Kentish Town, London, N.W.

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GARDENER (UNDER), or SECOND in the Houses.—Age 22; can be well recommended. Five years' experience in private establishment.—A. J., Ladd's Nursery, Swanley, Kent.

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GARDENER (UNDER, or SINGLE-HANDED).—Age 21. Good character; can be well recommended.—W. T., 3, Collin Street, Blackheath, Kent.

GARDENER (UNDER).—Age 22; five years' experience. Inside and Out, and can have five years' references, if required.—H. YOUNG, Bidley Road, Winton, Bournemouth, Hants.

GARDENER (UNDER, or SINGLE-HANDED).—Age 28, single; good character. Willing to be generally useful.—H., 7, Chatham Road, Camberwell, S.E.

GARDENER (UNDER).—Age 21; under Glass. Six years' experience. Good character.—J. TULK, Watergore, near Ilminster, Somerset.

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GARDENER (UNDER), age 20.—Wishes to gain experience in Gentleman's establishment; good character; both preferred.—W. A. POLLARD, 4, Hatfield Grove, Douglas, Isle of Man.

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PROPAGATOR, or ASSISTANT.—Age 25; used to propagating Stove and Greenhouse plants, and general Nursery Stuff. Good references.—AUGUST REISER, 5, Peplae Street, Bishop-neld, Chester.

To Nurserymen.
PROPAGATOR and GROWER of Soft-wooded Stuff; also experience in Palms, Ferns, &c., and the general routine of Nursery Work.—Age 27; fourteen years' practical experience.—W. R., 32, Charlton Road, Harlesden, N.W.

PROPAGATOR and GROWER.—Well up in Pelargoniums, Cyclamens, Fuchsias, Primulas, Calceolarias, Cinerarias, Gemstas, Hydrangas, Bouvardias, Ficus, Ferns, and General Market Plants, Vines, Tomatoes, Cucumbers, Forcing Lily of Valley, Bulbs, &c. Good reference.—H. GARDENERS' Chronicle Office, 41, Wellington Street, Strand, W.C.

ORCHID GROWER, &c.—Married; exceptional references from present employer as to ability, &c.—W. L., Pine Apple Nursery, Maida Vale, London, W.

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NURSERY FOREMAN and MANAGER.—A thoroughly practical man in every respect. Good Correspondent. Would Manage a Branch Nursery, and give security with reference.—C. D., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

FOREMAN (INSIDE, or GENERAL in a first-class garden).—Age 24; highest references as to ability and personal character.—PEWICLES, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

FOREMAN, PROPAGATOR and SALESMAN, Indoors.—Thoroughly practical in all Plant-growing. Fourteen years Foreman at Messrs. Jas. Veitch & Sons', Chelsea.—C. SWIFT, 319, North End, Waltham Green, S.W.

FOREMAN.—Age 25; twelve years' experience in good establishments; also Furnishing, &c. Well recommended.—FOREMAN, The Firs, Acton Turville, Chippingham.

FOREMAN, Inside.—Age 25; experienced in all branches. Well recommended.—DIXON, 6, Priory Road, West Hampstead, N.W.

FOREMAN, or good JOURNEYMAN.—F. ROSS, Pendell Court Gardens, Bletchingley, Surrey, would be glad to recommend three excellent men as above. Leaving entirely through establishment being broken up. All at liberty after 22nd inst., or before if required.—All particulars of F. ROSS as above.

FOREMAN PROPAGATOR and GROWER in Nurseries.—Age 39; fifteen years' experience in Fruit and Plant Culture, Cut Flowers, &c. Thorough knowledge of the business.—R. B., 15, Narcissus Road, West Hampstead, N.W.

JOURNEYMAN, in the Houses.—Age 20; good character. Bothy preferred.—W. NASH, Salterus, Sea View, Isle of Wight.

JOURNEYMAN, Inside and Out.—Six years' experience in good establishments in the Houses. Can be well recommended by present employer.—HENRY TOZER, Eversfield, Grove Park, Kent.

JOURNEYMAN (FIRST); age 23.—Mr. EXLER, Head Gardener, Bovingdon House, Hemel Hempstead, wishes to highly recommend W. Cooper, as above. He has been here two and a half years, giving every satisfaction.—W. COOPER, Chinnor, Tetworth, Oxon.

JOURNEYMAN, Inside, or Inside and Out.—Age 25; three and a half years in last place. Highly recommended.—E. HENEGE, South Somercotes, Louth, Lincolnshire.

JOURNEYMAN, in the Houses.—Age 20. Good character. Seven years' experience. Leaving through breaking up of establishment.—Mr. ADAMS, Head Gardener, Brownsea Castle Gardens, Poole.

JOURNEYMAN, Inside and Out in a Gentleman's garden.—Age 20. Excellent character. Two years in present and four in last situation.—A. BARNES, Lordswood, Shirley, near Southampton.

IMPROVER.—Mr. J. FRIEND, The Gardens, Tooksnest, Godstone, can confidently recommend a strong, handy, and willing youth as Improver.

IMPROVER in a good Garden; age 20.—EDWD. G. TAYLOR, Gardener, Manor House, Aiton, wishes to recommend an industrious young man, as above.—Address the above; or GEORGE BURN, Ampfield, nr. Romsey, Hants.

IMPROVER, in gardens, under Glass.—Age 18. Five years' experience. Good character.—E. GARDINER, Ballard's Hill, Goudhurst, Kent.

TO GARDENERS.—Situation wanted, in a good Garden, by a young man (age 18). Inside work and bothy preferred. Good references.—R. WAINWRIGHT, The Gardens, Fernclough, Bolton.

TO GARDENERS.—Situation wanted, for a young man (age 19), under a Foreman, in a Gentleman's Garden. Four years' experience in the Houses. Used to Fire. Good character.—C. ASHBY, Hampton Park, near Tonbridge.

TO SEEDSMEN, NURSERYMEN, and FLORISTS.—Wanted by a young man, age 24, with eight years' experience, a situation in the above; competent to take any department; first-class references.—C. E., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

To Nurserymen and Gentlemen Gardeners.
GLAZIER and PAINTER, handy at repairs, Estate preferred; own tools. Good references from previous employers. State wages.—G. P., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

SHOPMAN (ASSISTANT); age 25.—Good knowledge of Seeds, Bulbs, Plants, and Nursery Stock. Good references.—M. H., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

SHOPMAN, or MANAGER.—Age 32; thorough knowledge of Seed, Bulb, Plant, and Flower Trade. Good references. State particulars.—W. HARRIS, Hammerwood, East Grinstead, Sussex.

NURSERY CLERK.—Age 32; thoroughly competent. Proficient Bookkeeper, Correspondent, &c.; Long experience, highest references.—DELTA, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

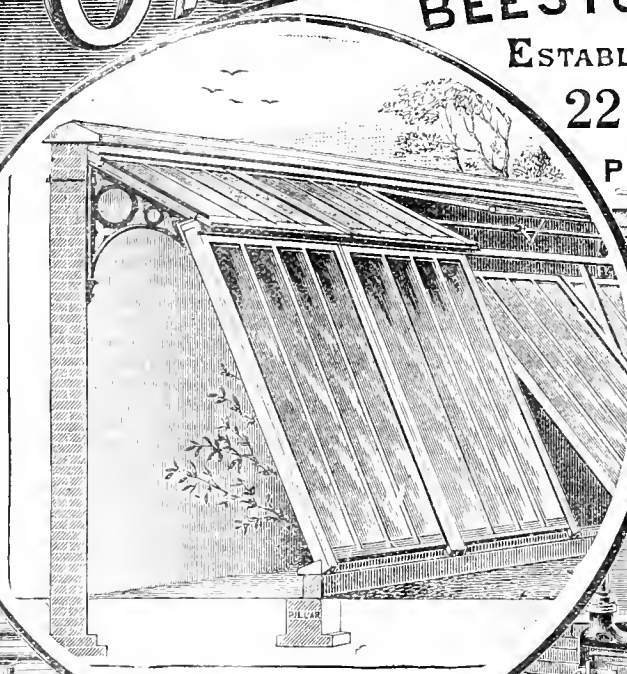
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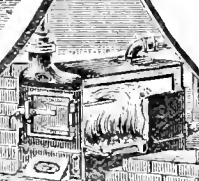
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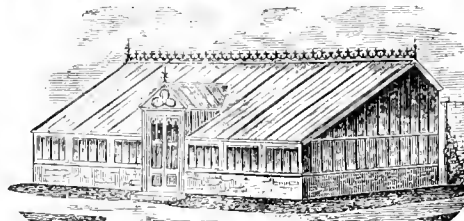
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The GARDENERS' CHRONICLE

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SATURDAY, AUGUST 22, 1891.

{ PRICE 3d. POST-FREE, 3½d. }

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"The Gardeners' Chronicle" in America. The Subscription to America, including Postage, is \$4.30 for 12 months. Agent for America, E. H. LIBBY, Manager, The Rural Publishing Co., Times Building, New York, to whom American orders may be sent.

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MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **MONDAY, WEDNESDAY, and SATURDAY** NEXT, August 24, 26, and 29, at half-past 12 o'clock precisely each day, extensive importations of BULBS from some of the best-known farms in Holland, just received in splendid condition, comprising most of the best sorts of Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SNOW-DROPS, SCILLAS, IRIS, &c., &c., specially lotted to suit the Trade and other large Buyers. Also EARLY WHITE ROMAN HYACINTHS, PAPER WHITE and DOUBLE ROMAN NARCISSUS, 5000 LILIUM HARRISII for forcing, 8000 Home-grown LILIUMS, &c.

On view mornings of Sale, and Catalogues had.

Pendell Court, Betchingley, Surrey.
MR. J. C. STEVENS will **SELL** by AUCTION on the premises, as above, on **WEDNESDAY** September 2 and following day, at 1 o'clock precisely each day, by order of the executors of the late Sir G. Macleay, the COLLECTION of ORCHIDS, including many of the well-known kinds; Specimen PALMS, TREE and other FERNS, GREENHOUSE PLANT, STUCCULENTS, EUCHARIS, LILIES, &c. Also two COWS, Horse, two Carts, two Ricks of Hay, Iron Tanks, Garden-seats, Vases, Lawn-mowers, Greenhouses, &c., &c.

On view the day prior, and mornings of Sale; and catalogues had on the Premises, and of the Auctioneer, Offices and Rooms, 38, King Street, Covent Garden, W.C.

Monday and Thursday Next.

DUTCH BULBS. SPECIAL TRADE SALES.
MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY and THURSDAY** NEXT, large consignments of named Hyacinths, Tulips, Crocuses, Narcissus, and other Dutch Bulbs, together with white Roman Hyacinths and Paper White Narcissus, received direct for unreserved sale. These early auctions have been specially arranged in lots to suit the trade, and other large buyers. The Auctioneers will be pleased to enter the names of intending purchasers in their permanent lists, who may desire a regular supply of catalogues for these sales.

Friday Next.
CATTLEYA ALBA,
LELIA PRESTANS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and 213, Park Road, Clapham, S.W., to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on **FRIDAY** NEXT, August 28, at half-past 12 o'clock, a remarkably fine lot of CATTLEYA ALBA, brought home personally by the Collector. The plants were collected in the same locality, whence came the plants we had the two previous years, and which turned out such an exceedingly fine lot, amongst which flowered C. aurea marmorata, C. Missalana, C. Harlyana, and other choice forms. Many good things may be expected out of this importation, we can assure intending buyers the plants are well-leaved and without doubt the finest lot ever offered.

Also a very healthy lot of LELIA PRESTANS, ONCIDIUM VARIOSUM ROGERI, CATTLEYA SCHOFIELDIANA, ODONTOGLOSSUM RAMOSISSIMUM, a pretty winter-blooming Orchid; these are a grand lot. CATTLEYA LODDIGESI, just to hand; ROULETTIA, new species, semi-established; COLAX JUGOSIS, ONCIDIUM DASYPYLE, the Orchid; O. PHYMATOCHEILUM, O. MICROPOZA, CATTLEYA LEOPOLDI, ODONTOGLOSSUM HARRYANUM, to hand, ZYGOPETALUM GRAMINIFOLIUM, &c.

On view morning of Sale, and Catalogues had.

The Nursery, London Road, Croydon.—Expiration OF LEASE.
CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, by order of Mr. T. Butcher, Preliminary.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, on the Premises, on **TUESDAY**, September 8, at 12 o'clock, without reserve. Further particulars will appear next week.

Auctioneer and Estate Offices, 67 and 68, Cheapside, E.C.

Dy-on's Lane Nursery, Upper Edmonton.
GREAT ANNUAL TRADE SALE of GREENHOUSE PLANTS, by order of Mr. H. B. May.

MESSRS. PROTHEROE AND MORRIS beg to announce that the above ANNUAL SALE will take place on **MONDAY, September 14.**

Descriptive Advertisement will appear next week.

Lea Bridge Road Nurseries, Leyton, E.
GREAT ANNUAL TRADE SALE of WINTER BLOOMING HEATHS and GREENHOUSE PLANTS, by order of Mr. J. Fraser.

MESSRS. PROTHEROE AND MORRIS respectfully give notice that the above ANNUAL SALE will take place on **WEDNESDAY, September 16.**

Burnt Ash Lane Nursery, Lee.
GREAT ANNUAL TRADE SALE of WINTER BLOOMING HEATHS and GREENHOUSE PLANTS by order of Messrs. B. Muller & Sons.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions to conduct the above ANNUAL SALE on **TUESDAY, September 15.**

The Brimsdown Nurseries, Enfield Highway.
ANNUAL TRADE SALE of WINTER BLOOMING HEATHS and GREENHOUSE PLANTS, by order of Mr. J. Muller.

MESSRS. PROTHEROE AND MORRIS desire to notify that the above ANNUAL SALE will take place on the Premises on **THURSDAY, September 17.**

Full particulars will appear next week.

Acton, W.
IN BANKRUPTCY re JOHN REEVES.
ABSOLUTE CLEARANCE SALE, without the slightest Reserve. By order of the Trustee.
IMPORTANT TO THE TRADE.—PRELIMINARY.
MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nurseries, Acton, W., in **SEPTEMBER** NEXT, the whole of the extensive STOCK, including 100,000 FERNS, 4000 EUCHARIS (large plants), a great stock of ASPARAGUS TENUINISSIMUS and PLUMOSUS, the entire stock of the new Single Pink PELARGONIUM, ETHEL; 3000 MISS JOLIFFE CARNATIONS, the finest in the Trade; 8000 ditto in store-pots; 300 Specimen Fielder's White AZALEAS, 1000 POINSETTIAS, 5000 CYPERUS, 10,000 Golden and Green EUCONYMUS, 800 White PEONIES, 5000 Irish IVIES in pots, the erections of 30 GREENHOUSES, thousands of feet of HOT-WATER PIPING, &c.

Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Great Sales of Nursery Stock.
IMPORTANT to those ENGAGED LARGELY in PLANTING.
MESSRS. PROTHEROE AND MORRIS are now ARRANGING with NURSERYMEN AUCTION SALES of NURSERY STOCK in all parts of the country for the coming season. Several important Sales have already been booked, and, with others now being arranged, will be ANNOUNCED in this PAPER NEXT SATURDAY.

Instructions of any other Nursery Stock Sales should be forwarded not later than **WEDNESDAY** NEXT, to be included in this preliminary notice.

Auction Rooms and Estate Offices, 67 and 68, Cheapside, E.C.

Acton, W.
Priory Nursery, Acton Lane, Proprietor, Mr. J. C. Jennings. To NURSERYMEN, GENTLEMEN, and OTHERS. The SECOND ANNUAL SALE of 20,000 SURPLUS STOCK of PLANTS.

MESSRS. W. EYDMANN AND SON have received instructions from the Proprietor to **SELL** by PUBLIC AUCTION, on the above Premises, on **THURSDAY**, August 27, 1891, at 1 for 2 o'clock, the SURPLUS STOCK of STOVE and GREENHOUSE PLANTS, consisting of Maiden-hair and other Ferns, Encharis, Azaleas, Cyperus, Carnations of sorts, Chrysanthemums, Poinsettias, Roses in pots, Double Primulas, Pelargoniums, Marguerites, large Euphodia splendens, specimen Lapageria alba, Orchids, Agapanthus, Liliuums, &c. Useful Florist's Van.

May be viewed day prior to Sale. Catalogues to be obtained on the Premises, and at the Auctioneer's and Valuer's Offices, High Street, Acton.

N.B.—Immediately upon the conclusion of the Sale of Surplus Stock, the FREEHOLD NURSERY will be submitted for SALE by PUBLIC AUCTION, on the Premises, containing a total area of over 3 acres, with the following erections thereon:—28 well-built Greenhouses, containing about 45,000 feet of glass and woodwork; 9000 feet of hot-water Piping, driven by 14 boilers; Stabling for 4 Horses, 2 Coach-houses, Potting, Packing Sheds, &c.

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Particulars to AGRUS, 192, Uxbridge Road, London.

WANTED, TO RENT, Part of a Hothouse, for 1000 Orchids, with attendance, for a short time only.
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FREEHOLD LAND for SALE, about 3 acres, laid out as Recreation Grounds. Suitable for Glass Buildings or Nursery Purposes. 500 feet of frontage. £300 for the whole will be accepted to an immediate purchaser.
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FREEHOLD ORCHARD LAND for SALE, about 3 acres, now crowded with Fruit. Five minutes from Hampton Station. To an immediate purchaser, £25 per acre will be accepted. The Fruit Trees inclusive.
Apply to Mr. JOHN EMBLETON, Suffolk House, Hampton Hill; or, Messrs KENT AND SON, Solicitors, Hampton.

YORKSHIRE (on the borders of), an excellent FREEHOLD NURSERY FOR SALE, the owners retiring from business. A compact Nursery, all under Glass. Six Greenhouses, nearly new; dwelling house and buildings. Also Leasehold Nursery, nearly 3 acres.
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THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.
Address, SECRETARY, 43, Great Tower Street, E.C.

EXHIBITIONS.

NEWCASTLE - ON - TYNE AUTUMN FLOWER SHOW. AUGUST 26, 27, and 28, 1891.
Entries close August 19. For Schedules, &c., apply to—
Cross House Chambers. JAS. J. GILLESPIE, Secretary.

SANDY (Bedfordshire) FLORAL and HORTICULTURAL SOCIETY.—Twenty-third Great Autumn Show of Plants, Flowers, Fruit, Vegetables, Dogs, Poultry, Pigeons, Rabbits, and Cage Birds. Prizes £240. **FRIDAY, August 28.** W. GREEN, Sec., Sandy.

BATH AUTUMN SHOW.
WEDNESDAY and THURSDAY, September 2 and 3.
Amongst the Prizes offered are for:—
1st 2nd 3rd
12 Foliage and 6 Stove or Greenhouse Plants £12 £8 £4
6 Stove or Greenhouse Plants ... £1 £2 10s. £1 10s.
6 Orchids ... £2 £1
Group of Plants not less than 100 sq. feet £5 £1 £2
Collection of Fruit, 12 dishes ... £3 £2 £1
8 Bunches of Grapes, 4 varieties ... £5 £3 £2
And 5 other Classes for Grapes in varieties. Prizes in proportion.
Entries close August 29. For Schedules, &c., apply to—
2, Northumberland Buildings, B. R. F. PEARSON, Secs.
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CASTLE DOUGLAS HORTICULTURAL SHOW, THURSDAY, September 3, 1891. OPEN COMPETITION. The following are a few of the PRIZES offered: Six Bunches GRAPES (2 Hambro, 2 White, and 2 Black, any variety).—1st Prize, £5, given by the President, Provost Thomson; 2nd Prize, 50s.; 3rd Prize, 25s.; 4th Prize, 12s. 6d. by the Society. Entry money, 2s. 6d.
COLLECTION of CUT FLOWERS (quality may take precedence of variety), 5 feet by 4 of Tabling.—1st Prize, 50s.; 2nd Prize, 20s.; 3rd Prize, 10s.
TABLE of POT PLANTS (arranged for effect), 15 feet by 5 feet of Tabling.—1st Prize £3; 2nd Prize, £2; 3rd Prize, £1.
All information can be had by applying to

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CRYSTAL PALACE, GREAT FRUIT EXHIBITION.
SEPTEMBER 4 and 5, 1891.
For Schedules and Entry Forms apply to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close on August 28.

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GRAND AUTUMN SHOW of PLANTS, CUT FLOWERS, and FRUITS, September 9 and 10.
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1892.—The Summer Show Schedule will include Classes for Stove and Greenhouse and Fine Foliaged Plants, Pelargoniums, Ericas, &c.

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WEDNESDAY and THURSDAY, SEPT. 9 and 10.
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RICHARD DEAN, Secretary, Ranelagh Road, Ealing, W.

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Tenders are to be delivered before 12 o'clock, Noon, on **TUESDAY** the 8th proximo, addressed to THE SECRETARY, H.M. Office of Works, 12, Whitehall Place, London, S.W., and endorsed, "Tender for Grass Seeds, Royal Parks, &c."
The Commissioners do not bind themselves to accept the lowest or any tender.
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August 19, 1891.

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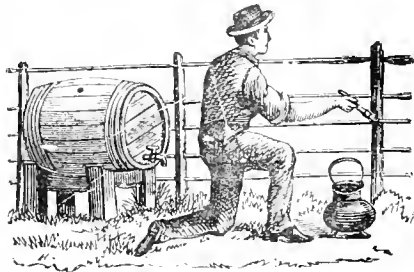
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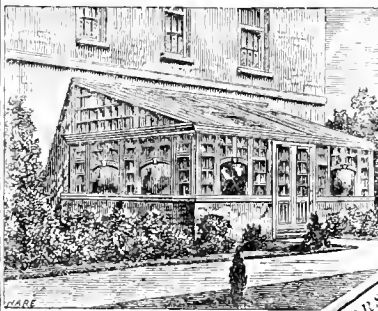
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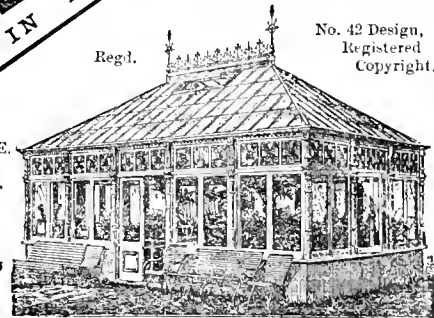
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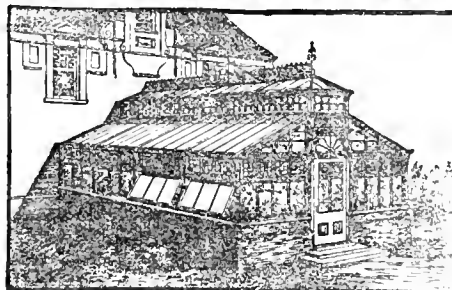
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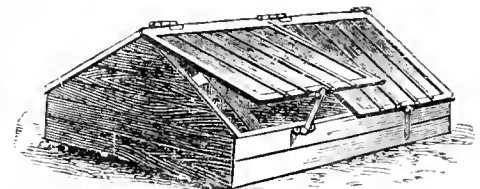
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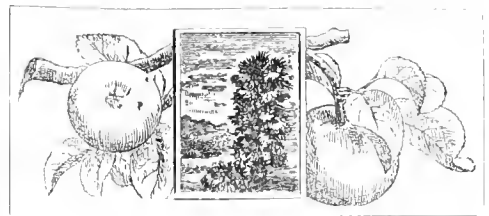
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THE
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SATURDAY, AUGUST 22, 1891.

THE WINTER OF 1890-91,
AND THE BIRDS.

UNUSUAL movements of the European bird population took place during the past winter, and many sportsmen and naturalists in all parts of the country reported the visitations of rare birds. The taxidermists, too, everywhere received for preservation species of birds which do not often reach them. A taxidermist at Manchester, for example, stuffed a whooper, or whistling swan, from the Isle of Man, and a bittern from Warrington.

Swans of several kinds were exceedingly numerous in many districts, and flocks of ten or a dozen, and even of a hundred, appeared in several parts of Ireland, especially in the north. In Pevensey Marsh, Sussex, birds of this noble species were seen, and shot during the winter. Heron Court, Christchurch, Hants, the residence of the Earl of Malmesbury, was always noted for wildfowl, but if we may judge from the past winter's record compared with that of 1888, wild swans were not so numerous in that part of the country as they were half a century ago.

The great bustard was the most conspicuous of the rare birds that visited this country during the long frost. The extensive moors and heaths which used to tempt the bustard to reside and breed in England have long since been cultivated, the marshes which harboured the bittern have been drained, and both these species have since become winter visitors, neither of them venturing to nest here. They are both occasionally met with, but the bustard especially is now a very uncommon bird. The immigration of bustards, however, during the winter months was greater than in any winter since that of 1879-80. In that season nine specimens were reported in the pages of the *Field* and *Zoologist*, since that date the only specimen reported, but not procured, was seen in Dorsetshire in 1888. In the *Proceedings of the Dorsetshire Natural History and Antiquarian Field Club*, this bustard of 1888, which appeared in the unusual month of May, is described (vol. xi.) as having been seen by a keeper in the employ of Sir Richard Glyn. "It could run," said the keeper, "at a fast rate, but did not seem to fly with ease." A description coinciding exactly with an account of the flight of bustards witnessed a hundred years ago on the Downs, near Salisbury, by Chafin, and noticed by him in his *History of Cranbourn Chase*.

In the recent visitation of bustards, not less than seven were reported in the *Field* as having been seen and mostly shot by various persons in different districts. If these big birds had found their way to our fields by virtue of what is called "hereditary memory," they would certainly



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re-visit their old haunts, such as the heaths and downs of Norfolk and Dorset, and the wide expanse of Salisbury Plain—and they would come in the breeding season. But the instinct of season and locality, which brings back the nightingale and swallow every year to the same copses and chimneys, almost to a day (about April 13), may be lost, it seems, in about a hundred years. This kind of instinct is at any rate extinct in the bustard, the bird having wandered hither and thither without the least knowledge of its habitats of the last century. One was shot near Southminster, Essex, another in Christmas week in Carmarthenshire weighing 8 lb., another near Romsey, Hants, by a gentleman who was out partridge shooting when he saw a wild goose, as he imagined, rise from the centre of a field and fly slowly away. It was afterwards bagged when flying 20 yards above the sportsman's head, and it proved to be a female bustard weighing 10 lb.

The neighbourhood of Winchelsea also contributed its bustard to the season's bag; so has the country near Norwich and the Chippingham district, Wilts, the bird shot in the last-named locality measuring 5 feet from tip to tip of wing, and weighing 9 lb.

All the bustards of the present visitation were females, as they were, save one male, at the time of the immigration of eleven years ago; so it would seem that the male birds are either more wary and keep out of harm's way, or that the sexes do not travel and consort together, or did not do so in visiting the *terra incognita* of England last winter. In the case of several species of birds, the sexes sometimes separate during migration, the hen chaffinches, for instance, remaining in the north of England when their past and future mates have departed for the south.

On the road between Stratford-on-Avon and Warwick, and within a mile of the former town, a golden eagle, mobbed by rooks, was seen gracefully wheeling above a small covert near the road. After perching on an Elm tree, and affording a spectator, a naturalist, an opportunity of observing its markings, it sailed away northwards, in the right direction for the crags and peaks of Scotland, where, we may hope, it found a much safer sanctuary than it could look for in Warwickshire.

Two species of wild swans, Bewick's and the whooper, took up their winter quarters in Scilly, on a sheet of water in front of the windows of Tresco Abbey, remaining for months, whereas wild swans in Scilly have usually remained only a few hours. In November five were seen, but they wended their way without being identified. On December 5 two whoopers appeared, were shot at, and were not seen again. Then twelve swans settled on one of the two pools at the Abbey, and, as wild swans are not often met within the limits of the British Islands, the sportsmen of Scilly found the opportunity too good to be lost, and four of the Bewick swans were shot. Four of the remaining eight were not seen again, the other four reappeared next morning, apparently unperturbed, though they were found on the very spot where they had been shot at the night before.

We may presume that these intelligent birds understood the exigencies of such a winter as the last, and they preferred grass in Scilly, and abundant waterweeds, taking their chance of powder and shot to the certainty of starvation in the frozen waters of the North. The hospitality they seemed to crave was granted them, and, finding themselves unmolested, they settled down for the winter, and in a few days they were

joined by six whoopers which had been previously observed flying about the islands.

An excellent opportunity was now offered of observing some of the habits and characteristics of wild swans, at home on a sheet of water only 200 yards or 300 yards from a window, where their movements could be minutely observed by means of a mounted telescope. Mr. Jenkinson, of Crowborough, Sussex, who told the story of this rare inspection in the *Field*, has been all his life an enthusiastic collector of birds and observer of their habits, and has enjoyed some thrilling moments when engaged in these pursuits, but he admits that he never experienced so keen a sense of delight, amidst his natural history inquiries, as when, during several weeks, he watched the habits of the wild swans at Tresco Abbey.

Two whoopers were reluctantly shot to add to the collection, but the swans had become so accustomed to the place that they seemed only slightly scared by the attack. For a few days only they remained on the sea in the daytime, and then settled down for the winter, with the telescope as the only tube turned in their direction. There were now eight wild swans under inspection, four Bewick's and four whoopers, a graceful group—the last-named members of which, in the eyes of all the spectators, quite outshone their companions for grace and beauty. The longer neck and body of the whooper, and its more elegant head, gave the other species in companionship with it, almost a common appearance by comparison. Wild swans differ from the tame, or mute species, by swimming with the necks erect, and, however graceful a curved neck may be, there is a fascination, such as tame birds do not inspire, in seeing the wild species wary and watchful, with necks erect and heads lifted to detect the approach of danger. The tame swan, under similar conditions, would probably carry his head as high as he could. He is a beautiful bird, but after all, when one compares him with his wild congener, that habit of sailing about with the neck curved, looking out for bisenits, fussy, and inclined to hiss, savours rather of a poultry-yard. The charm of the wild swan may be partly due to the fact of its being wild and rare, and an altogether unusual object to be seen from the windows of one's own or any other house. Such an inspiring spectacle was seen last winter by a very few persons in Great Britain, less perhaps than a dozen, and it may be worth noting for its novelty, and not likely to be again witnessed for years.

The two species, Bewick's and the whooper, kept near together, sitting all day in the shallow water near the edge, only a few yards apart, but never mixed up for more than a moment or two. To their credit, be it said, they were perfect friends, associating on terms of social equality, but, with great good sense, they clearly obeyed some unwritten law of precedence, and if any question of being in each other's way arose, the Bewick always gave way to the whooper. They proved very tolerant of other birds, and even when feeding took no notice of the numerous coots moving about in their midst, and sometimes swimming close to their beaks, helping themselves apparently to the weeds which the swans dragged to the surface of the shallow water. They all fed most at night, and the whole of them would often remain in the shallows the greater part of the day, standing on one leg with their heads turned over their backs, as if in sleep. But it seems to have been a very wakeful and a watchful sleep, for the telescope invariably revealed one eye always open, and the heads were up the instant man or

beast appeared in sight. The native place of the visitors, was, of course, unknown, but it must have been in high latitudes, where agriculture does not flourish, for it was observed that cattle excited their fears as much as man himself.

They soon became accustomed to the passing of carts at a reasonable distance from the banks, and to the loud talking of the drivers. Every evening they all flew away to a larger pool over the hill, where they passed the night, returning in the morning. The whoopers were in the habit of starting into flight without a cry, but the other party made a little ceremony of the matter, first one uttering a musical cry, then another, and presently all would join in chorus, like a pack of hounds in full burst, and then they were off. In the morning the whoopers, on alighting, would spend some time in splashing and flapping about, and in daintily dressing their plumage. One could see at a glance that the neck of the wild swan is more slender than that of the coarser mute. The alighting of the birds after flight was a fine sight. One after the other, the two parties would sweep down out of the air, and settle on the water—a performance not to be forgotten by any whose good fortune has enabled them to witness it.

A very large number of other unaccustomed birds of a less conspicuous kind might be named, but they only read the same lesson of the freezing out of these birds in their usual haunts, and of their wanderings in search of food. A sadder story, with the same moral, might be told of the enormous mortality amongst our native birds, starved and frozen, as they were, on their perches, in rabbit burrows, or in the crevices or the ivy of old walls, during the great frost of 1890—91. Gilbert White said of the remarkable frost of 1776, that the partridges were so thinned, that few remained to breed the following year H. E.

ORCHID NOMENCLATURE.

The August number of the *Kew Bulletin* contains a pronouncement as to what Kew is, and what it is not prepared to do with reference to the naming of Orchids. A general review of the situation before and after the death of Professor Reichenbach is given, and then comes this statement:—"It is the business of botanical science to furnish such plants with names under which they can be recognised, and with technical descriptions, by means of which the names can be fixed, and the plants identified."

In these days of "cultural strains" and hybrids, however, it is obvious that something more is required, and this something more Kew is, as we understand, not prepared to undertake; indeed, when the Kew authorities were asked to appoint a representative to act on a committee appointed by the Royal Horticultural Society to consider the rules, which in the opinion of the committee should be followed in the naming of Orchids for garden purposes, the application was met with a distinct refusal from the Director:—"This is a task," he wrote, "which the . . . Orchid Committee is well qualified to take up. But the principles of botanical classification have nothing to do with the matter, and botanists should, in my judgment, not meddle with it. It appears to me that Orchid growers will create their own standards of excellence with regard to the cultivated varieties of Orchids, just as with any other florists' flowers. Such a standard will be a matter of taste and judgment, not of science, and horticulturists are entitled to name on a purely horticultural basis any form

which they wish to recognise as distinct when they have secured adequate evidence of its permanence. . . . Such forms should be distinguished by vernacular names, so that they may be no longer confused with botanical varieties, and the Committee should register such names as having its authority, accompanying the name in each case with such distinctive marks as may serve to define it. In the work of the Committee, as above defined, I do not see that any member of the Kew scientific staff could give any effective assistance. I must further point out that our officers are already hard-worked, and the absence on extraneous duties of those who work during prescribed official hours is contrary to the regulations of the Civil Service."

It is well to have definite statements like this, and it is easy to see that from the writer's standpoint they are perfectly reasonable, but the matter must be looked at from other points of view. The interest of varieties and of hybrids of known parentage is assuredly as great as that of so-called species, and an accurate description and record, under existing circumstances, is just as great from a scientific point of view as that of assumed species, if not more so. The horticultural value, or the importance, of Orchids as "florists' flowers" is quite another matter, and one which, as the Director says, is entirely within the competence of the Orchid Committee, although that body as such is not competent to decide upon the intricate scientific questions above mentioned, and is, as we believe, not disposed to meddle with them. In the meantime, a new departure has been taken in the *Bulletin*, by the publication of the first decade of "New Garden Orchids," by Mr. Rolfe, some notes relating to which are subjoined.

NEW OR NOTEWORTHY PLANTS.

BOTANICAL descriptions of the following ten species are given in the August number of the *Kew Bulletin* by Mr. R. A. Rolfe:—

PHYSOSIPHON GUATEMALENSIS, Rolfe.

A small species, which appeared with *Odontoglossum grande*, in the Glasnevin Botanic Garden, where it flowered in June, 1890, and again during the present year. On each occasion it was sent to Kew by the Curator, Mr. F. W. Moore, for determination. It is nearly allied to *P. Loddigesii*, Lindl., and has similar deep yellow flowers, but is smaller in all its parts, especially in the much shorter tube of the sepals.

BULBOPHYLLUM DENTICULATUM, Rolfe.

A small species from Sierra Leone, sent to Kew by Mr. James O'Brien in May of the present year. The flowers are about 3 lines long, and are borne in a somewhat drooping spike. The sepals are pale purple-brown, the petals white, with strong purple mid-nerve, and very narrow purple denticulate margin, and the lip orange. The name is given in allusion to the denticulate petals.

BULBOPHYLLUM NIGRIPETALUM, Rolfe.

A very distinct and remarkable species, which has the petals and lip of a uniform purple-black, in allusion to which the name is given. It was originally introduced from West Africa by Messrs. F. Sander & Co., of St. Albans, and grown by Mr. J. O'Brien, with whom it has flowered on two or three occasions. In habit it somewhat resembles the preceding, but has longer racemes; the scapes and ovaries are glaucous-green, and the sepals pale yellowish-white, with light maroon lines.

MEGACLINIUM CLARKEI, Rolfe.

A native of West Africa, which has flowered in the collection of Major Trevor Clarke, of Daventry, during May of the present year. It is allied to *M. oxypterum*, Lindl., but differs in certain botanical

details. The flattened rachis, which is the most remarkable feature of the genus, is four lines broad, light green down the centre with purple-brown spots, almost wholly purple-brown near the margins, and the flowers somewhat similar in colour.

MEGACLINIUM LEUCORACHIS, Rolfe.

A remarkable species, with the rachis nearly white, quite unlike any other, and therefore named in allusion to this character. The flowers are deep yellow. It appeared with Sir Trevor Lawrence, Bart., M.P., of Burford Lodge, Dorking, and like other species is probably a native of some part of Africa. It was sent to Kew for determination in May, 1890.

PHOLIDOTA REPENS, Rolfe.

A small species with light flesh-coloured flowers, sent to Kew by Mr. J. O'Brien in June, 1890, and again during the present year. It is a native of some of the hills of India. It is allied to *P. Griffithii*, Hook. f., of which it may be an usually procumbent variety, with differently coloured flowers.

EPIDENDRUM MOOREANUM, Rolfe.

Over 200 species of *Epidendrum* have been described since the publication of Lindley's *Folia Orchidacea*, but the genus does not appear to be yet exhausted. The present novelty exists in several collections, and has been sent to Kew for determination, by Mr. F. W. Moore, Mr. W. Bull, Messrs. Hugh Low & Co., and Sir Trevor Lawrence. It belongs to the section *Eacyclium*, and is allied to *E. stellatum*, Lindl. The flowers are very fragrant, the sepals and petals light green, and the lip deep purple with light green margin. It is said to be a native of Costa Rica, and is named after Mr. F. W. Moore, of Glasnevin, who first sent it to Kew.

POLYSTACHYA BULBOPHYLLOIDES, Rolfe.

A minute and very anomalous species, with the habit precisely of *Bulbophyllum*. It is a native of West Africa, and was sent to Kew by Mr. J. O'Brien, in July of the present year. The small diphyllous pseudobulbs are borne at intervals on slender creeping rhizomes. The flowers are white except two orange spots on the lip, and a light purple margin to the column. The petals are reduced to a pair of minute fleshy tubercles, but otherwise the flowers are identical with those of *Polystachya*.

RENANTHERA IMSCHOOTIANA, Rolfe.

A handsome species, allied to *R. coccinea*, Lour., and *R. Stortii*, Rehb. f., but with flowers in simple racemes, and various structural differences. It was sent to Kew by M. A. Van Imshoort, of Gand, Belgium, during July of the present year, with the information that it was received with *Aerides Godefroyae*, Rehb. f., from Messrs. F. Sander & Co., of St. Albans, and is believed to be a native of the same country. The flowers are chiefly of a reddish-vermilion shade.

PELEXIA OLIVACEA, Rolfe.

A native of the Andes, sent to Kew by Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, in April 1890, where it flowered about a year later. It is one of those plants formerly referred to *Neottia*, though erroneously. The leaves are dull olive-green, with a broad irregular silvery band on either side of the midrib, the scape, ovary and sepals also olive-green, the petals and lip white, with some yellow on the mouth of the tube formed by the union of the column with the stalk of the lip. *R. A. Rolfe.*

SCILLA BIFOLIA VAR. WHITALLII, Baker.

Mr. E. Whittall, of Smyrna, has just sent to the Royal Gardens, Kew, bulbs and dried specimens of a very distinct new variety of *Scilla bifolia* from the heights of the Taurus. It has as many as a dozen bright blue flowers in a dense raceme. The leaves are three or four in number, instead of two, as in the type, and they are narrow, linear (not above a twelfth of an inch broad), channeled down the face, and fully developed at the flowering-time. I propose to name it as above, in recognition of the many interesting plants which Mr. Whittall has sent from various parts of Asia Minor to England during the last few years. *J. G. Baker.*

WELBECK ABBEY GARDENS.

(Continued from p. 186.)

It would be interesting to trace the history of this place, and how it came to be connected with the Dutch family, the Bentincks, but the place has so many claims from a horticultural and landscape point of view, that it will be better to plunge *in medias res* at first. The park has been a park from time immemorial, of which fact some of the old Oaks are the best proof. The Greendale Oak, as it is called, must be 800 years old, it used to be 33 feet in girth at the bottom, and its branches used to cover a space of 2700 square yards. Other famous trees are the Duke's Walking-stick, the Two Porters—so-called because there is a gate between them, and a clump of gigantic specimens called the Seven Sisters. The park is 10 miles in circumference, and contains forty-one lodges, all goodly houses built of Streetley stone.

I must ask my readers to start where I started. This was from the quadrangle outside the garden walls, an open space, with substantial stone buildings all round, the most prominent of which was an erection that looked somewhat like the Crystal Palace, and used as a riding-school. The central aisle is roofed with glass, and the two side aisles, with their fine groined roofs, look like a cathedral. A tunnel, well lighted, leads from this to the Abbey, a distance of a mile and a quarter. This was the work of the late Duke, as was the work of tunnelling the public footway through the park. The underground passage leads out into a glass corridor 140 yards long. Along the whole length of this, Roses are planted out in tubs, which are 2½ feet every way. The Roses have not covered the roof yet except at the top; when they all grow up, the effect will be one of the most magnificent floral displays to be seen anywhere. I believe that as many as 400 *Maréchal Niel* blooms have been cut off from these plants in one day. As Roses on such a scale have hardly been imagined before, a list of those mostly used may be welcome. They are *Madame Lambard*, *W. A. Richardson*, *Madame de Watteville*, *Rubens*, *Marie Van Houtte*, *Souvenir d'un Ami*, and *Anna Olivier*. Near this corridor is a sunken Rose garden 2 acres in extent; there is a wall all round planted with *Marie Van Houtte*. In front of the wall all round is a herbaceous border, enriched with all the treasures of Mr. Backhouse's collection. There are twenty-four large beds cut in the lawn in the centre, each devoted to a single variety of hybrid perpetual, the colours being grouped so as to contrast. The sorts used are *Etienne Levet*, *La France*, *Madame Victor Verdier*, *Anna de Diesbach*, *Marshall Wilder*, *Dr. Andry*, *Marguerite Brissac*, *Madame Gabrielle Luizet*, *Marie Finger*, *La Rosière*, *E. Y. Teas*, *Merveille de Lyon*, *Mrs. Harry Turner*, *Madame Eugène Verdier*, and *Baron Haussmann*. On account of being so well sheltered by their sunken position, they never fail to do well in any season.

Emerging from this pleasant retreat, one comes upon a broad gravel walk, with close-cropped lawns on either side, and leading to the west front of the Abbey. A pretty effect is given by the graceful curves of the shrubberies which accompany the walk. Close to the Abbey are the chapel and library, and a fountain. In front of the house, on the south side, is a broad stretch of green sward, which is used as a cricket ground, and in the background the old Oaks of the park. On the left the lake seems like a wide silvery river disappearing among the trees; the outline of the lake is very effective and bold. On the east side the lawn slopes down to the lake. There is a tablet here erected to the memory of Jane Cavendish, who held out against the Parliamentary army, and was treated with great courtesy by old Noll.

It is on the remaining side, however, that the great beauty of Welbeck Abbey lies. Here pleasure grounds have been laid out on a scale only found in one or two places besides, and thousands of *Rhododendrons* and shrubs planted. There are avenues of nearly every well-known species of Conifer. The longest avenue is of young Limes. On either side of

the path leading down this, are flower beds and circular clumps of Rhododendrons, more than 100 of each; the blaze of colour from such an enormous number of beds simply defies all description. This walk ends in a Laurel bank, close to the foot of the lake, which with great taste has been formed into an aquatic garden. Here Nuphars and Nymphæas have been naturalised, together with nearly all the hardy aquatics. The bank above has been utilised as a rock garden, and planted with a choice collection of suitable plants, many rare species being represented. Running parallel with the avenue of Limes is a grass walk, leading to the Rhododendron valley. Near this walk are some underground greenhouses, which one could easily pass without noticing. These are in connection with the longest tunnel, and are used for growing the bedding plants, in order to save the trouble of transporting them from the kitchen garden. The number of plants required is, as may be imagined, enormous, but the able foreman of this department seems well able to cope with the demand. The most used Felargoniums are Corsair, Crystal Palace, Black Prince, and Mrs. Holden. The glass roof is on a level with the ground; underneath this, on a trellis, is spread about 6 inches of leaf-soil, in which the young Geraniums and Fuchsias are taken out of their small pots and plunged. Being so near the light, they were growing most luxuriantly, and would evidently make finely-rooted plants by the time they were wanted. One had to approach to look at them from the tunnel by a trap-door and ladder. The number of Lobelias and Sunray Fuchsias grown, I am afraid to say, lest I should be accused of exaggeration. The Rhododendron valley, leading back to the Abbey, must have been an enormous undertaking. On either side is a wide shelving bank of Rhododendrons, and as the natural soil is not suitable, thousands of loads of prepared soil had to be carted into position. Where this soil has been renewed, the plants are more vigorous—so much so, that it is intended to renew the soil all along. This valley forms the approach to two most perfect glasshouses. The first is a Palm-house, see fig. at p. 195; it is almost square, of a great height, and supported by two rows of pillars. Huge Livistonas, Chamæropes, Cycads, and Dicksonias are growing in sunken tubs. The walls are all covered by Begonias and Ferns growing out from soil, held to the walls by wire-work; and so well tended that there is not a weak place anywhere. Of the Ferns the different Blechnums and *Stenochlæa scandens*, with long dimorphous fronds borne on scandent rhizomes, were very conspicuous. At the base of the wall is Ferngirt rockwork, and in the corners there are Creepers on the roof, a cinnabar-coloured *Abutilon* being gorgeous with colour at the time of my visit. A large plant of *Medinilla magnifica* was also loaded with pink blossoms.

The second house is constructed in the same way as its fellow house, but is devoted to Tea Roses. It was impossible not to parody Coleridge's line, and exclaim, "Roses, Roses, everywhere." Roses hanging in wild *abandon* from the roof, Roses jealously entwining the pillars, Roses garlanding the arches, and Roses planted out, covering all the ground-floor. The effect of this large house of Roses was entrancingly lovely. The plants were in most robust health, without a sign of mildew, and covered with blooms. As in the garden of hybrid perpetuals, the Teas are planted out in this house in beds of one variety, and great taste has been shown in the grouping of the colours. Madame Lambard, which is the duchess' favourite colour, is perhaps the most grown, but any quantity almost of blooms of *Etoile de Lyon*, *Souvenir de Madame Pernet*, *Président*, *Souvenir d'un Ami*, and *Niphetos* could have been gathered. The house has been termed a "paradise of Roses"—it really deserves the name. A third house, not quite so large, is devoted to Camellias, which are also planted out. As these flowers are only gay for a small part of the year, Japanese Maples have been planted among them, and have a very enlivening effect. Round the house

is a staging for florists' flowers, occupied at the time of my visit by *Cinerarias*.

The other features of the grounds on this side, where they are most extensive, would be well worth detailed description, if space allowed. They chiefly consist of a series of avenues with broad grass walks between. The style is a little formal perhaps, but their great length always gives them an air of dignity in keeping with the place. The most striking of these avenues is a triple one, the back row are towering slender *Thuia gigantea*, the centre bushy Yews, and in front a row of dense dwarf golden *Retinospora obtusa*. These fine avenues are quite close to the three houses described above, but they are so sunken and hidden away that not a trace of them is visible.

No one should leave this orderly and magnificent estate without going to see the "The Winnings' Almshouses." They were built at the Duchess' request from the winnings of Ayrshire, Donovan, and Memoir. They made one envy the lot of the *employés*; no horticultural scribe foresees such a provision for his declining days. *Vagabond*.

THE HOME OF THE HOLLY FERN.

NOT being an ardent climber of mountain summits, it has long remained an unfulfilled wish to visit the Holly Fern (*Polystichum lonchitis*) in its native haunts, for although we have frequently been within eyeshot of the rugged hillsides which we knew it frequented, the one element of an experienced and congenial guide had always been lacking. Hence the fear of bogs, bad weather, or unlooked-for slips, had invariably "sicklied resolution o'er with the pale cast of thought," and confined ambition to lower levels. On July 1, however, of this year, fortune combined to vanquish every difficulty, as not only did the clerk of the weather smile most decidedly upon our plans, but no fewer than three congenial companions were to the fore, all familiar with the district. Among them was Mr. Donald Haggart, of Killin, an incomparable guide, as he not only knows every foot of Ben Lawers and his less lofty neighbours, but what is even more essential to true enjoyment of such a trip, he has a thorough acquaintance with the thousand and one gems of alpine vegetation which cover in a myriad forms the seemingly barren slopes as well as the rocky boulder-covered peaks, seamed with a thousand tiny cascades into which they gradually merge as the cairn-crowned summit is neared. Leaving Aberfeldy shortly before 8 o'clock, we drove along the lovely road leading thence to Kenmore, a name meaning literally the "big eed" of the lake. There, after getting a splendid view of Taymouth Castle, the home of the Breadalbanes, through a vista of matchless trees, the road suddenly turns to the right, and brings us into full view of Loch Tay stretching westward for some 15 miles, and bounded on either side by steeply sloping hills, backed up by the boldly swelling shoulders and sharper culminating peaks of such giants as Ben Lawers, Ben More, Ben Voirlich, and others of that ilk. To the right, the densely wooded Drummond Hill stretches for several miles along the loch, and forms an admirable contrast to the opposite heights which are almost treeless, bare green slopes only dotted here and there with farms and fields, mere oases of cultivation on deserts of moorland, and seamed with glens and watercourses, which in the distance look the merest wrinkles on the face of Nature. Following the lakeside road along the foot of Drummond Hill, we drive for miles under the shadow of its trees, through which we enjoy a constant series of glimpses of the silver surface of the loch. Here, as indeed all along the road, the stone dykes and shady slopes absolutely teem with Ferns, though the species, as compared with the southern counties, are few. The three predominating species are the Lady Fern (*Athyrium filix-femina*); the Male or common Buckler Fern in two of its forms (*Lastrea pseudo-mas* and *L. filix-mas*); and the lemon-scented Buckler Fern (*L. montana*). These

literally swarm in every sheltered spot, and as the result of two days' hunting in the district, we have added to our collection *L. montana truncata*, a curious variety in which the frond and all the pinnæ end abruptly with a small thorn protruding by way of finish; and *L. montana congesta*, a remarkably pretty variety, dwarfed to a quarter of the normal size. The truncate form, curiously enough, we found twice in spots nearly a mile apart, after a special hunt for it on the strength of a previous find of a frond partially affected on an otherwise normal plant, which led us to believe in the existence of the constant form in the locality, and thus to hunt specially for it. We are, however, off the track of the Holly Fern, in thus digressing. About 10 o'clock, after a slight shower, the sun came out brightly, and drove away every vestige of cloud, Ben Lawers himself deigning, after a suitable dignified delay, to divest himself of his nightcap just as we descended from our machine (Anglice dogcart) at the "Lawyer's Inn" at his foot. Putting up our horse here, and arranging for the due satisfaction of mountain appetites on our return, we sallied forth and began the ascent. Striking at first straight up the slope, we speedily reached a peat road of a very rough-and-tumble description, plentifully rutted with little streams, which we manfully ignored, the certainty of acquiring two shoes full of water per man before long, rendering us callous to the risk of wet feet. In a few minutes a brawling burn full of water from the heavy downpour of the previous night was crossed, and afforded a short spell of hunting among a dense fringe of *L. montana*, intermingled with the Hard Fern (*Blechnum spicant*) which covered its banks profusely at intervals. "Excelsior," however, was the constant cry of our guide, and leaving this hunting field, we speedily reached the grassy rushy moorland slopes above, where Ferns were conspicuous by their absence, the tiny Moonwort (*Botrychium lunaria*) alone rewarding our search.

Saxifrages, Sedums, various *Potentillas*, a *Geatian*, and an infinite diversity of grasses, rushes, sedges, mosses, and lichens now covered the ground, or rather formed it, to an indefinite depth, building up in their decay the very peat upon the surface of which, coral fashion, they were throwing and forming their colonies, alternately bathed in cloud mists and sunbeams, which can be seen from a distance sweeping, billow-like, over hill and vale. Here and there among the coral-like Lycopods and Staghorn mosses various species of sphagnum do their best to ape the sponges. Here is a dense ruddy hemispherical moss, dotted here and there with the pretty but horrible little Sundew (*Drosera rotundifolia*), side by side with its equally murderous insect-devourer, *Pinguicula vulgaris* throwing up its innocent-looking violet flowers from a cluster of leaves which apes the star fishes. Yonder, another member of the sphagnum family forms for some yards an emerald-green carpet of enticing softness, of which a warning cry from our guide bids us beware, for this is a trap of a larger sort, and woe to the human fly who puts his foot upon its treacherous surface, which covers a bughole of unknown depth and unlimited swallowing powers, and for all its apparent verdancy, is capable of "taking in even the canniest in all Scotland," which is saying a great deal for it.

Avoiding the snare, however, and following our guide, who punctuates every anecdote with a (to us) new discovery at his feet, we gradually approach the 2000 feet level, and here we are told to look out for the first true alpine Fern, viz., *Polypodium alpestre*. Scarcely a dozen yards further we espy a fine little bunch of plants under the lee of a big boulder by the side of a small stream we are skirting, a Lady Fern to all appearance, but somewhat more soft and succulent in texture. The lens, too, reveals speedily the naked sporeheaps, which, botanically, rank it with the Polypodies, despite its undoubtedly stronger claims to kinship with the *Athyrium*. More and more we found as we proceeded, its presence always being determined by that of loose lying boulders, under the shelter of which the plants could nestle.

A few hundred yards further, and we found ourselves on a slight declivity, leading down to a shallow

tarn or loch, which lies in the midst of a bold amphitheatre formed by the topmost ridges of Ben Lawers, whose cairn-crowned summit rose some 1500 feet to our right. The cliffs and slopes were sparkling with long tortuous lines of snowy cascades,

for the species was over, and that our special search for varieties was beginning. Most of the plants were fairly hidden in deep crevices, due, we imagine, to partial depletion by visitors, as, later on in our search, in less accessible spots, we found it growing

was bagged, forming, with the normal, a very fair quartette, considering the reputed constancy of the species. The Holly Fern here was accompanied by a profusion of small plants of the Hard Fern (*Blechnum spicant*), the Broad Buckler Fern (*Lastrea dilatata*), in a very lax and delicate condition; *L. montana*, very small; and here and there a diminutive *L. filix-mas*. All these species were obviously very near the border of their possible existence. *Polypodium alpestre*, the Oak Fern (*P. dryopteris*), the Beech Fern (*P. phegopteris*), and the brittle Bladder Fern (*Cystopteris fragilis*) were, however, quite at home, while two plants of *Woodsia ilvensis* were unexpectedly found among the rocks, instead of in the steep cliffs to which it was supposed to be confined, but on which it could not be discovered after long search. The green Spleenwort (*Asplenium viride*) literally swarmed in every chink, and even in the grass close to the rocks.

From the position and conditions in and under which the Holly Fern was thriving in this habitat, it is clear that the essentials for its cultivation are constant moisture at the roots and thorough protection of the crown from the sun. In all cases we found the crown well away from the light, and the deeper the chink the better. The roots were generally embedded in a loose mass of rock debris and vegetable mould of a peaty character—a compost implying perfect drainage. The climatal conditions at this high level imply constant aerial humidity, as almost every passing cloud means a Scotch mist of a more or less drenching character. In the drier counties of Great Britain, therefore, it is obvious that a sheltered moist position must be selected, and in our own experience we have found a close frame facing the north to suit it admirably, while if planted in the open and left to itself, a dry spell was apt to be fatal even to well-established plants. As the species has afforded very few decided varieties as compared with the two other indigenous species of *Polystichum* (*P. aculeatum* and *P. angulare*), which have yielded an extraordinary large number of forms, our short experience leads us to surmise that this is largely due to its much greater inaccessibility and consequent immunity from examination by varietal experts. Among the plants we secured there were very distinct departures from the recognised normal type, and even that type was nearly equally divided into two forms, one distinctly spiny and Holly-like and the other smooth-edged, the spines being quite rudimentary except at the apices of the pinnae. A crested form has been found on Ben Qui by Dr. Craig.

A subsequent search on the hills nearer Aberfeldy, resulted in the discovery of a fair number of Holly Ferns at a level of under 2000 feet in a habitat, otherwise of similar character to that of Ben Lawers and here, curiously enough, we found two plants of the Moonwort (*Botrychium lunaria*) growing on a narrow ledge of a perpendicular cliff where we expected to find *Woodsia ilvensis*.

On our return journey southwards, we were fortunate enough to find in Strathblane a very distinct and beautiful new form of Lady Fern (*Athyrium filix-femina revolvens*), in which the apices of frond and pinnae are curved backwards into semi-circles, the pinnae well rounded, and the pinnules convex. It is certainly one of the most graceful types we have seen. *Charles T. Drury, F.L.S., Fernholme, Forest Gate.*



FIG. 27.—EUCRYPHIA PINNATIFOLIA, HARDY SHRUB: FLOWERS WHITE, STAMENS YELLOW.

rashing down to feed the lake, upon the hither side of which, among a myriad huge rocks which were heaped up around its margin, we found the home of the Holly Fern. Immediately we came within eye-shot, a plant here and another there, peeping out of the chinks and crevices, announced that our search

openly in the grass; full-grown plants, too, were very rare, only one, with 18-inch fronds, coming under our notice. Not long had we searched when a very promising seedling, with distinctly confluent pinnae, was observed. A densely imbricate form next attracted notice, and finally a very spiny foliage type

TREES AND SHRUBS.

EUCRYPHIA PINNATIFOLIA.

A FEW weeks ago some one was inquiring if this shrub was still in cultivation, and if it was hardy enough to flourish in this country. So far as I know, it has not been lost to cultivation since it was first introduced by the Messrs. Veitch from South Chili, some fifteen years ago, and has since become slowly distributed throughout most of the good gardens in England and Ireland, and parts of Scotland. Evidence of its perfect hardiness and adaptability to our

climate is afforded by the flourishing specimens in the Coombe Wood nursery in Surrey, where the shrub is at present in flower, and very beautiful it is with its great white blossoms, reminding one of St. John's Wort (*Hypericum calycinum*) in their form, though not so large. It is a deciduous bush, some 4 or 5 feet high at Coombe, but grows taller in Chili. The leaves are pinnate, and of a very deep glossy green. The flowers are produced in clusters on the upper parts of the young shoots, and their snowy whiteness, with the feathery tuft of yellow-tipped stamens, is very striking (see fig. 27). It lasts a long time in flower, and as it blooms at this season, when so few other hardy shrubs do, it is the more valuable in the garden. At Coombe, it is fully exposed, and has withstood quite unprotected many severe winters, and even the last did not affect it in the least. It is a beautiful shrub to have in one's garden, and quite out of the ordinary run. *W. G.*

DAPHNE CNEORUM.

Daphnes are plants well fitted for decorating the conservatory, shrubbery, or rockery of any garden; the indica section are specially valued on account of their delicious odour, combined with the brightness and usefulness of their flowers, either in a cut state or remaining on the plants, lasting in perfection a considerable time. *D. Cneorum* is one of the most pleasing and desirable of small trailing hardy shrubs we have; it is particularly adapted to serve as an edging to taller-growing plants, just before the Azaleas, Rhododendrons, and *Cytisus* burst into bloom—a time when there is a dearth of showy-coloured flowers. A very important point is drainage: if this is neglected, and the plants kept in a very damp situation, it will be almost impossible for them to thrive. They delight in a moist soil, but on no account should the water become stagnant at the roots. The soil which favours it best is of a peaty nature, mixed with well-decayed leaf-mould, but it does tolerably well with loam and peat. Another purpose for which it is suited is forcing, for with but very little coaxing it can be had in bloom at the end of February. For this purpose they should be grown in pots, and kept plunged outside all through the summer, freely supplied with water, especially about the foliage; and liquid-manure given to the roots occasionally will greatly add to the strength of the plants. Very little heat is necessary to have them in bloom by the time stated, and one advantage it enjoys over some plants that are forced, they will keep a long time in full beauty, and can be used either for button-holes, bouquets, or table-decorations. The flowers are borne in terminal clusters on almost every shoot, the colour being of a rich rosy-pink, and delightfully scented. It rarely exceeds 9 inches to 1 foot in height, and is best propagated by division, which should be done in spring, or by layering; for the latter, all that is necessary is to cut the shoots on the underside and press a little light soil into the cut, and then with a peg make it fast in the soil, and water occasionally.

LEIOPHYLLUM BUXIFOLIUM.

Although this ericaceous plant has been in cultivation since 1735, it is very rarely met with in gardens. It is occasionally found under the name of *Ledum myrtifolium*, or more popularly as the Sand Myrtle. It is one of the best shrubs that can be found for an edging to small borders or beds, being very seldom more than 1 foot to 15 inches high, and as it is of slow growth it can be used for this purpose for years without the necessity of pulling up the plants. The foliage is neat, being of a dark-green colour, and much resembling a small-leaved Box, hence the name *buxifolium*. It is in every respect a neat free-flowering Evergreen, but to a great extent has been overlooked by planters; it looks well associated with *Rhododendron hirsutum* or *Kalmia angustifolia*. *Rhododendrons* blooming a week or two later than *Leiophyllums*, the bed is kept a pretty show of flowers for about six weeks. As a rock plant it is quite at home, it yields a supply of pretty flowers in May and June, and like *Daphne Cneorum* the flowers keep a long time in full beauty; the

flowers, which are borne in dense terminal clusters, are tinged with pink in the bud state, but when fully expanded they are almost white. It grows wild on the mountains of Virginia and New Jersey; it is rather difficult to increase the stock by cuttings, as they do not root freely. In August, young shoots that are thoroughly ripened should be taken with a heel of old wood, removing the bottom leaves; they should then be placed in clean cutting pots, with drainage half-way up, the soil being good peat and coarse silver sand, and then stood on ashes in cold frames, and providing each pot with a bell-glass, which must be wiped out at least every other morning, care being taken to have them shaded from the sun. When a callus is formed, they may be removed to a house with a temperature of 55°, which will greatly assist root formation. It is propagated more extensively by layers, and whenever seeds are procurable they should be sown as soon as possible in soil similar to that recommended for the cuttings, and the pots placed in gentle heat. *H.*

PLANTS FOR SHADED PLACES BELOW TREES.

The St. John's Wort, *Hypericum calycinum*, is indigenous to Scotland and Ireland, where it seems to thrive best and reproduce itself with the greatest of freedom on dry banks and bushy places along the margins of woods and fields, and seems perfectly at home under the shade of trees. As it is a hardy native shrub, it is highly suitable for planting on bare shady places under trees, where it is desirable to establish a covert and improve the scenic beauty of the spot. The plants to be used had better be prepared in a home nursery or elsewhere, by transplanting them several times in order to promote the formation of bushy roots, which is a matter of much importance as a means of attaining success when they are planted out where they are to remain. The spots where the plants are to be inserted should be broken up with a pick, and a little fresh soil added, which will prove beneficial in promoting their growth at the start. The plants may be successfully planted out any time during fresh genial weather, after they have matured their growth in autumn. The common Irish Ivy (*Hedera helix*), and the Periwinkle (*Vinca minor* and *V. major*), are likewise suitable, and may be treated in a similar way. In a mixed plantation in the Lough Neagh district of Ireland, some of the sedge tribe of plants make capital covert below the trees, namely, *Carex divisa* and *C. divulsa*; these are growing in dense masses, and sometimes in isolated patches, and in many cases they are quite at home on decayed roots and stumps of old trees. In one case, I find the Spurge Laurel (*Daphne laureola*) growing and reproducing itself from seed at the base of a Scotch Fir tree. The trees in this plantation consist principally of Oak, Ash, Beech, Birch, and Scotch Fir. The common tree Box, Butcher's Broom, and Cotoneasters of sorts do tolerably well in such places, and are worthy of a trial. In the natural forests in the Highlands of Scotland, the Whortleberry (*Vaccinium Vitis Idæa*) forms fine close covert under the shade of the Scotch Fir, Birch, Willow, Aspen, and Poplar, and in some places the Blueberry (*V. myrtillus*) is also conspicuous. In many parts the common Juniper (*J. communis*) forms the best of covert, and is utilised for shelter by the roe-deer and woodcock during a gale. This Juniper, being a hardy native shrub, reproduces itself from seed on the spot; but in cases where it is desirable to extend its culture, its seeds or berries when ripe may be sown in the chinks of rocks and elsewhere in the recesses of the hills, and covered with a small quantity of soil. As the Juniper is not apt to be eaten by hares and rabbits, and affords good shelter, it is one of our best covert plants. On bare rocky places the hard Fern (*Blechnum boreale*) seems quite at home, and never fails to impart a lively furnished appearance to the spot. On damp boggy places along the margins of lakes and rivers, the Royal Fern (*Osmunda regalis*) thrives very well under the shade of trees, and makes excellent covert, and in Ireland it reproduces itself from spores on the spot with facility. When the extension of this Fern

is desirable, young seedling plants should be dug up with a little mossy soil attached to their roots, which will promote their growth and success when planted in their new quarters. Several of our hardy native grasses make excellent covert under trees, such as Cocksfoot-grass (*Dactylis glomerata*), Wood Meadow-grass (*Poa nemoralis*), Rough-stalked Meadow-grass (*P. trivialis*), Yorkshire Fog (*Holcus mollis* and *H. lanatus*), all of which, and others, may be raised from seed on the spot where they are to remain. *J. B. Webster.*

CHISWICK NOTES.

GRAPE DUKE OF BUCKLEUCH.—How seldom do we see this undeniably handsome Grape well done! It is subject, for some unknown reason, to "spottiness" in the berries. We, however, noted some good bunches, minus this objectionable character, at Chiswick lately. The Duke has tender flesh, with a sprightly Hamburg flavour.

MADRESFIELD COURT.

Another most valuable Grape with a complaint (that of cracking), is Black Muscat. At Chiswick it is free from this blemish. Its very large oval berries, of high Muscat flavour, present a handsome appearance.

GODETIAS.

Some beds of Godetias are just now very striking at Chiswick, giving quite a glare of colour. Note-worthy sorts are: Duke of Fife, reddish crimson; and Duchess of Fife, blush, with large carmine blotches (fine), both newish forms. *Bocconia japonica* stands out in the herbaceous border, with its large glaucous sinuate foliage, and a profusion of small whitish flowers in panicles.

BEGONIAS.

We noticed a few beds of these in various colours at Chiswick recently, just coming nicely into flower, and labelled as coming from one of the homes of the Begonia—Swanley to wit. For such purposes as hedging, these beautiful flowers are slowly but, nevertheless, surely coming into favour. They seem to stand better such weather as we have been experiencing of late, and have a longer period of flowering than the once (and still in places) popular Pelargonium.

CHRYSANTHEMUMS.

Two good annual varieties recently noted at Chiswick are *C. Sibthorpi*, bright golden-yellow, very free-flowering, and therefore most useful for cutting purposes; and *C. mulicaule* var. *aurea*, a very useful dwarf form, yellow.

PREPARATION OF SOIL FOR FRUIT CULTURE.*

THE nature and condition of the soil is of the greatest possible importance in relation to fruit culture, as the soil is the principal medium through which the building-up of the tree and the formation of fruit takes place. The soil serves not only as a basis upon which the tree fixes itself and maintains its position, but it is the medium through which it draws its food supply, as well as that wherein many of the chemical changes take place in the preparation of the various elements of plant-food.

Before determining what preparation may be required, it will be needful to ascertain the present condition of the soil. To do this, in the first place the natural condition or strength of the land must be ascertained; that is, what are its component parts, how much does it contain of the elements of the food required, or what ingredients may be deficient. A chemical analysis is the only means of ascertaining this accurately, but where only small quantities of trees are to be planted by a cottager, allotment-holder, or small farmer, this might entail too great an expense, but a fairly accurate estimate of the quality of various soils may be formed by any prac-

* Read by Mr. Joseph Cheal at the British Fruit Growers' Association's Beddington Park Conference, August 2, 1891.

tical man, and the elements that are likely to be deficient may be artificially supplied.

But the object of this paper is not to deal with the composition of soils, so much as to give a few practical hints as to the cultivation required to render the land fit for planting.

The present state of the land to be planted must first be considered. As to whether it is freshly broken-up pasture, whether ordinary arable land, or whether it may have received any better treatment than that given in ordinary husbandry. The first consideration should be that of drainage. Nothing can be worse for fruit trees than to be planted in land, the subsoil of which is close and water-logged. There are of course many soils that do not require draining. A test as to its nature in this respect may be made in the following way:—If, on digging to the subsoil, you find it porous and perforated by worms, you may conclude that there is sufficient circulation of water and air through it. If, on the contrary, you find the soil close and retentive with no worm-holes, you may conclude that it ought to be drained; and let me here emphasise the importance of proper drainage. If the land be water-logged, it is impossible for the trees to thrive and maintain a healthy condition upon it, or for it to perform its proper functions in preparing plant-food. The fruit trees will consequently become moss covered and subject to canker, and many other diseases, and instead of producing good profitable crops, will become so stunted and unhealthy, that what fruit may be produced will be comparatively worthless.

The next consideration is the breaking up of the land. If it has been used for ordinary husbandry, it should, in the first place, be broken up to a greater depth than has hitherto been the case. Where there is no great extent to be planted, this would probably have to be performed by hand. This should be done by what is ordinarily known as bastard trenching, or the breaking-up of the land two spits deep, but in doing this, on no account must the subsoil be brought to the surface, but merely broken up and turned over, turning the next spit of surface-soil on to the top of the subsoil thus broken up.

Where large breadths are to be prepared, a steam cultivator may be used to advantage, or it may also be prepared with the subsoil plough. These implements should be used in dry weather only, and, if possible, used in two opposite directions, to ensure the whole of the subsoil being moved. If the land can be thus prepared a few months before planting, so much the better, as the constant moving of the land in dry weather, and fully exposing it to the action of the sun and air, is highly beneficial, and it enables the soil to absorb from the atmosphere many fertilising elements.

In the case of planting standard trees upon grass-land in the old style of farm orchards, it will be needful to dig holes for each of the trees. In these single holes, however, there is always a great danger of water lodging and becoming stagnant, which will be greatly to the detriment of the tree. Where, therefore, it becomes necessary to dig these single holes, always be careful to provide some proper means of drainage from each hole, or disappointment will probably ensue to the planter.

As to the condition of the land best suited to planting, probably that from which a root-crop has been taken will be found one of the best. The land will then of necessity have been well worked in preparation for the roots, and well-manured, much of the strength of which will still remain in the soil in the best condition for the newly-forming roots to feed upon. If planting is to succeed a corn crop, the land will be in a more exhausted condition, and will require more manure applying at the time of planting.

It is most desirable to select land that is clean and free from weeds. Otherwise, if the trees are planted where the land is at all encumbered with them, and they should become buried amongst the roots of the trees, great annoyance and expense will ensue for many years, and some of the more tenacious weeds

cannot be afterwards extracted without injury to the roots of the tree.

If the land to be planted is naturally good, and has been well cultivated for any considerable time, it will not require much cultivation before planting; but if the land is not naturally so good, and is in a poor condition, it will be better to defer planting for a time, in order to thoroughly clean and give good preparation. In some cases it will pay well to take a clear summer fallow, and to break up the land, and thoroughly clean and pulverise it through the summer, applying a good coat of manure in the autumn before planting. This will really be no loss of time, but a saving in the end, and the endeavour in planting should always be to put the tree into the soil under such conditions that it will have a fair opportunity of growing and thriving after it is planted.

WALNUTS.

THE Walnut season is approaching, and a few remarks on their consumption in various countries may not be out of place. When about half or three parts grown, the Walnut is used for pickling. There are many varieties of these Nuts, such as the oval, round, double, large and small-fruited, early and late, tender thin-shelled, and hard thick-shelled. An almost huskless variety occurs in the north of China. Walnuts always command a ready sale at market in large towns, where, at their first coming in, in September, they are brought in their husks and sold by the sack or bushel; but afterwards, cleared of the outer husk, they are sold both by measure and by the thousand. The larger portion of the Walnuts consumed in England are of foreign growth, and average in quantity about 250,000 bushels. The bulk of these come from France and Belgium, and small quantities from Germany, Holland, and Italy.

The aggregate exports from Bordeaux are about 65,000 cwt. yearly. Small quantities find their way from Chili to Europe. Walnuts are a notable production of Périgord, in France, the annual produce there being estimated at £40,000 in value. The best, which are large, and called "Marrons," come from the canton of Luc, in Provence. To obtain first-class fruit, the tree is grafted in France.

The culture of the common Walnut (*Juglans regia*) is diffused all over Italy, from the Alpine to the Sicilian valleys; however, the number of these trees has lately somewhat diminished, on account of the incessant demand for its timber, which is much used in carpentry—but in general, the tree is more valued on account of its fruit. When the nuts are fully ripe, which is in September and October, the kernel, deprived of its investing skin, is eaten in great quantities. As long as the skin can be easily removed, they are a nutritious and healthy article of diet, but when they get dry, so that the adhering skin sticks to them, they become indigestible.

Walnuts in the shell yield about one-third their weight of picked kernels, which are the crumpled cotyledons, or seed-leaves. In some northern districts, particularly in Piedmont, the Walnut tree has always been held in great estimation for the production of oil, which, when newly made, has a very agreeable taste, and can be employed in cookery, as well as in the preparation of varnish. The Canadian Walnut, although double the size of the English Walnut, contains a much smaller kernel, with a different flavour, being strong and slightly pungent. The seeds of the black Walnut of North America (*J. nigra*) are more oily than those of the European Walnut. A large tree will yield 15 to 20 bushels in a season, selling at 4s. a bushel.

The Butter-nut, or grey Walnut, of America (*J. cinerea*) has a taste similar to the Brazil-nut. The kernel of *J. Sieboldiana* of Japan has a taste like the Butter-nut, but less oily, and the shell is not so thick as that of the black Walnut.

The nuts of *J. Mandschurica*, allied to *J. cinerea*, are also available for the table. The kernels of the

Butter-nut in former times were pounded by the Indians of North America and boiled; this operation separated the oily substance, and was used by them as we use butter, hence its common name. The Persian Walnut is about a third, or a half, larger than the English Walnut; of an elongated shape, with very rich meat or kernel, and the shell as thin as paper. It is not an unusual thing for a tree eight to twelve years old to bear 30,000 nuts, or 12,000 lb. There are four kinds, the kanate, the wanter, the denu, and the kagkazi, the last of which is the finest nut grown. The Walnut grows abundantly in Kashmir, Nepal, and other parts of India, where the fruits are largely used. It forms also an important article of consumption in Japan, quantities being eaten in a raw state. They are also much used there for making a kind of confection, by cracking and removing the shell, without hurting the kernel, which is afterwards coated with white sugar, thus making an attractive and agreeable sweetmeat.

The Walnut also furnishes there a bland oil, used for domestic purposes. In China it seems to be specially pressed for oil, as in some years over 12,000 tons of Walnut pulp are exported from the port of Tientsin in the year. The Walnut is extensively cultivated in the Punjab, Himalaya, and Afghanistan, a large annual supply being brought to the plains of India by the Kaouli and other traders from the hills. The nut ripens there from July to September. There are several well-known forms of this nut met with, the soft-shelled kind from Kashmir and Chamba being regarded as the best. A bushel of Walnuts will yield fifteen pounds of peeled kernels, and these will produce half that weight of oil.

The Hickory-nuts (*Carya alba*) are very generally eaten in the United States, and highly esteemed. It is a fine nut, peculiarly shaped, encased in a thin but strong shell. The kernel in flavour and formation resembles pretty closely that of the English Walnut. The nuts of *C. microcarpa*, closely related to *C. alba*, is of pleasant taste, but smaller. Those of another species, the shell-bark Hickory (*C. amara*), are thin-shelled, and, being exceedingly bitter, are not eatable. The nut of *C. sulcata* is of a sweet pleasant taste. The Mocker-nut (*C. tomentosa*) is small but sweet and very oily. A variety produces nuts as large as a small Apple, which are called King-nuts. The Peccan-nut (*C. oliviformis*) is considered a delicacy superior to the common Walnut. It breaks easily, and has a nut entirely free from divisions. The nuts keep long, and do not turn rancid, and are exported to the West Indies. Texas annually exports these nuts to the value of over £10,000. The Peccan begins to bear at about ten years, and the yield annually increases in quantity until the full growth of the tree is attained. *P. L. Simmonds, F.L.S.*

COLONIAL NOTES.

CHRYSANTHEMUMS IN NEW ZEALAND.

IN reading the *Gardeners' Chronicle* out here, we are able to observe that the rage for these showy flowers still exists, and we, out here, are always on the look-out for new varieties, which of late have been somewhat numerous. These flowers may be said to have fairly "caught on" the colonials, who are now devoting a large amount of attention to their cultivation. Our annual show of the Horticultural Society was held on May 7 and 8, at Christchurch, Canterbury, and it surpassed all its previous exhibitions, both in cut blooms and pot plants. The classes were more numerous, and the number of exhibitors was far in excess of previous years. The attendance of the public was uncomfortably great to be pleasant, the hall being crowded each day, thus showing that the love for these flowers is on the increase. Of course there was a class for the "largest bloom," some of which (*Japs*) measured 10 inches in diameter, and

the incurved were remarkably good. Amongst the varieties of recent introduction we noticed:—

Incurved.—Charles Gibson, Emily Dale, Alfred Lyne, Lady Dorothy, Lord Eversley, Violet Tomlin, Miss M. A. Haggas, and many others.

Japanese.—Charles Dixon, Condar, Lillian E. Bird, Chasta, Sunflower, Anna M. Payne, Avalanche, Etoile de Lyon, Eynsford White, Gloriosum, George Daniels, Mrs. Andrew Carnegie, Mrs. J. Wright, Meg Merrilies, Mons. W. Holmes, Onward, Standstead Surprise, Mr. Ralph Brocklebank, L'Ebouriffé, Mrs. E. W. Clark, Mrs. Falconer Jameson, Moonlight, Mrs. Alpheus Hardy, Tokio, Fair Maid of Guernsey, Mons. Juan Cruz de Eguileor, and many other varieties, too numerous to note.

Reflected.—Dr. Sharpe, Garibaldi, King of Crimsons, Mrs. Forsyth, Annie Salter, Chevalier Domage, Elsie, Golden Christine, Amy Furze, Cullingfordi, Putney George, Sœur Melaine, Cloth of Gold, Talford Salter, and others.

Pompon.—Lady Margaret, Perle, George Sand, Marie Stuart, Gluck, Fleur de Marie, Mr. Astie, Queen of Anemones, Calliope, Antonius, Marabout, Sœur Dorothée Souille, Sunflower. This class does not appear to come well to the front, although they are so well adapted for cutting. It is the Japs that seem to be most sought after, and one grower that I am acquainted with is now growing upwards of one hundred varieties of this class.

The pot culture is not carried out on a very large scale, possibly owing to the high price of the pots and the extra attention that they require during the growing season. *W. A. C. Sumner, Canterbury, N.Z., May 20, 1891.*

THE EFFECTS OF THE LAST WINTER'S FROST ON THE FRENCH AND ITALIAN ESSENTIAL OIL CROPS.

ILLUSTRATIONS of the damage done by the severity of the late winter continue to crop up in various directions. Thus, we learn from the *Chemist and Druggist* that the plants cultivated in Italy and the South of France for the yield of essential oils have suffered so severely as to considerably impair the market supplies. Reports from Italy state that oil of Bergamot is exceedingly scarce, and realising higher prices after every transaction. The principal plants cultivated in France for these essential oils, which are said to have been so much damaged by last winter's frosts, are Thyme, Rosemary, Lavender, and Pennyroyal. News from Spain also state that the output of Geranium oil will this year be a very small one, in consequence of the plantations having suffered greatly from frost.

With regard to English oil plants cultivated at Mitcham, a considerable acreage of the Peppermint crops is said to have been winter damaged, especially on the heavy damp soils and on the more exposed positions, so that some of the plants were taken up. Lavender, also, has suffered severely, especially the old plants, of which the frosts have apparently made short work, nearly all being killed. With regard to the young plants, it is yet too early to speak. During the closing week or ten days of April, the price of the oil advanced from about 35s. to 40s. per lb. The Camomile plants have also suffered from the severe weather, and wire-worm made its appearance amongst the roots to a considerable extent.

In connection with the subject of essential oils it may be stated that the trade report for the week ending May 2, states that the first consignment of Cassia pomade shipped from British India was recently received in London. It was only a sample shipment, but if successful, it may be the precursor of large quantities, as the flowers (*Acacia Farnesiana*) are found growing wild in abundance. It is claimed for the Indian pomade that it is very considerably stronger than the strongest French.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

PEAS.—Should dry weather occur, see that the advancing rows of Peas do not suffer for want of water, especially those coming into bloom; and in applying water to the soil, see that the rows are thoroughly soaked. Those coming into bearing should be supplied with liquid manure, and on light soils heavily mulched; and to keep them in bearing as long as possible, the pods should be kept picked off. Should mildew make its appearance, as it frequently does at this time of year, the plants should be dusted over with sulphur while moist with dew in the early morning, avoiding the pods as much as possible.

CAULIFLOWERS, such as Veitch's Autumn Giant and the Autumn Mammoth varieties, are now forming their flower-heads; the whole beds should therefore be carefully gone over, and the most forward have their leaves gathered together and tied with matting, to protect the heads from being discoloured by the sun: if mulched with partly-decayed manure, the soil will be kept moist and cool, and the plants assisted in developing fine solid white heads. Where the soil is light they should be afforded frequent waterings of sewage or liquid manure, otherwise the heads will be small and ill-shaped.

Sowings of the various kinds of Cauliflowers to be wintered in cold frames should now be made for planting out next spring. I find a south border the best place for making these sowings; the border should be well dug and dressed with soot, but avoid using strong manures unless the ground is very poor, or the plants would make too strong growth, whilst they are at all times liable to form button-heads soon after they are planted out in spring, and often even before they are planted out, thus causing much disappointment. The various sorts should be sown in beds by themselves, and carefully labelled. The soil should be made moderately firm by treading the beds over with the feet before sowing the seed; this has the effect of producing more fibrous roots than when sown in loose soils. Loss of seeds by the birds is best prevented by putting nets over the beds, resting on forked stakes about a foot above the surface. When the plants are large enough, they should be pricked off into their winter quarters at 6 inches apart, and when established, should be fully exposed at all times, only putting the lights on to protect them from heavy rains or severe weather. In case the first lot raised should get too forward, it is advisable to make a second sowing, at an interval of about ten or twelve days. Whatever may be said in favour of raising Cauliflower plants from seed sown in heat in January, I still follow the old practice of raising a good stock of plants at this season of the year for wintering in cold frames or handlights. Plants thus treated, if they are not deprived of air in fine weather, and not covered up except in very hard seasons, seldom fail to bring fine heads in the first or second week in June. Walcheren, Early London, and King of the Cauliflowers, are three good varieties for sowing at this time. Magnum Bonum, First Crop, and Snowball are not suitable for sowing now; they are so apt to button before they are planted out, but are very valuable for early spring sowing. Where it is intended to winter the plants under handlights, these should stand on beds, 4 feet wide, and the handlights formed in line down each bed at 3 feet apart. In the spring, all the plants but three in each may be planted elsewhere, those remaining will form the earliest heads. *C. J. Waite, Glenhurst, Essex.*

THE HARDY FRUIT GARDEN.

RASPBERRIES.—These, as with many of our useful fruits, are not infrequently left growing on the same plot of ground for a number of years, and annually coated with rich manure till the ground becomes as it were "sick," while the crops of fruit are miserably poor. In all such cases I would urge that a change of crop be made, and if the ground to be planted is now at liberty, to lose no time in getting it in readiness for the reception of the canes in October. Land well drained, or that which rests on a gravelly subsoil, may be left for a few weeks longer, and then it should be trenched and well manured. But in the case of heavy soils, preparations should at once be commenced by deeply trenching. There is no necessity to bring the bottom spit to the top, but it should be thoroughly turned up and broken.

Heavy soils will be greatly benefited by working in with the soil, as the trenching is being done, abundance of road-scrappings, leaf-mould, or spent Mushroom-beds, burnt earth, potting-bench refuse, &c. If done at once, in about five weeks' time it should again be thoroughly stirred. Ground well prepared will produce good Raspberries for several years. Planting may be done in a variety of ways, each of which may have something special to recommend them. Trained on wires, and planted in rows 6 feet apart, answers well, but the method usually adopted by market growers is to plant at about 5 feet in clumps of threes, triangular, 12 inches from cane to cane; these are never staked, but shortened back to 4 feet in spring, and the results are very satisfactory. It must also be borne in mind that the Raspberry is a surface-rooter, and in consequence the soil for at least 1 foot deep should be reasonably porous and good. Newly-made plantations should not be allowed to fruit the first year, but the canes should be cut down to within a few inches of the ground-level so soon as growth commences in spring. All fruitful stools should now be gone over, cutting out the canes which have fruited, making room for those intended to bear next year, plenty of light and air to ripen the wood being greatly needed this season.

STRAWBERRIES.—All planting to be done should be completed at once, or the crops of next year will be poor. Runners rooted on turves or in 60-pots should fruit well next year, if got out at once on deeply-tilled ground and made firm, but this should be regulated according to the nature of the soil. It is almost impossible to over-consolidate light land, but that which is heavy should be very sparingly trodden upon, especially in wet weather. Give the final trim to all late sorts cleared of fruit, so that each may produce good fruitful crowns by the end of the season, and in making new plantations, only plant those good and useful, in preference to growing numerous varieties. *H. Markham, Mereworth Castle, Maidstone.*

PLANTS UNDER GLASS.

AMARYLLISES.—Plants of these that bloom first, will have completed their growths some few weeks since, and the leaves will now be showing signs of decay; but so long as they have any signs of life in them, the soil must not be allowed to get so dry as to hasten their dying off, as anything which destroys the vitality of the foliage before its natural time always tends to weaken the bulbs, and will also affect the next year's bloom. It may often be seen that Amaryllis, and also other bulbs, do not receive a like amount of attention after they have done flowering to that which is given them previous to blooming, especially in the matter of keeping them free from red-spider and thrips. The most effectual remedy for these pests is to dip the leaves in a solution of Gishurst's Compound. If the syringe is used freely during the summer, so that the water reaches both sides of the foliage, it is very seldom that these pests will give much trouble. When these plants are allowed to come on with little more than sun-heat, the plants after blooming may be placed in a cold frame to complete their growth, and there is less danger from the attack of red-spider and thrips than there was early in the summer.

WINTER-FLOWERING CARNATIONS.—Plants which have been grown in the open ground during the summer should now be potted; it is a mistake to leave the potting until later on, because Carnations do not care for too much fire-heat, and when the lifting is deferred until the growing season is over, the roots are not able to make the progress necessary to enable the plants to bloom well. Use great care in lifting the plants, so as to secure as many of the roots as possible without damaging them. The size of the pots must be determined upon by the size of the plants, as it is advisable to retain as much of the soil intact as possible around the roots. When the plants are potted, stand them in a pit so as to encourage the plants to make fresh roots, keeping them rather close for several weeks till they get established, when air should be given freely in the daytime. After potting, be careful not to give water until the plants require it, as Carnations at all times are very impatient at having their roots kept too moist.

FUCHSIAS.—The soil in which plants have been kept stopped back have been growing in, will be impoverished, and will require assistance in the way of weak manure-water, as Fuchsias will not bear

it so strong as most soft-wooded subjects, and where concentrated fertilisers are used, the same care should also be taken. Cuttings which were inserted some time back will now be ready for potting into 5-inch pots, they will make useful plants for blooming early next spring. Good loam, rotten manure, leaf-soil, and sand will be found a suitable compost for them. Grow them in a pit close to the glass in an intermediate temperature, and syringe freely to keep down spiders. Plants which are struck during the summer and kept growing slowly through the autumn and winter, bloom much earlier in the season than cuttings which are struck early in the year. *R. Milner, Penrice Castle, Swansea.*

THE ORCHID HOUSES.

THE EAST INDIAN HOUSE.—Although this is not the season in which one usually expects to find a large show of flowers in the warmest houses, still, there are a goodly number of things of great beauty that come in now. Foremost amongst these must be placed *Cattleya Dowiana* and its congener, *C. D. aurea*; these plants never fail in commanding the attention of visitors who are not orchidists. Another most useful plant, and one, too, that is sufficiently cheap for any amateur to buy, is *Saccolabium Blumei majus*; it is one of, if not really the best grower, of the whole genus. They do well when planted either in pots or baskets, and grown in the warmest and shadiest part of the house; plenty of moisture must be kept about the plants during the growing season, which is from February to November—during the winter no water should be given unless the bottom leaves begin to feel limp to the touch. *Oncidium Kramerii* is a most useful plant for summer flowering, commencing to send out its flowers in the month of May; the plants, when strong, will continue flowering until late in the autumn. These plants will be found to flourish in about three parts peat to one of sphagnum moss, and potted very firmly; the pots should be as small as it is possible to get the roots into, pinching of the roots of this plant making a material difference in its growth. *Paphiopsis grandis* is nearly always in flower, and almost earns the name of being a perpetual flowerer. I find the plant does well when planted in baskets in peat, sphagnum moss, and broken potsherds intermixed; the roots, which grow very fast, soon adhere to the hard substances in the potting compost, the plants growing very fast. The flowers are sent out from the base of the pseudobulb usually in pairs; they last about a week in perfection. *Epidendrum dichromum amabile* is now flowering; this plant has been given up years ago in despair, as being such a bad doer. Whether the plants that have been introduced during the last few years are from the same locality I know not, but they are certainly better grown now than formerly, it being nothing unusual to find it blooming freely now. *Cologyne Massangeana* is blooming freely; this is a very lovely Orchid when grown strong and in small plants. They may be grown either in baskets or hanging-pans, the latter I prefer for several reasons, more especially for the facility they give for breaking the plants up and repotting. No settled weather now seems likely, and the orchidist must be continually upon the alert, for cold nights come upon us quickly, and unless the heating apparatus is in proper order, so that heat may be at once turned on, checks will sure to follow, and result in the spotting of the foliage, more especially so in the case of the Moth Orchids. It is a mistake to close the house entirely, with a well-meant idea of keeping down the bill for fuel; it is penny wise and pound foolish. *A. G. Catt, Parkfield, Hallow, Worcester.*

FRUITS UNDER GLASS.

MELONS.—It has been a difficult matter to get Melons of excellent flavour with such changeable weather of late, especially in damp houses; but much may be done by maintaining a brisk atmosphere and free ventilation where the fruits are ripening. With little sunheat and excessive moisture, either at the roots or in the houses, the flavour of Melons is greatly impaired, the fruits crack and decay before properly ripe, so that when the fruits cease to swell, great care is necessary, as a poor-flavoured Melon, however well it may look, is very disappointing when cut. It is also difficult to get well-ripened fruits in houses or frames with plants in different stages. Plants in frames, on a bed of manure, will have

made a gross growth if kept too moist, and to get well-finished fruits, the growths must be kept well thinned, so as to admit light and air. I advise careful use of the watering-pot for some time towards the finish, and if the plants show signs of rot at the collar, apply fresh lime and powdered charcoal, and syringe lightly for a time; indeed, in frames, the use of the syringe must be guided by the weather. Every opportunity must be taken to hasten the growth of Melons in cold frames, to get good fruits by early closing, and due attention to ventilation, not admitting cold air in large currents, as by doing so, prevents the fruits swelling properly, and green-fly and other pests make their appearance. Late houses should be planted at once if good flavour is required, as I do not care for Melons planted later than the middle or third week in August, and even these require good weather to get well-finished fruits. I like pots for late and early Melons, as less top-growth is made, and liability to canker is less; and they fruit sooner also with the roots restricted. Feeding can also be better attended to than when the plants have a large root space. I also advise a variety with thicker skin for late fruiting if the fruits are required to be kept for a time when ripe, as late in the year they will keep longer when cut and placed in a cool room.

CUCUMBERS.—If seed has been sown for winter fruits, these will soon be ready to transfer to their permanent quarters, and I need hardly add, to grow them well a clean well-heated house is essential to success. If, by chance, the seed-sowing has been neglected, no time should be lost in sowing at once in a nice bottom-heat, as the plants soon grow rapidly, and cover their trellis, if not allowed to fruit before winter. A few plants should be grown for autumn fruiting, to save cropping those required for winter work. A good light turfy loam is what they like. I prefer loam stacked a few months, with layers of horse-droppings placed at the time of stacking. If the house is lofty, use 18-inch pots for winter work, as these can be elevated, and fresh fermenting materials placed round the tops to encourage new roots in the winter, standing these pots on a warm, thoroughly drained bottom, giving a day temperature of 70°, and 10° lower at night for the present. *G. Wythes, Lion House, Brentford.*

THE APIARY.

MARKETING HONEY.—Much less would be heard about the trouble of disposing of honey if more care were taken by bee-keepers in getting it up for sale in a clean and attractive manner. It is more trouble, perhaps, but trouble in this direction pays for itself, and helps to create a greater demand for an undoubtedly wholesome and palatable article. Glazed cases for sections are made in great variety, and sections have the best appearance by being placed in those having glass on both sides, so that, if held up to the light, the clearness of the honey and finish of the section on both sides can be seen. Glazed cardboard cases are very good, and so are the enamelled ones, made of zinc or tin. The latter are now made in one piece, so as to fold up, after the fashion of a wooden section, and are, therefore, handier for transit from the manufacturers. They can be had in various tints—light shades of pink or blue are, perhaps, the best colours to set off the honey. Mr. Howard has a one-piece section case made of wood, to fold up precisely in the way of an ordinary section. It is grooved on each side, to admit of glazing, and the dovetail at one corner makes all secure. Before being placed in the cases, the sections should have all the propolis scraped off them, and they should be graded, those not so well sealed or finished being sold a little cheaper than the perfect ones. If shopkeepers do not seem disposed to buy, an arrangement can often be made for them to take the honey on sale or return, a commission of, say, fifteen to twenty per cent., being allowed on that sold. Extracted honey should be put into suitable bottles, the tall ones showing it off to the best advantage. Screw caps are a little more expensive but are to be preferred, as they look the best, and are less trouble than the tie-over ones. Bottles are now made to hold exactly a pound of honey, the ones previously obtainable being some ounces short.

ROBBING.—The robbing season has now commenced, and care must be taken not to leave any honey or sweets about, so as to encourage the evil, as once fairly started, it is often a difficult matter to

stop it. Entrances should also be contracted, and any opening of hives that may be necessary should be deferred till late in the evening. Robbing may often be stopped by hanging a cloth in front of the hive attacked, that has been steeped in the carbolic solution, or by some of the latter being sprinkled on the alighting board.

FEEDING UP.—The following is the recipe for making syrup for autumn feeding, and the sooner this job is finished the better, so that all may be stored and sealed over before the colder weather comes on: Five pounds of sugar to one quart of water, boiled for a few minutes. *Expert.*

THE FLOWER GARDEN.

BEDDING PLANTS.—Here the display, as viewed from the Castle windows and from the terrace walks, is very telling; the masses of crimson (Henri Jacoby *Pelargonium*), pink (Christine *Pelargonium*), yellow (*Calceolarias floribunda* and *amplexicaulis*), mauve (Tom Thumb *Ag-ratum*), deep blue (*Lobelia pumila magnifica* and *Salvia patens*—the latter the most distinct shade of blue-). White Verbenas, silver-leaved, brouze, and tri-coloured *Pelargoniums*, intermixed with yellow and blue *Violas*, *Phlox Drummondii*, *Heliotrope*, *Mignonette*, *Cineraria maritima*, and Morning Glory *Clarkia*, with its pretty reddish-purple flowers, the petals of which are tipped with white, showing to great advantage when contrasted with the display made by the twenty-four oblong and hexagon-shaped beds filled exclusively with carpet bedding (foliage) plants of various shades of colour. The above-mentioned kinds of bedding plants may be accepted as being thoroughly reliable and good all-round subjects for bedding purposes, affording the distinct and telling shades of colour; and those readers who have not got the kinds and varieties referred to above, should obtain cuttings and work up a stock, as cuttings are now plentiful, and their removal a matter of necessity, in order to preserve a uniform growth in plants filling the several beds, &c. This cutting into shape and trimming of every description of bedding plants, the picking off of yellow leaves and spent flowers, must receive frequent attention, as neglect of these simple, though highly necessary, cultural details for four or five days would considerably mar the effect of what might otherwise be a good floral picture. By following a judicious system of pinching and removing spent flowers and seed-pods from the plants forthwith, the flowering period of all subjects may be prolonged, as the young shoots resulting from the pinching process yield a succession of flowers. When *Pentstemons*, *Phloxes*, *Antirrhinums*, and such like plants are pinched or cut back, they break into fresh growth lower down the main stem, and flower much later than do the shoots that were not pinched, and although the side or lateral growths do not produce so fine flowers, what is lost in size is made up in quantity.

FOLIAGE BEDS.—These are rich in softness and brilliancy of tints, the silvery or creamy-white foliage of the *Mesembryanthemum cordifolium variegatum* contrasting most effectively with the bright-foliaged *Alternanthera amoena* and *A. versicolor grandis*, which blend with the soft golden-yellow *Pyrethrum*, the grey *Echeveria secunda glauca*, and the green and silvery *Sedums*. These need frequent thinning out, clipping into shape so as to confine each colour to its own panel or boundary-line, so as to properly define and preserve the character of the several designs, perfect neatness of the whole being the great charm of carpet or geometrical bedding.

GENERAL WORK.—This consists in pushing forward the propagation of all kinds of bedding plants that are not yet put in, the completion of the layering of *Caranations*, and insertion of pink pipings in handlights or frames placed on a gentle hotbed, prepared as recommended at p. 103 of *Gard. Chron.* for July 25, and treated in the manner there described. Cuttings of *Alternantheras*, *Verbenas*, *Mesembryanthemums*, *Salvia patens*, and such like, will strike best in a close, moist frame, the young growths from the bases of the plants being only used. Attend to the watering of large plants growing in tubs and pots about the flower-garden, also vases, and keep yellow leaves and over-blown flowers picked off the plants. Keep *Dahlias*, *Castor-oils*, *Sunflowers*, and the like, well tied to their supports. *H. W. Ward, Longford Castle.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY	AUG. 25.	Royal Horticultural Society's Exhibition of Gladioli, Orchids, Fruit, &c. Lecture by Rev. H. H. D'Ombraon on "Gladioli," at 3 P.M.
WEDNESDAY,	AUG. 26.	Newcastle-on-Tyne (three days). Harpenden.
THURSDAY,	AUG. 27.	Oxfordshire.
FRIDAY,	AUG. 28.	Falkirk. Sandy and District.

SALES.

MONDAY,	AUG. 24.	Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms, Dutch Bulbs, Liliums, &c., at Stevens' Rooms.
WEDNESDAY,	AUG. 26.	Dutch Bulbs, Liliums, &c., at Stevens' Rooms.
THURSDAY,	AUG. 27.	Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	AUG. 28.	Imported and Established Orchids at Protheroe & Morris' Rooms.
SATURDAY,	AUG. 29.	Dutch Bulbs, Liliums, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—60°·9.

Things "going to be" done. ATTENTION has frequently been called, in this place, to the unequal distribution of green spots in and around London, as shown on a coloured "guide" map, and, amongst other things, the hope was expressed, that parks and open spaces might increase and multiply—not such great spaces as the Regent's and Hyde Parks, but those of the "little and good" order. At that date, one could from the top of the Monument see many quiet nooks in the heart of the City, with its one or more trees and greenest of green turf. Today, looking from the same coign of vantage, some trees are still to be seen in the "square mile of the City," but, like unto the Dodo, trees threaten to become extinct. Were space allowed for their growth, the enormous piles of buildings shutting out the sun would act as life extinguishers. Since the time we speak of, five-eighths of the City's population have been dislodged and driven off to the circumference of greater London, and the recent census shows also that the parishes immediately adjacent to the "government" of the Lord Mayor are either gradually losing their inhabitants, or are stationary as to number of population. Those who sighed for and, Falstaff-like, "babbled o' green fields," have been driven nearer and nearer to the old limits of these only to lind streets, and squares, and terraces, and "groves" without trees, filling up the once-green margin of the metropolis. Where the population have not been drafted off in a wholesale manner, so-called "models" have been erected—huge blocks of barracks from some of which the sunlight appears to be quite excluded. There are large playgrounds in most of these "model" groups, but there are no

trees in them—even where there is any chance of their living. We have seen one exception, near the Surrey Theatre, and there the trees—part of an old garden—were doing well when last we saw them.

Driven far away from the heart of London, the displaced inhabitants have been earnest in their endeavour after open spaces, and to-day the record is a very promising one indeed. Commons have been taken in hand by the metropolitan authorities, and various generous individuals have either given open spaces free of cost for the good of all, or have made the terms of acquisition so easy as to make them irresistibly tempting. One among the latest of such "bits" is Clissold Park—dear to Stoke Newington. The other day, as recorded, a magnificent addition was made to Epping Forest, which is now almost at the end of some of our London streets. The myriad beauties of that "cockney elysium" are becoming well known to thousands who are not of the class devoted to tea and shrimps, or to frequenting the huge "taps" at the so-called "hostelries." Of its great work in connection with Epping Forest, the Corporation of London has every reason to be proud; all the reading world knows the story, and visitors from all parts of the world yearly feast their eyes on the beauties of Nature now so well cared for. The following is a brief record of things done, some of which, a score of years ago, were not even thought of. Placing on one side the older Parks, and adding to them Victoria and Battersea Parks, we have:—Finsbury Park, Hornsey; Southwark Park, Dulwich Park, Brockley Park, West Ham Park, Kennington Park, Clissold Park, Stoke Newington. Mention ought also to be made of Highbury Woods, Hadley Common, New Barnet; Clapham, Streatham, and Mitcham Commons, Peckham Rye, and Parliament Hill, Hackney; Plumstead Common, West Smithfield Garden (in front of St. Bartholomew's Hospital); and one or two open squares; all the old churchyards open for children to play in, and other places for recreation in crowded neighbourhoods, such as the Tower Gardens; and lastly, there is going to be opened, one of these fine days, the new Park called Highbury Park.* It will be seen that the newest of open spaces and parks are situated just where they are required; and the success of the agitation began many years since is great indeed.

From time to time attention has also been called to the paucity of markets for the sale of fruit, roots, and vegetables to the Londoner. As it was a quarter of a century since, so it is to-day; there are five markets in greater London—the Borough, Covent Garden, Farringdon, Spitalfields, and Stratford markets, the latter the most modern accession. The population to be provided for, numbers between four and five millions—at any rate well into the fifth million; in a few years there will be five millions, and as possibly there will then be no more markets than now, there will then be one market for each million of inhabitants! Who has been to blame for this, need not be noticed here—who will be to blame ten years hence if the number of market places be not doubled may be asked of County Councils. Were it not for the greengrocer, the ubiquitous "coster," whose carts and barrows are everywhere to be found, London would be much worse off than it is now. The ground got over by the coster in a morning is something to

* As we write, negotiations are being carried on between the Ecclesiastical Commissioners and the Fulham Vestry, in which the London County Council has been joined, with the object of securing for public use at Fulham several acres of land, to be laid out in proper style. There seems every possibility of the negotiations ending in the way desired.

think of. All the same, the distribution of our greenstuff in London is on a most barbarous scale, and constitutes a "crying" evil. Of course, there are many little street markets much frequented—not always by the very poor alone; but these are simply allowable under existing circumstances. Of late years, the City of London has been moving wisely and well in the matter of markets, and on the City's verge, close to St. Bartholomew's Hospital, are meat, poultry, fish, and provision markets, in which an enormous business is done day by day. The old Farringdon vegetable market having long since been condemned, the Corporation is now having a new structure erected—one of the great market blocks. The situation is somewhat near the bed of the long-diverted Fleet river (or ditch!), almost midway between old Field Lane, well-known to the Turpins and Jack Sheppards of the period, and the ancient Bear Garden close by Mount Pleasant, when, on occasion, lady (!) pugilists "put up their hands" for a purse. PEPYS, in his *Diary*, tells of this precious bit of Old London. The site of the market is near to that Ely Place of which our readers have on occasion read in these pages; it is also easy of approach from all parts of London, and beneath and around it are lines of railway, stretching away on every hand. Surely a fitting site for one of those things which were "going to be done" so many years ago, and which, whatever its size may be, promises to be well done. The contractors for the sub-structure—now finished—are Messrs. RUDD & SON, of Grantham, and their foreman, Mr. R. CAMPBELL, gave us a few particulars concerning this part of the contract, which are of interest. He stated about 25,000 yards of earth were removed from the site; that there are about 1300 tons of steel in the girders and columns; about 600,000 stock bricks used in the arching to form the floor of the market; about 6000 yards of concrete used in the formation of the same—all in cement. He states that the site is about 200 feet square; the sub-basement to be used by the Great Northern Railway as a goods depot. The superstructure will be the work of Messrs. PERRY & Co., of Bow, and will be composed chiefly of light cast-iron work on cast ornamental columns; the subbase being of Aberdeen granite, with a red-brick wall rising to window-sill line. The roof will be composed chiefly of light ironwork and glass. The architect is A. Peebles, Esq., and the new market will be opened early in 1892. The total cost will be about £60,000.

It may be objected that the new Farringdon Market is not half large enough—the proper objection is, as to the number of markets in the metropolitan area. Possibly when gas and water have been seen to by the folks at Spring Gardens, the subject now under consideration here may be placed in the hands of a Council Committee, with a result which surely cannot but be of value to the long-suffering inhabitants of the metropolis—and things in the market line now "going to be" done become accomplished facts.

STRAWBERRIES IN KENT.—Strawberry picking in Kent is done mainly by the London poor; the women earn about 2s. per week, but men considerably less—as a rule, girls beat boys by long odds at Strawberry picking. Fig. 28 represents a field of 50 acres, at Swanley, which has produced a large crop of Sir Joseph Paxton Strawberries. At Wood's jam factory, which is close to the field, about 50 tons of the fruit were daily made into pulp. The crop this year was heavy, and the advantage of a factory on the spot for such fruit is manifest. For our illustration we are indebted to the kindness of Mr. Cannell.

CARNATIONS FOR CONSERVATORY DECORATION.—The Committee of the Midland Counties Carnation and Picotee Society, desirous of encouraging the cultivation of these plants in pots for indoor decoration, offered liberal prizes at their exhibition on the 8th inst., for twelve plants grown in pots, not exceeding 6 inches diameter inside measurement, and only one plant in a pot. Unfortunately, the season is such a late one for these flowers, that the display of plants in pots was not of such an extent and character as it would have been ten days later, for Mr. C. H. HERBERT, the manager of Messrs. THOMSON'S nurseries, Birmingham, had

they can be grown easily in 5 or 6-inch pots quite well in the smaller size. The soil should, if possible, consist of good turfy loam in three parts, the other fourth of good leaf-soil and very rotten manure with a little coarse sand may be added, and potting very firmly. The plants should be kept in a well-aired frame, and watered only very lightly at first until they have root-hold, then more frequently, but always taking care not to over-water them, as it produces spots in the foliage. Of course aphid and any other pests should be well looked after. The Carnation and Picotee in pots for indoor decoration richly deserve a little attention, and I hope these plants

Constance Heron, Campanini, Clara Penson, Mrs. Herbert, Mrs. Payne, Lyddington's Favourite, Novelty, and Brunette. Mrs. Sharp and Campanini are very beautiful varieties for decoration. Then, amongst yellow-ground varieties with rich markings, Almisa, Annie Douglas, Rachel, and Stadrath Bail may especially be mentioned, but there are so many others also which are valuable as pot varieties. Amongst Carnations possessing the habit and qualities named were:—Self: Olivette, lovely pale rose; William Spinks, crimson; Dazzle and Gentle Jackie, both bright scarlet; Germania, pale yellow; Blushing Bride, a very fine variety; Mrs. Muir,



FIG. 28.—HARDY FRUIT CULTURE: STRAWBERRY PICKERS AT WORK AT SWANLEY. FROM A PHOTOGRAPH. (SEE P. 222)

potted up about 100 plants in 5-inch pots so as to make a considerable display upon the occasion, but as it was he could only muster the dozen plants in flower with which he took the 1st prize. "I have just seen his collection," writes a correspondent; "the plants potted-up are in full bloom, and I regret that they cannot be seen at a large exhibition as an example of the suitability of these plants for greenhouse and indoor decoration; a plant of Mrs. Herbert, a new variety, pure white with a wide margin of bright rose, has eleven blooms now open, and is a charming decorative plant. For growing on in pots, good sturdy plants which show side growths of 'grass,' should be selected and potted up by the end of March, and

will have more of this care devoted to them. The best varieties for this purpose are those which are not the tallest growers and are free-bloomers, and do not possess a split pod or calyx, and have a good constitution. Souvenir de la Malmaison and Mrs. Reynolds Hole are both well-known varieties. We have now a host of beautiful kinds, which are equal in colours to the two named, and have form, quality, and well-formed pods, and some of them fragrant. I noticed at Spark Hill the following varieties as possessing the qualities I have named above, and therefore suitable for small-pot culture, viz.—Picotees, having a white ground colour with rose, purple, or scarlet edging; Dr. Epps, Mrs. Sharp,

Mrs. Ford, and Annie Lakin, all three very fine white selfs; Mary Morris, pink; Mrs. Hewson Morris, scarlet; Cleopatra, rich purple. Others are, Terra Cotta, shaded salmon and maroon; Delicata, white, flaked with rose; Florence Nightingale, white, flaked with purple; and Alismonde, white, with bright scarlet flakes. This list can easily be added to, for we are now so well off for splendid self and fancy-coloured varieties; and those who had the privilege of inspecting Mr. Dodwell's extensive collection at Oxford must have been struck with the great headway our florists are making in these favourite flowers. Then we are fast losing the rough edge of so many of our border flowers, still

prized by those who know little or nothing of our greatly improved forms, with endless lovely shades of colour. We are also getting perfume in many of the kinds, and this is a great desideratum to those especially who do not grow for exhibition. Mr. DODWELL's bright lovely rose self, Euphrosyne, has a delightful Clove fragrance; and Mr. C. H. HEABERT's grand new scarlet and yellow Picotee, A. W. Jones, has a strong Clove Carnation-scented perfume, and is a fine pot decorative variety in the bargain. Others also are fragrant, a quality which will find favour with the ladies."

CAUTION.—We have lately been informed of more than one instance in which access has been obtained to nurseries and private gardens by persons representing themselves to be members of our staff. The last instance of the kind occurred on the 15th inst. at Croxteth Gardens, Liverpool. We do not, as a rule, send any member of our staff to make such visits without previously ascertaining whether or not such visit would be convenient; and the reporter, if a stranger to his host, should, moreover, present his card of introduction from the editor.

DEODAR CONING.—We have received from Mr. HERRIN, of Dropmore, and from Mr. MAYNE, of Bicton, cones of the Deodar. The only other we have seen is one produced a year or two ago at Kew. We hope to give a figure of the cone shortly, as it differs slightly from that of the Atlas and the Lebanon kinds.

THE CONFERENCE OF THE BRITISH FRUIT GROWERS' ASSOCIATION AT CARDIFF on Aug. 12 was held in conjunction with the local horticultural society's exhibition in the Sophia Gardens. A large tent was devoted to the Conference, which was largely attended, the Marquis of Bute presiding, and being supported by the Rev. G. A. Jones, Alderman Lewis (Deputy Mayor), Mr. T. F. Rivers, Mr. E. J. Baillie, F.L.S., of Chester; Mr. Blackmore (Secretary of the Cardiff Horticultural Society), Mr. G. Gordon, and Mr. Lewis Castle (Hon. Sec.). After a few words from the Chairman, Mr. Gordon gave a review of the work of the Association, and the extension of fruit culture. Mr. A. Pettigrew then read his excellent paper on "Hardy Fruits for South Wales," and Mr. E. J. Baillie an address on "Fruit Culture as an Industry," both printed in our last issue.

FRUIT CONGRESS AT MANCHESTER.—Preparations are now being made for holding a large exhibition of hardy fruits in the Royal Botanical Gardens, Manchester. The exhibition will open on October 20; the congress meeting on the following day.

BEGONIAS.—Messrs. LAING send us some Begonias grown by Mr. GOLD, The Gardens, High Ashurst, Dorking, from seed supplied by Messrs. LAING, and sown in January last. In point of size and doubleness these are very remarkable. In some the petals are regularly disposed as in a double Balsam, 4 inches across, another in which the column of stamens has been replaced by a long series of petals 5 inches long. In another flower a globular mass more than 4 inches in diameter is remarkable for the production of several centres. In other words several adventitious flowers are developed within the first flower. As malformations these are very extraordinary, very showy, and of great botanical interest; but they can hardly be called Begonias!

STOCK-TAKING: JULY.—The barometer of the "Stock Exchange" is a ready record of political and monetary disturbances, which fluctuates from day to day—nay, according to the evening papers, from hour to hour; the permanent record is surely that now before us in the Board of Trade Monthly Returns. It was evident at the close of last month that there were "in the air" such disturbances as affect trade and commerce; what was "in the air" is now chronicled, and we have to record a decrease in our imports for July of some £258,518, and in the exports of British and Irish products of £2,376,224.

Some of the nations of Europe are playing at "brag," and Russia is in the early throes of a serious deficit in her corn crops. Surely reason sufficient all this for the figures above recorded. It may be noted here that the imports for the first seven months of the year show an increase over the same period last year of £5,085,164; and that the decrease in exports over the same period is placed at £5,865,937—£3,489,713 being the drop for six months, all as compared with the first seven months of last year. The exports of foreign produce show an increase in the month of July amounting to £660,800—and a decrease in this export of £476,253 for the seven months. The following figures are abstracted from the "summary" of exports for the month last recorded:—

	1890.	1891.	Difference.
	£.	£.	£.
Total value for month	£32,082,629	£32,824,111	-258,518
§II.—(A.)—Articles of food and drink—duty free	11,969,090	12,103,213	+134,123
(B.)—do., dutiable	2,023,790	2,183,195	+159,405
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	3,407,637	4,107,537	+699,900
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,492,390	3,967,911	-524,479
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	945,029	905,328	-39,701
(B.)—Parcel Post ...	41,928	45,938	+4,010

The increase in the amount placed to the credit of the Parcel Post is worthy of note: it shows an increase of £4010 over the record for July, 1890. There is a not very pleasant note to make with respect to the imports from some portions of Greater Britain—recent correspondence in an evening contemporary stating that the fruits of their harvests go into the exchequer of the money-lender. This is very much to be deplored—and we think the fostering of agricultural banks in the districts affected by this not very modern parasite deserving the attention of statesmen in the localities affected. It is pleasant to record the increase in the corn-producing area of our sons across the water—of the cattle ranches and their fruit orchards; it is in proportion pitiful to note the prevalence of such a blight as the money-grub. The following are our usual extracts from the general returns, of interest to all growers, large and small:—

	1890.	1891.	Difference
§ II. Fruit:—			
Apples, raw bush.	12,453	27,055	+14,602
Unenumerated, raw	402,392	495,787	+93,395
Onions	191,606	265,984	+74,378
Potatoes cwt.	368,049	900,319	+532,270
Vegetables, raw, unenumerated value	£99,594	152,747	+53,147

There can be no time better than the present for considering an aspect of "stock-taking," which has not, so far as we are aware, presented itself to any of our contemporaries. The Board of Trade presents us month by month and year by year with very complete returns of our imports and exports. We know all about what the foreigner and the colonist send us in the shape of provisions and raw and manufactured materials. All things from and including Onions and gold, once a year we get to know as nearly as returns can tell us how much of all this huge mass is intended for London. Though, of course, much of this is manipulated and then started off to provincial towns, such as pork, which, after being passed through the "stove" is sent into the country as bacon. Who can tell what all the railways with a terminus in London draw from the country for

consumption in the Metropolis? All day and night, all the year round, provisions of every description, including fruits, roots, and vegetables, are being poured into London by nearly a dozen principal railway companies. What is it they bring, and how much is there of it? The companies cannot tell us this—rather, they state their inability to do so. We may, under these conditions, be forced to work out a system of averages, in order to get at a possible total. Thus, there are so many men, women, and children in Greater and Lesser London, each on the average consume so much fruit, roots, vegetables; so much beef, mutton, pork; so much cheese, butter, milk, spirits or malt liquors; and thus we get into the land of probabilities, which is the country of big figures and often of extravagances. But is the obtaining even correct aggregates an impossibility? A contributor to these pages during the last score of years essayed to have this question answered, so far as the commodities with which our readers are mainly concerned, and the results of his essay may be thus briefly summarised. He wrote to the traffic managers of all the great lines, and of their principal feeders, asking for the weights of the fruits, roots, and vegetables carried over the various systems to the metropolis as the consuming centre—also, if possible, and for purposes of comparison for the totals of 1890. All the traffic managers appealed to replied in the most courteous terms, some excusing themselves on one ground or another quite understandable, a few sent representatives or invited our contributor's personal explanation; the result, however, is—the figures respecting the food supply of London, so far as can be given by our railway companies, are not to be had; and it follows that, though quite able to give all the information respecting the supplies from foreign lands, we are in the dark respecting our home production. One official informed our representative that their system of entry was practically perfect, boasting that, did his company carry Sheffield wares, he could furnish not only the number and gross weight of cases or packages carried; but also the various items of contents! The representative of another line pooh-pooed the idea of any company being able to do such a thing. Evidently, however, there was a willingness to furnish all information come-at-able; and we can only hope that this department of "Stock-taking" may receive their early and kind attention. We may note that any day there may be found in the daily papers the "traffic returns" from all railway companies—so much for passengers, and so much for goods; this, doubtless, has its influence on share and stock transactions; such information as we require would help to "popularise" railways—make them more and more to appear as necessities of life, as most undoubtedly they are in a marked degree to the denizens of this great metropolis.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The inaugural meeting of this Society was held at the Literary and Philosophical Institute on the 14th inst. The chair was occupied by Wm. Angus, Esq., who delivered a very appropriate address. Mr. Bernard Cowan, of South Shields, proposed a resolution pledging the meeting to do its utmost to further the interests of the Society, and in supporting it spoke of the numerous advantages to be gained by mutual intercourse. He also advocated the establishment of a Botanical Garden in Newcastle, and spoke of the rapid development of public parks in the district. This was seconded by Mr. A. Heslop, and supported by Messrs. Smith and Irvine, each of whom urged gardeners and horticulturists generally to support the Society. The resolution was carried unanimously. There was a good attendance, and a great interest was manifested in the proceedings throughout. The following officers were elected:—President, Norman C. Cookson, Esq.; Vice-Presidents, Alderman Thos. Bell, and Wm. Angus, Esq.; Chairman, Mr. B. Cowan; Vice-Chairmen, Mr. A. Heslop and Mr. Irvine; Treasurer, Mr. R.

Moffatt, Leazes Park; Secretary, Mr. J. Hood, jun., West Parade, and a committee of four gardeners, four under-gardeners, and four amateurs.

THE FORMS OF LILIUM LONGIFLORUM AND BROWNII.

WE have had this year at Kew a far more extensive set of forms of these two species than ever we possessed before. So far as present information goes, I should classify them under two species as follows:—

Lilium longiflorum as a species is distinguished from *L. Brownii* by its flowers being more narrowly funnel-shaped when fully expanded, and by its more slender linear anthers and yellow pollen.

The typical *longiflorum* is so well known that I need not describe its peculiarities. It is now flowering in quantities at Kew, in full perfection at the middle of August in beds behind the Palm-house and south

south end of the temperate-house. In the rockery, it is now (August 12) in full flower. The stems are $1\frac{1}{2}$ to 2 feet long, the leaves linear, conspicuously three-nerved, 4 to 5 inches long, half an inch broad. The one to three flowers are half a foot long, tinged conspicuously with reddish-brown to the top on the outside, with the connivent funnel 4 inches long and $1\frac{1}{2}$ inch in diameter; at the top, the outer segment is 1 inch broad, the inner $1\frac{1}{2}$ inch, with the yellow anthers of the type, and pale stigma. In the temperate-house it has flowered a fortnight earlier, reached a height of 5 or 6 feet, with leaves 6 or 8 inches long, flowers but little tinged with brown outside, and an oblong capsule 3 inches long.

L. Brownii as a species is distinguished by its more open flower, the connivent funnel of which is 2 inches or more in diameter at the top, when it is fully expanded by its stouter anthers with bright reddish-brown pollen. We used to think this was the japonicum of Thunberg, but when Mr. Elwes was preparing his *Monograph* the authorities of the

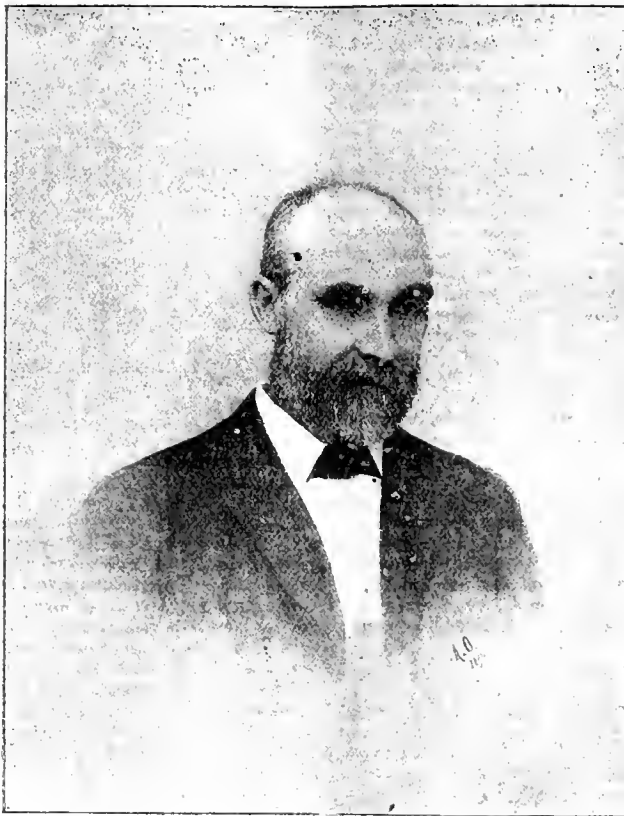
amended description of the plant that flowered this year in the open air in Kew Gardens:—

Stem, 3 feet long, brownish towards the base. Leaves about forty, lanceolate, rather glossy, about 3 inches long, $\frac{1}{2}$ to $\frac{3}{4}$ inch broad, 3-nerved, the upper broader. Flowers 3 or 4 on spreading peduncles, 3 to 4 inches long. Perianth about 5 inches long, beginning to reflex an inch from the top, the throat of the funnel $2\frac{1}{2}$ inches diameter in the expanded flower. Segments all showing a distinct green keel both inside and outside, tinged with brown on the outside towards the base, both sets much narrower than in typical *Brownii*, the outer an inch broad at the top of the funnel, the inner an inch and a half. Stamens an inch shorter than the perianth, filaments pubescent; anthers $\frac{1}{2}$ inch long, with bright red pollen. Style more slender than in typical *Brownii*, and the stigma smaller and brownish.

The bulbs were sent, with those of *Lilium Henryi*, by Dr. Henry from Western China. There is a fourth form amongst Dr. Henry's bulbs which may be distinguished as var. *platyphyllum*. The flower of this resembles the last, but the stem is not more than a foot long, the leaves are broader and the anthers an inch long.

Var. *viridulum*, Baker, in *Gardeners' Chronicle*, 1885, pt. ii., p. 131, is a fifth form of *Brownii*, with very short broad leaves and flowers cream-coloured, hardly at all tinged with brown on the outside. It was introduced by Mr. T. S. Ware. Dr. Henry states that in the provinces of Ichang in Western China where it grows wild amongst the mountains, *L. Brownii* produced, when cultivated, as many as fifteen flowers. The inner segments in the cultivated plant are often a couple of inches broad.

I find in all these forms the style grows longer as the flower expands. When it first opens, the stigma is about on a level with the top of the anthers, but by the time the flower fades it overtops them. *J. G. Baker, Kew, August 12.*



JAMES O'BRIEN.

JAMES O'BRIEN.

JAMES O'BRIEN, born at Llanelly, Wales, January 26, 1842, belongs to a family of gardeners and Orchid growers, and although brought up for the civil service, a visit to his brother, who was gardener to Mr. East, at Lee in Kent, where there was one of the best collections of Orchids, and especially *Angraecums* and *Phalaenopsis* of the time, caused him to run in the old groove. He stayed there three years, and then went to Messrs. Parker & Williams, Seven Sisters Road, Holloway, to take charge of the Orchids and Ferns, and in a great measure, of the exhibiting. Afterwards he was with Robert Warner, Esq., in charge of the Orchids; then for a time with Messrs. Hugh Low & Co., among the Orchids. Subsequently he was for between two and three years Orchid and plant foreman at Robert Stayner Holford, Esq., Westonbirt, Tetbury. Then for a like time and in a like capacity with Robert Hanbury, Esq., Poles, Ware. On leaving the Poles he became manager for many years, during the palmy days of the concern, to Messrs. E. G. Henderson & Son, Wellington Road and Maida Vale, St. John's Wood, since leaving which firm, about 1882, he has taken no appointment. During all this time he has always been glad to give any information regarding Orchids, and has consequently had a large correspondence; among his correspondents being Charles Darwin and many other scientific men. Reichenbach scarcely let a week elapse without writing to him, and we, ourselves, are under great obligations to him for constant assistance in this department.

Mr. O'Brien, during his career, has had a good many men under him, who have turned out men of mark, and who are now occupying good positions in private gardens, and also as curators in colonial botanic gardens. His knowledge of garden plants, and his recollection of a plant once seen, have acquired him the reputation of knowing more plants at sight, and especially Orchids, than any man in Europe. Mr. O'Brien has for many years been a member of the Floral, Scientific, and Orchid Committees of the Royal Horticultural Society, and has acted as Secretary to the Orchid Committee ever since its formation.

of the Cactus-house. In the type the stems are $1\frac{1}{2}$ to 2 feet high, upper leaves glossy, an inch or more broad; the flowers are few in number, with no brown on the outside, 5 or 6 inches long, with a connivent tube, 3 or 4 inches long, and $1\frac{1}{2}$ inch in diameter at the throat; inner segments $1\frac{1}{2}$ to 2 inches broad, outer much narrower.

Takesima differs from the type by its brown stem, and flowers tinged with brown on the outside.

Eximium and *Wilsoni* differ from the type by their taller stems, more numerous broader leaves, and more numerous flowers, with a connivent tube 5 to 6 inches long, not tinged with brown on the outside, but, as in the type, faint green in the bud stage; the outer segments, when expanded, faintly tinged with green, and the inner with a narrow faint green keel. There is an excellent figure of *eximium* in Elwes' *Monograph*. *Harrisii* only differs from *eximium* by its more robust growth and more numerous flowers.

We have had *formosum* this year at Kew, both out-of-doors in the rock garden, and indoors at the

museum at Upsala kindly lent us Thunberg's type specimen, and we found, to our surprise, that it was not this species, but what we had been calling *Kramerii*, so that we had to fall back upon the next oldest name for the present plant, which is *Brownii*.

The typical *L. Brownii* is well known. It is widely cultivated, and is well figured in the *Monograph* of Elwes, and in the *Flore des Serres*. The name *Brownii* was first published in 1845 by Mieliez, after a nurseryman at Slough. We have not at present in cultivation at Kew the *Oderum* of Planchon in *Flore des Serres*, t. 876, 877. This is the plant that is figured under the name of japonicum by Dr. Gawler in the year 1813 in the *Botanical Magazine*, t. 1591, and was described as such in my paper in the *Gardeners' Chronicle* for 1871. It is more delicate than typical *Brownii*, with flowers less tinged with brown on the outside, a whitish or yellowish bulb, not a brown one, with narrower scales, green, not reddish-brown stems, and thinner, less glossy leaves.

Dr. Henry's *Chloraster*, I now think, must be placed as a variety of *Brownii*. The following is an

HOME CORRESPONDENCE.

TURNIP FIELD PEST.—Since my letter of the 30th ult. to the papers on the above subject, I have received numerous inquiries about Brentini's "Lessive." Will you allow me to state through your columns, that full particulars may be obtained from the Secretary to the Evisell Syndicate, Ltd., 76, Finsbury Pavement, E.C. *George P. Ivey.*

FUCHSIA TRIPHYLLA.—This singularly distinct and charming species is now in flower in one of the temperate houses at the Botanical Gardens, Birmingham. Mr. Latham states that in order to flower it a little warmth is required—more than can be had in a cold greenhouse at this season of the year. It is a shrub-like plant of somewhat horizontal growth, the small orange-scarlet flowers hanging down from the branches. Of more botanical interest perhaps than of decorative value, it is yet a plant well worthy of cultivation, though possibly very scarce. Mr. Latham states some have failed to flower the species, but under the treatment given to it at Edgbaston it flowers fairly well. *R. D.*

SETTING UP CARNATIONS FOR EXHIBITION.—I hope we are fast nearing the time when the practice of setting up these flowers with paper collars will be a thing of the past. This sentiment will be echoed by many, whilst some will cling to the idea that the "paper collar" is still desirable, and flowers cannot be shown off properly without them. I think this formal and unnatural method cannot be too strongly condemned, and along with it the manipulation and mutilation termed "dressing." A good example of setting up Carnations for exhibition was given at the Royal Horticultural Society's show, held in the Drill Hall, Westminster, on August 11, by the Royal nursery, Slough, the flowers being set up after the manner of single Dahlias, about six in a bunch, with a little foliage; the effect was grand. Needless to say, this system is far preferable to that of the "paper collar," which the sooner it sinks into oblivion the better. *George Phippen, Reading.* [We cordially agree. Ed.]

AMARYLLIS HALLI (see p. 172) is a garden synonym of *Lycoris squamigera*, a plant of which there is a good figure given in *Garden and Forest* for April 9, 1890. It is there said to have been originally brought from China by Dr. George R. Hall, of Bristol, Rhode Island. The bulb of this perfectly hardy Amaryllid is large and globose, with a long neck; the leaves, which are about 1 foot long, wither in early autumn, and when the bulbs are strong enough the flower-scapes will appear. The colour of the flowers, numbering five on an average, is a light rose colour, with pencillings of a peculiar bluish-grey. *C. G. van Tubergen, Jun., Haarlem.*

LILY OF THE VALLEY.—I have sent you two dozen Lilies of the Valley. We cut for the Henley Regatta 2000 spikes, have been cutting eight dozen a week since then, and have still a few more. For the last three years I have kept them till July, and find them most useful during the London season. For one dinner party last July, I had over 2000 on the table at once, which were much admired. *Henry Perkins, Greenlands.* [These were received on the 6th inst. Such fine fragrant racemes of pure white flowers are always useful. Ed.]

STOCKS.—It is an acknowledged fact that stocks, procured as suckers from trees, are prone to send up (however well dressed and disbudded) numerous suckers, particularly so in the case of Plums worked on the Mussel, Brussel, and Brompton stocks, gradually producing more as they increase in age, however carefully they may be removed. The cause of it, I have thought, may be the manner in which they are propagated, as the Plum, Myrobalan, St. Julien, Black Danson stocks, &c., which are produced by seed and cuttings, do not throw up suckers as do the other stocks. *R. G. L.*

THE BLACK DIAMOND MOTH.—Several fields in the vicinity of Falkirk have been ploughed down owing to the total destruction of the Turnips. The method generally pursued for their destruction is brushing, by means of branches of Broom and Spruce tied to the sides of small harrows, these drawn between the rows sweep the underside of the leaves, displacing the caterpillars which are buried by the teeth of the harrow, and leaving the leaves upturned. Where this operation has been followed at an early date by heavy rains, the Turnips have been so far freed of the pest that no permanent harm to the crop is feared. *R. G. L.*

MILDEW.—In these gardens, and hereabouts generally, mildew seems very prevalent; in some instances, several crops of Onions have entirely disappeared. One bed has been slightly attacked, but fortunately not to such an extent as to make the crop useless. I attribute this in a certain degree to the liberal dressing of soot when the seed was sown, and after it was up a few inches above-ground. Peas have become very much affected, and these in some cases close at hand so much affected as to render them perfectly useless. On one plot in these gardens the crop has failed to open the flower toward the tops of the sticks, and later crops appear as though they would be useless. All sorts seem, upon this plot, to be affected. Upon another plot, where I have them more especially cared for, and where they are growing in trenches, they seem to have escaped, since they are growing as freely as possible. This indicates that deep cultivation is probably an essential part of Pea cultivation. Chrysanthemums have taken the mildew rather badly, but in this case it can be attacked rather more forcibly than the kitchen garden crops. Roses and Vines have also suffered somewhat, the latter case those with outside borders being the worst. I think the wet, cold nights we have experienced all through the season have had a great deal to do with it, and previous extreme drought. *W. A. Cook, Compton Bassett, Wilts.*

MR. MARTIN SMITH'S CARNATION PRIZES.—So much has been said of late concerning these prizes, and the consequent competition, that it was very natural public attention should be called, as it was called, at the James Street Drill Hall on Tuesday of last week, to the singular action of the donor of these prizes in allowing his gardener to partake in the competitions. That course seems to me to evidence a strange sort of exhibition ethics. True, I have met with it before elsewhere, but have always found the practice condemned, but I had never seen it in such rampant form, as in this particular instance. I can very easily understand now why the proposals that the prizes should be given to Carnations grown and flowered at Chiswick were not acted upon. Had such been the case, every competitor and every plant sent for competition would have stood upon its own merits, and the flowers would have been seen in all their real character, and not as grown under protection from heavy rainstorms. Only in one instance did I hear the practice of the donor of the prizes in competing for them himself approved. Almost universally it was condemned. That Mr. Martin Smith may have desired not only to show Carnations, but how to stage them, was but natural and right; but certainly, in my estimation, it would have been better to have done so in an honorary collection. The late period of the competition quite destroyed the chances of some intending exhibitors. *A. D.*

"BEATING THE RECORDS."—I quote this phrase from a communication recently received from Mr. Samuel Barlow, Stakehill House, Castleton, near Manchester. He stated, in a letter bearing date August 3, that he was sending a stand of Pinks to the exhibition of the Carnation and Picotee Union at Oxford on the following day, August 4, and he remarked, "I think we have beaten all records this season; it has scarcely ever happened that Tulips were shown in London on June 23, and Pinks on August 4." And then Mr. Barlow went on to describe the week as one of the worst ever experienced in Lancashire during the summer-time, and especially to finish July with; temperature, 38° on two or three nights, no sunlight, wind north-east; much use of gas during the day-time in works and house at Stakehill, and at the warehouse in Manchester; day temperature, 46° to 58°. One scarcely wonders that Mr. Barlow should regard as possible the exhibition of Carnations in October, should some of the blooms escape the rot which is destroying so many of them in the bud stage. *R. D.*

NOTES FROM OAKWOOD.—We have this year bloomed a number of plants of the Lily which is known in Japan as *Lilium odorum japonicum*; it has by far the pleasantest smell of any Lily I know, that of a sort of refined Tub-rose. Our first plants bloomed in a shady Lily house in the cottage garden; these were pure white, both inside and outside of the petals. A well-known amateur gardener, who went to see them in the evening, first called my attention to the delightful smell. The next in order of blooming were in the conservatory here; these had a slight brown tinge on the back of the flowers. Then those which bloomed in the open border in the Wisley garden, had the backs so dark, that at first

sight they might have been taken for *L. Browni*; these last have the back of the flowers very much darker when grown in the open air than when grown in a house. My gardener here has been in the habit of planting *Taberoseas* in pots, and then bedding them out; these give finer flowers than those kept under glass. Last year, on December 4, he planted six bulbs in the border under my window; all six have come up: one has a good flower spike, another shows that it will flower, the others are doubtful. I should not have thought they could have survived the severe winter; they had no protection. At Oakwood, under a gable of the cottage, there is a martin's and a wasp's nest side by side, and touching each other. The inhabitants do not seem to interfere with one another. *George F. Wilson.*

ADIANTUM FARLEYENSE.—I have a big plant of this Fern, of which I am a great admirer, and have grown a specimen nearly 5 feet through. This plant has always produced a fine lot of young foliage in the spring, and never showed any abnormal growth until last spring, when it produced a great many abnormal fronds, specimens of which I forward by this post for your inspection. The fronds look as if they are fertile, and by examining them through a microscope, I believe I have seen sori and spores. Is this not of very rare or almost unique occurrence with the Fern in question? I see in an issue of the *Gardeners' Chronicle* for August 18, 1888, an article of Mr. T. M. Shuttleworth's, running as follows:—"It is the first I ever had, and Mr. Goldby's communication was highly interesting to me, all the more so, as I have on several occasions, in past years, written on this subject in your columns, having failed after more than twenty years' experience of growing this Fern in all sizes, to find even a trace of fructification. *C. G. Van Tubergen, Jun., Haarlem.* [We found a few abortive sporangia, and nothing more. Ed.]

INCREASING PINKS.—The present is a capital time to raise a batch of new plants of the various kinds of Pinks, either for flowering in pots or for planting in the borders for next season's display. All that is needed is to pull some old roots into pieces, chop out a trench about 3 or 4 inches deep, according to the length of the slips, place a layer of sand and decomposed leaves at the bottom of the trench, place the pieces in the trench 4 inches apart, fill in the soil, making it firm about the plants. In a few weeks nice little tufts will be obtained. *A.*

GARDENERS' ORPHAN FUND.—It is a good plan for gardeners to give a little of their prize-money to this excellent Institution. I have occasion to go about a good deal, acting as judge at flower and fruit shows, and whenever I have appeared to the prize-takers, they have invariably promised to send the sum (only 5s) to make them a member. I trust someone will put up a box in the Waverley Market, Edinburgh, on the occasion of the great International, where there will be so many gardeners who would doubtless spare something towards the orphans. My little protégé, whom I successfully carried at the top of the poll, was of Scotch parents, and born in Ireland, so that there is no partiality shown to any particular nationality. *J. Rust, Eridge Castle.*

POLEMONIUM FLAVUM HYBRID.—*Polemonium flavum*, said to be a distinct species from *P. cœruleum*, produced last year seedlings so like it that I took especial care in gathering and marking some seed of typical *P. flavum*, which I sowed early in the spring of this year. About twenty seedlings are now in flower, and two-thirds of them are producing white flowers not distinguishable from those of *P. cœruleum* var. *alba*. One only has blue flowers. The habit of these plants is far more branching than that of typical *cœruleum*, the stems being divaricate, and producing axillary flowering branches nearly to the base. I take them to be hybrids. The appearance of the plants is an improvement on the type of *cœruleum*, and they are quite barren, while the type produces seed on every flower-head. A small proportion of the seedlings came true *P. flavum*, but very weak, and nearly smothered by the robust hybrids. I enclose specimens. *C. Wolley Dod, Elye Hall, Malpas.*

DECAYING OF PEACHES.—Refering to the inquiry on p. 196 of your last issue, regarding Peaches, I have always found the cause has been an insufficient supply of air. Some Peach-houses have a very humid atmosphere, which causes mildew, damp, and decay. If the house is kept sweet, and abundance of air admitted, decay in unripe Peaches will not be heard of. Constant syringing, and keeping the house closed, is the cause. If a green moss appears

on the soil, or anywhere in the house, then be assured there is excessive moisture, and an insufficient supply of air. *Thrumpton.*

ORCHID NOTES AND GLEANINGS.

ONCIDIUM FORBESII, Hook., VAR. MEASURESIANA.

THIS very distinct variety flowered for the first time in the collection of R. H. Measures, Esq., Streatham. It differs from the type in the following characters:—The flowers are of a pure golden-yellow colour, except the very narrow border, which is of a very singular colour—intermediate between yellow and purplish-brown. The tubercles of the lip are arranged in a manner which, in contrast with that in all other of the same section, may be very easily described. There are two tubercles in the base of the lip, which run together, and form a big rose-like crest, at both sides of which are two converging lines of smaller tubercles, at the same distance one from the other. The wings of the column are not quite identical with those on the plate in *Bot. Mag.* t. 3705, but the differences are not sufficient to establish a new species, inasmuch as the descriptions of the previously-described species of this very polymorphous Brazilian group must be pointed out with more accuracy, and will require a careful re-examination by the author, who will devote his time for many years to the Orchids of this country. The appearance of the raceme of the large, full, expanded, bright golden-yellow flowers, is very brilliant, and we may congratulate Mr. Measures on this enrichment of the midsummer Orchid flora. *Dr. Kriänlin.*

SOCIETIES.

ROYAL HORTICULTURAL.

WEDNESDAY, August 5.—The Floral Committee met at Chiswick on the above date. Present: W. Marshall, Esq., in the chair; Messrs. Dean, May, Paul, Furze, Herbst, Leach, Jefferies, Gordon, Watson, Fraser, Goldring, Noble, Baines, and Phippen. The Committee examined the collections of Carnations, Violas, Pansies, Fuchsias, &c., growing in the gardens, when the following awards were made:—

Three Marks.

- Carnation, White Queen (Fisher, Son, & Sibray), white self.
- .. Snowdrift (Fisher, Son, & Sibray), white self.
- .. Edith (Fisher, Son, & Sibray), pale pink, spotted scarlet.
- .. Penelope (Hooper), white self.
- .. Dante (Hooper), rose flaked.
- .. Maggie Laurie (Dicksons & Co.), delicate blush self.
- .. Guiding Star (Ware), scarlet self.
- .. Rowena (Dean), bright scarlet.
- .. The Moor (Dean), dark crimson.
- .. Mrs. Reynolds Hole (Veitch), terra cotta.
- .. Alice Ayres (Veitch), white, rose edge.
- .. Achilles (Novelty Seed Company), deep red streaked.
- .. Hogartner Schaffner (Benary), scarlet striped.
- .. Albrecht Duesser (Benary), deep rose, crimson flake.
- .. Madame Van Houtte (Benary), yellow ground.
- .. Professor Vrchow (Benary), rose flaked.
- .. Dan Godfrey (Turner), scarlet flake.
- .. Agnes Chambers (Turner), yellow ground, lilac edge.
- .. No. 97 (Douglas), yellow, faintly striped.
- .. No. 62 (Paul & Son), crimson flaked.
- .. Grandiflora (Veitch), deep rose.
- Picotee, Margaret Rueder (Benary).
- .. Redbraes (Benary).
- .. Romeo (Paul & Son).
- .. Mr. Rudd (Turner).
- .. Favourite (Turner).
- .. Mary (Turner).

Two Marks.

- Carnations, Rosy Morn (Douglas), pink.
- .. J. R. Allinson (Ware), rose self.
- .. Fourball (Benary), deep scarlet self.
- .. Horace (Dan), scarlet self.
- .. Beatrix (Fisher, Son, & Sibray), buff self.
- .. Terra Cotta (Turner), streaked.
- .. Van Dyck (Benary), slate and crimson flaked.

Three Marks.

- Godetia, Duchess of Fife (Daniels Bros.), blush with large carmine blotches.
- Chrysanthemum (annual), Sibthorpi (Dean), bright yellow, very free flowering.
- .. (annual), multicaule aureum (Dean), yellow, dwarf.
- Viola, The Mearns (Dobbie & Co.), lower petals dark purple, top pale lilac.
- .. Croft House (Dobbie & Co.), white, fine habit.
- Pansies for strain (Dobbie & Co.).
- Pansies for strain (Hooper).

Two Marks.

- Viola, virginialis (Dobbie & Co.), large pure white.

Three Marks.

- Sweet Peas, Mrs. Sankey (Eckford), pure white, fine.
- .. Mrs. Gladstone, delicate pink standards, wings blush, edged with pink.
- .. Captain of the Blues, standards bright purple blue, wings pale blue.
- .. Princess of Wales, shaded and striped mauve, on white ground.
- .. Isa Eckford, creamy white, suffused with rosy pink.
- .. Senator, shaded and striped chocolate on creamy ground, fine.
- .. Countess of Radnor, pale mauve standards, wings pale lilac.
- .. Monarch, bronzy crimson standards, rich deep blue wings, fine.
- Fuchsia, Floon de Neige (Cannell), single white corolla.
- .. Berlin's Kind, Gustave Dore (Cannell), double white.
- .. First of the Day, Adolphe Legour (Cannell), single red.
- .. Earl of Beaconsfield, Aurora superba (Cannell), salmon.
- .. President Grévy (Lemoine), fancy.
- .. Pentstemon, La Foudre (Lemoine), fine scarlet.

FRUIT AND VEGETABLE COMMITTEE.

A meeting was held at Chiswick on this date. Present: P. Crowley, Esq., in the chair; Dr. Hogg, Messrs. Lee, Rivers, Warren, Dean, Bates, Balderston, Willard, Cliffe, Denning, Reynolds, Hudson, and Wythes.

The Committee inspected the collections of Runner and Dwarf French Beans, &c., growing in the gardens, and made the following awards:—

Three Marks.

- Dwarf French Beans, Mohawk, Smyth's Speckled Hybrid, Fulmer's Forcing, Lion House, Ne Plus Ultra, Dark Dan, Ne Plus Ultra (Veitch).
- .. Ne Plus Ultra (Harrison).
- .. Wax Mont d'Or, yellow-podded Butter Bean, found to be of excellent quality (Vilmorin).
- Pea, Sequel (Laxton), dwarf, deep green Marrow.

ANNUAL EXCURSION OF THE ROYAL SCOTTISH ARBORICULTURAL.

(Continued from p. 201.)

MESSRS. KENNEDY AND CO.'S NURSERIES, DEMERIES.

A number of the company paid a visit to these nurseries before breakfast on the morning of the 7th. The nurseries are between 50 and 60 acres in extent, and are well stocked with forest trees, fruit trees, and ornamental shrubs. In some aspects, Ash, Hazel, and Silver Fir appeared to have suffered considerably from a severe frost which occurred on the 15th and 16th of May last. The frost appears to have been general throughout the district.

At 10 o'clock the party, over seventy strong, started for Kirkconnell, the seat of R. Maxwell Witham, Esq. A drive through a rich agricultural district, and along an avenue of Oaks, remarkable for great girth of bole, but low elevation, and many branched, wide-spreading tops, brought the party to Kirkconnell, where they were cordially welcomed by Mr. R. Maxwell Witham, Mr. Maxwell Witham, Jun., and Captain Stuart, of Shambellie.

KIRKCONNELL

is situated on the estuary of the Nith, the park is extensive and abounds in old well-preserved trees. There appeared to be few young plantations, and scarcely any of the trees so numerously introduced within the past forty years; the whole place has thus an ancient air about it. The date of the old square tower in the mansion is of the troubled time of Edward I. Of the age of the venerable Oaks that surround the house on all sides no record is known, but their size betoken great age, although there is no sign of decay in any of them. Both varieties, sessiliflora and pedunculata, of the British Oak occur in the park.

Among the few trees that were measured was an Oak, 16 feet 5 inches at 3 feet up, and at 5 feet, 14 feet 3 inches, while several were 13 feet and 12 feet odd. One Spanish Chestnut at 5 feet gave 15 feet 9 inches, another 17 feet 1 inch. A splendid Walnut, for Scotland, girthed 10 feet 8 inches at 5 feet. The widest spread Oak was one with a perfectly symmetrical head, which measured in two directions at right angles 98 feet; the bole was 10 feet 10 inches at 5 feet. Near this latter, and close by the bank of the estuary, stood the Salmon Oak, so called because the monks of an abbey near by were accustomed to receive their tithes of salmon under its shade. The bole of this tree was one of the longest we noted, being 18 feet; the girth 9 feet 5 inches. A Fern-leaved Beech of rather unusual proportions near the house is worthy of mention—the stem girthed 8 feet at 5 feet from the ground, and the top was lofty and widespread, but it was observed that the leaves on some of the upper limbs were reverting to the typical form of Beech. A Sycamore, with hollow trunk, near the rear of the house, measured 15 feet 9 inches. At the conclusion of the inspection of the park and trees, the com-

pany were conducted to the dining-room in the old tower, and were served with refreshments. Professor Bayley Balfour cordially thanked Mr. Maxwell Witham in the name of the Society for his kind and hospitable reception.

The excursionists then started southwards by way of Shambellie, the road passing through some extent of very fine Scotch Pine and Larch plantations on that estate. A halt was made at New Abbey to inspect the remains of Sweetheart Abbey, one of the most complete ruins of the kind in the south of Scotland. It was founded in 1275, by Devorgilla, wife of Baliol, and the ruins of her tomb still remain in the chancel.

Passing along the eastern base of the Criffell Hill, well in view of the Solway, the Cumberland shore of which was clearly visible, Southwick, the seat of Mr. Mark Stewart, M.P., was reached. Although invited to stop and inspect the woods here, which, judging by such portions as came under the view of the party, would have afforded considerable interest, the time at disposal did not permit of more than a drive through the heart of the policies en route to

MUNCHES,

which was 20 miles off, but was reached about 4 p.m. Here the party were met by Mr. Maxwell, of Munches, Mrs. Maxwell, and their three sons, and several guests of Mr. Maxwell, among whom were Mr. Mark Stewart, M.P., and Dr. Cleghorn, of Strathvithie, Vice-President of the Society. Mr. Maxwell led the way to a large marquee erected on the lawn for the occasion, in which a luncheon was provided and partaken of with zest by the hungry visitors. Mr. Maxwell presided, and proposed the toast of "The Queen—our Patron," which was warmly received. Mr. Maxwell then gave the toast "Prosperity to the Royal Scottish Arboricultural Society." He need say little regarding the objects of the Society after the addresses of the President in Edinburgh on this subject. They had, no doubt, all heard the saying, "Be aye stickin' in a tree, it will be growin' while ye're sleepin'." But in many districts there had been a great deal of 'stickin' in of trees where they would never grow if their planters slept for ever, and it was one of the great objects of this society to disseminate knowledge as to what trees were suited for the different parts and conditions of the kingdom. For want of that knowledge, great loss had been caused and great mischief done. They had no grand woods around here such as the Society may have seen elsewhere, and what they had, had suffered greatly from the storms about eight years ago. Their great object for several years past had been to repair that damage. It was, however, very discouraging to planters to find their young woods attacked by disease. Again, they were discouraged by that curse of all their forests—rabbits. In his boyhood, rabbits did not exist here; now, one of the great questions they had to solve was, how to preserve their young trees from rabbits. He had great hopes that the Corsican Pine, which rabbits did not touch, would yet take a good place in their woods. Personally, he had planted out a good many of this Pine, and was satisfied with it.

Professor Balfour in reply said, he was sure that if all proprietors were as liberal minded as Mr. Maxwell and other members of the Society, forestry in Scotland would have been in a different position to what it was to-day.

The company then dispersed in several groups under the guidance of Captain Stewart, Mr. Donaldson, forester, and Mr. Murray, gardener, to inspect the woods and pleasure grounds. The latter were rich in ornamental trees and shrubs, such as *Acer negundo variegata*, *Pelea trifoliata*, *Quercus cerris variegata*, *Shepherdia canadensis*, Japanese Acers in great variety, and in most instances doing well, and quite bardy; and *Prunus Pissardi*, the latter fruiting in the open on a wall. It may be noted that a fine dwarf standard, in a pot, of this *Prunus* had a dozen or more ripe fruits upon it, the plums being perfectly round, and nearly the colour of the foliage. Several fine clumps of *Rosa rugosa* were noticed, one in particular, measuring 9 feet through. A considerable collection of *Lonicera*s, in groups, in the woodland part of the grounds, some, such as *L. tartarea splendens* being very bright, with its twins, or pairs, of crimson shiny berries.

Phormium tenax and *P. t. variegata* are perfectly bardy here, many grand clumps of it in the pleasure-grounds having stood out for years; some of them had the remains of the flower-stems of last year still attached. As mentioned in the note at p. 173 of

our last issue, one clump showed the remains of nine great flower stems.

Among Conifers there were some remarkable specimens, one of *Wellingtonia gigantea pendula*, the most perfect that many of the company had seen, was about 20 feet high; *Cryptomeria japonica* about 25 feet high by about the same diameter at base; *Abies Alberti*, 69 feet high; *Sciadopitys verticillata*, 9 feet high, in beautiful dark green colour, indicative of perfect health. The largest Scotch Pine girthed 10 feet 6 inches; the largest Corsican Pine, about thirty years old, girthed 3 feet, and the height was about 45 feet. There are throughout the woodlands many specimens of the older arboreal occupants, in the shape of grand old Oaks and Scotch Pines, many of the contemporaries of which were wrecked in the storms alluded to in Mr. Maxwell's speech at Munches, and the shelter of many of these is taken advantage of to rear splendid specimens of *Thuja gigantea* and *Cupressus Lawsoniana*, which are attaining great size; the largest of the latter was 50 feet high, and a perfect specimen of its kind. Several specimens of *Abies Douglasii Stairii* met with had a very pleasing effect, in contrast with more sombre-tinted things; the largest, and it is the largest in these parts, was about 12 feet high. The well-appointed gardens deserve more extended mention than space will allow on this occasion. After tea, the company drove to Dalbeattie station and took train to Stranraer, where they were to rest for the night.

Next morning, a considerable number of the members visited the nursery of Messrs. Smith & Sons, of Stranraer, which extends to about 40 acres, and which was occupied with a miscellaneous stock of ornamental trees and shrubs and fruit trees, but largely also with the specialty of the firm (Roses), for which they are so well known throughout the country.

CASTLE KENNEDY.

After breakfast the party started for Castle Kennedy. Arriving at the entrance to the Castle grounds on the New Luce Road, the party made the circuit of the White and Black Lochs, two splendid expanses of water, divided by the peninsula on which the old Castle stands. The company walked to the south front of Lochinch Castle, where they were met by the Earl of Stair. From this point could be seen extensive terraces, with the noble sheets of water in the background, encircled by a panorama of richly wooded slopes all round in the distance. The terrace garden, stretching from Lochinch Castle southward to the grand ruin of Castle Kennedy, richly mantled in Ivy, cover between 70 and 80 acres. It is chiefly on this space that the famous collection of Conifers is arranged in avenues and in groups; viewed from a distance the characteristic forms of *Cupressus macrocarpa*, *Abies nobilis*, *Araucaria imbricata*, *Picea morinda*, *Pinus insignis*, and others had a most charming effect. Closer inspection, however, revealed that many of the specimens which had reached noble proportions were on the decline, and whole avenues were murred by the gaps made by deaths. Exhaustion of the soil, which was never very suitable for Conifers, combined with the fierce gales of brine-laden winds that frequently sweep across the narrow neck of land on which Castle Kennedy stands, from Luce Bay to Lochryan, have a debilitating effect upon these splendid forms.

Many of the *Abies nobilis* had reached the height of from 40 to 50 feet, and one could realise from those that remained intact and healthy in the great avenue formed by this species, what a noble feature it would have been. *Picea morinda*, of which another avenue is formed, has suffered less, but *Cupressus macrocarpa* has reached splendid proportions, but also shows the effects of the saline winds. In more sheltered parts there were to be found grand specimens of such species as *Pinus macrocarpa*, *P. Lambertiana*, and *P. insignis*. *Araucaria imbricata* appeared to hold its own against the unfavourable conditions better than any other Conifer. The avenue formed of it was perfect in its way, the trees averaging about 40 feet high, with ample spread of branches from near the base. Many also were bearing splendid cones.

On the walls of Lochinch Castle we found *Eucalyptus globulus*, *Aloysia citriodora*, *Eurybia ilicifolia*, *Arbutus Andrachne*, and *Eriobotrya japonica*, well-developed plants, which had never received protection in winter since they were planted out years ago, thus testifying to the mildness of the temperature. Further evidence of this was found in clumps of Sikkim *Rhododendrons*, which had been planted out many years, and had attained to great size:—*R. Aucklandi*, 10 feet spread, by 9 feet high; *R. barbatum*, 7 feet; *R. glaucum*, 5 feet; *R. niveum*,

4 feet; these names and figures show what has been accomplished here in establishing tender things in the open. The foregoing species, and many others, flower freely every year. A fine specimen of *Eucalyptus amygdalinus*, with spreading rounded top, and 20 feet high, growing on an elevated site, is another indication of the mildness of the winters here. Dense sturdy bushes of *Fuchsia coccinea* and *F. Riccartoni*, intermixed with *Rhododendrons*, and other shrubs; in the clumps of *Phormium tenax*, some of them bearing the stems of last year's inflorescence to the number of thirty, each laden with plump seeds, which will ripen in due course. Splendid specimen trees of *Quercus flex*, and hedges of the same, were much admired. Approaching the new kitchen garden, is a noble avenue of Golden Queen Holly. A hasty inspection of the kitchen garden and hothouses satisfied everyone of the completeness of the equipment of that department of this remarkable place, and the splendid crops of Grapes, Peaches, Figs, &c., indoors, and the crops out-of-doors all bore testimony to the skill of Mr. Cruden, the gardener. The party had been increased here by the arrival of Sir Wm. T. F. Wallace, Bart., of Lochryan; Mr. Maxwell, of Munches; Dr. Cleg-horn, the Rev. Thomas Barty, D.D., Kirkcolm; Mr. Thomas Easton, M.D., Stranraer. The guidance of the party over the extensive grounds and policies was undertaken by Mr. Hogarth, the forester; and Mr. Cruden spared no pains in making the inspection interesting to all.

The company returned to Stranraer by a different route, the road chosen skirting the shore of Lochryan. On reaching Stranraer they were entertained to luncheon by the Earl of Stair—Mr. Greig, his lordship's factor, presiding. A vote of thanks to Lord Stair was proposed by Professor Bayley Balfour for the high intellectual treat he had given them. After luncheon the party dispersed, some few remaining to visit Lochnaw Castle, the residence of Sir Henry Agnew, Bart., and Galloway House, the seat of Lord Galloway; the majority taking train to their several destinations, north and south, and all entirely satisfied with their outing, which had been managed by Mr. Moffat, secretary of the Society, without a hitch, and with comfort and pleasure to everyone.

THE MIDLAND COUNTIES CARNATION AND PICOTEE.

SATURDAY, August 8.—The first exhibition of this newly-formed Society was held in the Birmingham Botanical Gardens, and was a marked success in the display of blooms and gathering of well-known cultivators. The southern growers responded generously, and brought a goodly number of flowers, but the northern growers were not in bloom, and the midland flowers are very backward, so that few of them were forthcoming.

In the class for twelve Carnations, Messrs. Thomson & Co., Birmingham, were 1st, with clean good blooms, and this stand included fine blooms of C. H. Herbst, S. B. and S. S. Thomson, two fine new varieties raised here.

For six Carnations.—1st, Mr. Robert Sydenham.

For twelve Picotees.—1st, Mr. E. H. Dodwell, Oxford, with a fine lot, viz., a very superb Norman Carr, Lyddington's Favourite, a new variety; Mrs. Colridge, very fine indeed; Annot Lyle, Little Phil, Imogen, Mrs. Payne, Mrs. Sharp, Nellie, Royal Visit, and John Smith.

In the class for six Picotees, Mr. Robert Sydenham was a good 1st. The yellow ground and fancy Picotees were a most attractive feature, and these beautiful varieties are becoming very popular. In the class for twelve blooms, Mr. Charles Turner was 1st, with a grand lot, and the *Gardeners Magazine* Silver Medal was also awarded to this stand. The varieties were:—*Romulus*, Mrs. Walford—a seedling, Edith, Mrs. Wynne, Apollo, Victory, Almira, Lord Rendlesham, Madame Van Houtte, Countess of Jersey, Distinction, and Mrs. Henwood.

A class for twelve self varieties was well filled, and many beautiful flowers were staged. Mr. Dodwell was 1st, with Germania, the finest yellow known; Queen of the West, and ten seedlings.

In the class for six fancies or selfs, Messrs. Thomson & Co. were 1st, having blooms of their two new fine varieties of A. W. Jones and Blushing Bride.

There were several other classes, all well filled, and the class for twelve border varieties, five blooms of each, had three exhibits, Mr. J. Walker, of Thame, was 1st; and for a bouquet of Carnations and Picotees, Messrs. Thomson & Co. were 1st.

The premier prizes for the best blooms throughout the exhibition were awarded as follows:—Princess Bizarre, Robert Houlgrave, to Messrs. Thomson & Co.; Princess Flake, Thalia, to Mr. C. Turner; Heavy edge Picotee, Mrs. Coldridge, to Mr. Dodwell; light-edged Picotee, Baroness Burdett-Coutts, to Mr. C. Turner; yellow-ground Picotee, Countess of Jersey, to Mr. Turner; Self Carnation, Germania, to Mr. Dodwell.

First-Class Certificates were awarded to Mr. J. Douglas, Ilford, for fancy Picotees, Lily Henwood and Mrs. Robt. Sydenham.

Amongst the honorary exhibits were a fine display of Mr. Eckford's superb new Sweet Pens; a handsome group of plants from Messrs. Thomson & Co.; fancy Pansies from Mr. William Sydenham; new Pansies, and Carnation and Picotee blooms, from Mr. Campbell, Blantyre; a new *Caladium* "Raymond Lemoine," and herbaceous blooms from Messrs. Hewitt & Co.; a fine collection of *Begonia* blooms from Mr. B. R. Davis, Yeovil; *Viola* and *Pansy* blooms and cut herbaceous blooms from Mr. J. Forbes, Ilawick; and a collection of cut herbaceous plants and border Carnations from Messrs. Dicksons, Chester.

CLAY CROSS FLOWER SHOW.

TUESDAY, August 11.—The great feature this year was the groups of plants, each 300 feet, arranged in circular form down the middle of the marquee, with the smaller groups on the sides in semi-circles. The 1st prize was won by Mr. A. Ward, gr. to T. H. Oakes, Esq., Riddings House, Alfreton, with an elevated group, undulating to near the outside of the circle to smaller groups. The centre was composed of Palms, different varieties of Lilies, Crotons, and the graceful *Eulalia variegata*; between the smaller groups were some perfectly-coloured Crotons, and interspersed on the ground-work were fine *Nepenthes*, raised sufficiently to show their grown pitchers; *Cattleyas*, *Cypripediums*, *Odontoglossums*, and *Tuberoses*. Mr. Ward also gained the Silver Medal given by the proprietors of the *Gardeners Magazine* for special culture.

Mr. W. Haslam, Hardstoft, took 1st prize in the smaller 150-foot groups, with a tastefully-arranged lot of plants, closely followed by Mr. Shaw, gr. to W. Turbutt, Esq., Ogston Hall, Chesterfield. One group out of seven in this class was disqualified, the exhibitor having potted up some cut flowers.

The collections of fruit made a splendid show, Black Grapes being especially good. Mr. Goodacre, Mr. Edmunds, Mr. Webb, Mr. Ward, and Mr. Read, were the principal prize-takers.

Roses were well shown by Mr. Proctor, Chesterfield, and Mr. Wilson, Handsworth. Wreaths and bouquets came from Messrs. Pearson, nurserymen, Nottingham. Some very attractive baskets and rustic vases filled with Ferns, for table decoration, were shown by Mr. Edwards, Nottingham. Amateurs and cottagers' classes, displayed in two separate tents, were well filled. A good incentive to cottagers is the great number of prizes given by the Clay Cross Coal Co. in the different parishes within a radius of 6 miles, for the best cultivated gardens.

CARDIFF HORTICULTURAL.

AUGUST 12 AND 13.—This was the third annual show of a reorganised society, and promises to be one of the largest and most popular in the West of England. Several large tents were required to take the contributions, and while in the plant and cut-flower departments there was a decided growth since last year, in the fruit and vegetable departments the increase, both in extent and quality, was something remarkable.

In Division I. were nineteen classes, open to all England. The leading class was for twelve stove and greenhouse plants, and here Mr. J. Lockyer, gr. to J. C. Hanbury, Esq., Pontypool, beat Mr. Jas. Cypher, of Cheltenham, the former staging some very good specimens, chief among them being *Bougainvillea glabra*, *Clerodendron Balfourianum*, *Ixora Pilgrimii*, *I. regina*, *Allamanda grandiflora*, *A. nobilis*, *Dipladenia amabilis*, *Erica obnata purpurea*, *E. Farriana*, *Anthurium Scherzerianum*, &c. Mr. Cypher, who took the 2nd prize, had as his leading specimens, *Ixora Pilgrimii*, *I. Fraseri*, *I. Williamsii*, *Allamanda Hendersoni*, *A. nobilis*, *Erica tricolor major*, &c.

Flowering plants included some very good *Fuchsias*, especially the six specimens which won the 1st prize for Mr. T. Clarke, gr. to Colonel Hill, M.P., Llandaff, who had mainly dark varieties, *Lye's Charming*, *Thomas King*, and *Beacon* being the best. The 2nd prize went to Mr. Thomas Hillard, a shoemaker of

Cardiff. The best varieties shown were Lye's Charming and Lye's Thomas King, and another dark variety named Beacon.

Thomas Hillard was 1st with six very fine plants of zonal Pelargoniums, large, admirably grown and bloomed; the double varieties, Mark Twain in particular being admirable. Begonias were fairly good, but compared with last year an improving feature, and six excellent Achimenes were staged by Mr. Thomas Malpass, Cardiff.

Orchids were represented by four good specimens from Mr. Cypher, the fragrant *Dendrochilum filiforme* diffused a sweet perfume; he also had *Oncidium incurvum*, *Cattleya Gaskelliana*, and *Cypripedium barbatum*.

Groups of plants arranged for effect, with one conspicuous exception, were not so good as they might have been, and as the 1st prize was withheld in the class for the largest, exhibitors will not be slow to take the hint given.

Nine-foliaged plants were very good from Mr. Cypher, his *Croton Thomsoni*, *C. Warreni*, and *C. Countess* were finely-grown and well-coloured. Mr. Hockley, gr. to Col. Page, Cardiff, had the best eight exotic Ferns, a well-coloured example of *Adiantum Farleyense* being prominent. Good table-plants were exhibited, and *Caladiums* also.

In the cut flower classes some fine Roses were shown by the English Fruit Company, Hereford, and the Rev. F. R. Burnside, of the same city. The Tea-scented varieties from the latter were exquisite, and he was 1st with twelve blooms. Messrs. Perkins & Son, Coventry, also had good flowers. Messrs. Heath & Son, nurserymen, Cheltenham, had the best twenty-four Dahlias, and Messrs. Jones & Son, nurserymen, Shrewsbury, were 1st with twelve bunches of Cactus varieties.

Hardy flowers were a very good feature indeed, especially the bunches shown by Messrs. Jones & Son, and Mr. A. Pettigrew, Cardiff Castle gardens.

Annuals were a very pretty feature, and well arranged bunches showed off the subjects to the best advantage.

Quite a large tent was filled with bouquets for bride and drawing-room, wreaths and crosses, with vases and baskets of flowers, and tables laid out for eight persons, and this department of the exhibition promises to become a very important one at Cardiff. The best table came from Messrs. Jones & Son, Shrewsbury; Mr. C. Winstone, The Mall, Clifton, was 2nd.

Fruit was a fine feature. Mr. E. Gill, gr. to W. M. Franklin, Esq., St. Helens, was 1st with six bunches of Grapes, having finely finished examples of Black Hamburg, Golden Queen, Muscat of Alexandria, and Foster's Seedling. There were classes for three bunches of Grapes, a class each for all the leading varieties. Black Hamburg, Muscat of Alexandria, Gros Maroc, Golden Queen, Madresfield Court, and Foster's Seedling were particularly good. Mr. Pettigrew was placed 1st, with two very fine Pines, Melons, collection fruit, dessert and culinary Apples, Peaches, Nectarines, &c., were both plentiful and good.

And the same with the vegetables, and especially so in reference to cottagers' exhibits. Messrs. Sutton & Sons, Reading, and Messrs. Clibran & Son, Manchester, offered special prizes for collections which brought a keen competition.

In the way of miscellaneous contributions, Messrs. Clibran & Sons, florists, Altrincham, had plants, hardy flowers, &c. Messrs. B. S. Williams & Sons, Victoria Nurseries, Holloway, had a collection of plants arranged with excellent effect. Messrs. Dobbie & Son, seedsmen, Rothesay, had a collection of Violas, in bunches, fine African Marigolds, &c. Mr. John Watkins, Pomona Gardens, Hereford, had a collection of Apples, Gooseberries, &c.; and Mr. A. Pettigrew sent from the Castle gardens a collection of forty varieties of Apples, and thirty varieties of Pears, as a contribution to the Fruit Conference.

MAIDENHEAD HORTICULTURAL.

August 13.—The past exhibition was in every respect an excellent one. Great improvements have been made of late years, so that now this show has become a most important country show. The quality of both plants, fruits, and vegetables was first-rate, and in many classes the competition was very keen.

For the large group, Mr. Aitken, gr. to Major Meeking, Richings Park, was 1st, with a well-arranged group, composed of plants suited to the purpose, the flowering part consisting of a good proportion of

light colours, which greatly aided in setting off the bright colours of Crotons and other foliage plants. Mr. Lindsay, gr. to the Duchess of Buccleuch, Ditton Park, was a good 2nd, with not quite such a bright display as his more fortunate rival.

Fuchsias were shown remarkably fine; in fact, it is rare nowadays to see them so good. Mr. Lockie, gr. to G. O. Fitzgerald, Esq., Oakley Court, Windsor, was 1st, with plants of extra size, carrying fine flowers, and in robust health; Mr. Hughes, gr. to H. Paravicini, Esq., Heathfield, Bracknell, was a very close 2nd, the plants full of flower.

For fine-foliage plants in pots, limited to 8 inches diameter, Mr. Lockie was again successful, with a healthy lot, consisting of Crotons, Dracenas, Dieffenbachias, and Palms; Mr. Hughes again coming in 2nd.

For six specimen plants (three foliage, three in flower), Mr. Aitken was 1st, with large well-grown plants, being also 1st for the best specimen in flower, with an excellent *Clerodendron Balfourianum*. The same exhibitor showed six good Ferns, comprising an exceedingly fine plant of *Gymnogramma peruviana argyrophylla*, another of *Davallia fijiensis plumosa*, and *Pteris scaberula*, also in excellent health. Mr. Lindsay was 2nd, with an even lot of plants. For a specimen foliage plant, Mr. Cook, gr. to Mrs. Fitzadam, Windsor was easily 1st, with an immense *Croton Queen Victoria*, finely coloured.

Mr. Lockie was the most successful with table plants, having useful-sized examples, taking also the 1st for half a dozen well-grown dwarf plants of Cockscombs.

Tuberous-rooted Begonias were exceptionally fine, Mr. Lockie again being to the front, the plants in full flower. The same must be said of the plants in another class, from Mr. Lindsay. These latter were the dwarfer of the two.

Zonal Pelargoniums were shown in profuse bloom, the plants dwarf and bushy, from Mr. Aitken, who was a good 1st.

Orchids were not shown in classes, but one plant showed by an amateur grower as a specimen plant deserves particular notice. It was a very healthy example of *Cypripedium Parishii*, from Mr. Silver, Altwood Road, Maidenhead. This plant bore seven spikes, with forty-five flowers, and was growing in a 6-inch pot. It took the 2nd prize in its class.

Cut flowers were not represented by many classes, but these were filled with exhibits. Mr. Walker, Thame, Oxon, was one of the most successful competitors, taking 1sts for Roses, Dahlias, Zanias, and Asters, receiving as prizes two Silver Flora and two Silver Banksian Medals of the Royal Horticultural Society. Of these classes the Roses and Dahlias were the best. Other classes open to amateur growers only, contained some excellent exhibits, in these Mr. Paxton was 1st for Roses, Mr. Wheeler, Halesley, for Dahlias, Mr. Pond, gr. to W. Lang, Esq., Maidenhead, for Quilled Asters; Mr. Hughes for any other kinds, with by far the best exhibits.

Fruit and Vegetables.—These contained some of the best productions in the show, and brought out some very keen competition.

For a collection of six dishes, Mr. Goodman, gr. to Miss Hammersley, Abney House, Borne End, was 1st with a good all-round lot, black Grapes, Nectarines, Plums and Peaches, being some of the best; Mr. Aitken came a close 2nd, having excellent Muscats and Nectarines. Mr. Goodman was also 1st for a collection of outdoor fruits, again showing strongly, Early Rivers Plum, Glastone Apple, Moor Park Apricot, and Doyenne d'Été Pears, being his choice. Mr. Osman, Ostershaw Park, Chertsey, was a near 2nd, showing Peaches and Cherries, very good.

For Grapes there was a close competition. Mr. Marcham, gr. to Miss Arnott, Englefield Green, being 1st with Black Hamburg, the berries and bunches large, the colour good; Mr. Johnston, gr. to A. Gilliat, Esq., Stoke Poges, coming 2nd, taking also the 1st prize for any other black with first-class bunches of Madresfield Court, fine in berry. For Muscat of Alexandria Mr. Osman was an easy winner, with well-finished examples; taking likewise the 1st for any other white kind with Buckland Sweetwater. With Peaches Mr. Johnston won with highly-coloured fruit; and with Nectarines Mr. Paxman held the same position; Mr. Goodman being 2nd in both instances. Mr. Sage, gr. to the Earl of Dysart, Ham House, was 1st for a Pineapple, with a well ripened fruit. In a strong class for Melons, Mr. Aitken took 1st place; and Mr. Lockie the 2nd. Apples, both culinary and dessert, were well shown, Mr. Aitken being 1st for the former, and Mr. Goodman for the latter. Mr. Lockie won for Cucumbers easily, and was very successful in the collection of vegetables,

winning the 1st place for Messrs. Carter & Co., and Webb & Co.'s prizes, showing superior produce. Mr. Wilkins, gr. to Lady Theodora Guest, Hens- tridge, won 1st for Messrs. Sutton's prizes, being also 2nd for Messrs. Carter's. The amateurs show well in this locality, the exhibits being excellent, the same should be said of the cottagers' classes, in which the competition was very keen, the different classes, particularly Potatoes being very well filled.

TAUNTON DEAN HORTICULTURAL.

August 13.—Despite the adverse season, this giant show appeared to be short of but little of its fair proportions; there were, perhaps, fewer specimen plants than we have seen in previous years.

Plants.—As is usual, Mr. James Cypher was to the fore with some of his superb specimens. He had far away the best twelve stove and greenhouse plants in flower, staging a huge *Phenocoma prolifera* Barnesi, *Kalosanthes coccinea*, specially fine in colour; *Ixoras Pilgrimi*, *Régina*, and *Williamsii*, *Bougainvillea glabra*, *Stephanotis floribunda*, *Allamanda grandiflora*, *A. nobilis*, *Statice profusa*, and three good *Ericas*. Mr. Rowland, gr. to W. Brock, Esq., Exeter, was 2nd, his best plants being *Dipladenia Brearleyana*, *Clerodendron Balfourianum*, *Stephanotis floribunda*, *Ixora Prince of Orange* and *Princeps*, &c.

Mr. Cypher also had the best six, *Allamanda nobilis*, *Bougainvillea glabra*, two *Ericas*, and two *Ixoras* making up the number.

In the amateurs' class for twelve plants, foliaged and flowering, Mr. Rowland was 1st, with some fine specimens, such as *Latania borbonica*, *Cycas revoluta*, *Dipladenia amabilis*, *Allamanda Hendersoni*, &c.; Mr. J. Currey, gr. to Col. Pepper, Salisbury, was 2nd.

Orchids were represented by one collection of four plants from Mr. J. Cypher. He had *Epidendrum prismatocarpum*, *Oncidium macranthum*, and *Cattleyas Gaskelliana* and *Sanderiana*. The best newly-introduced plant in flower came also from Mr. Cypher—one of *Cypripedium oenanthum superbum*; and the newly-introduced foliaged plant was *Pteris tremula Smithiana*, also from the same exhibitor.

Begonias have become favourite exhibition plants at Taunton, and they are done well. The best eight in the open class came from Mr. G. Hawkins, gr. to W. H. Fowler, Esq., Taunton.

In the amateurs' division for six single flower specimens, Mr. W. Cuvill, gr. to H. F. Manley, Esq., Bishop's Halt, was 1st; and in that for six double-flowering, Mr. A. Godfrey, West Moulton, was 1st; and Mr. W. H. Fowler, 2nd. Zonal Pelargoniums were very good, large, well-grown and bloomed plants being staged. In the open class, Mr. G. Way, gr. to G. E. Colthurst, Taunton, was placed 1st, with six singles also with four double-flowered; and he was also 1st in the amateurs' class for six plants. Mr. S. Bruford, gr. to Mrs. Hancock, Hales, being 1st, with four double varieties.

Fuchsias were not so good as usual, though they are always shown so finely at Bath, on the other side of the county; but Cockscombs, Petunias, Balsams, Gloxinias, Achimenes, &c., were generally well done, and made pretty patches of colour. Lilies were a good feature, shown as single plants and as collections of four; the white form of *L. speciosum* preponderating.

Groups.—There were two classes for groups of plants arranged for effect, and in each case the 1st prize was taken by Mr. J. Currey, gr. to Col. Pepper, Salisbury, who has made great headway as a decorator.

Foliage plants were well represented by 1st prize eight from Mr. James Cypher. He has, as is usual, richly-coloured Crotons, the old *angustifolius* being finely shown; *Keotia Fosteriana* and *Belmoreana* *Cycas revoluta*, *Latania borbonica*, &c.; Mr. J. Curry was 2nd. In the amateurs' division, Mr. Rowland came 1st with similar subjects to the foregoing. Exotic Ferns were presented by a good collection from Mr. J. Lloyd, gr. to Vincent Stuckey, Esq., Langport, who had fine bold specimens, *Pteris umbrosus*, *Adiantum grandiceps*, and *Davallia Mooreana*, being the most noticeable; and Mr. Rowland was 2nd. Mr. Curry was 1st with six plants.

There was but one collection of hardy Ferns—a very good one—from Mr. Huxtable, gr. to F. W. Newton, Esq., Barton Grange; and Mr. Huxtable was 1st also with four exotic mosses.

Despite the late season, the cut flowers were yet a good feature. The best forty-eight Roses came from Messrs. Perkins & Son, nurserymen, Coventry, a

very good lot, the deep-coloured flowers being very bright; and Dr. S. P. Budd, Bath, was 2nd. Messrs. Perkins & Son were the only exhibitors of twenty-four varieties, three trusses of each, showing very good flowers in this class also. In the amateurs' division, Dr. Budd was 1st with twenty-four blooms, twelve blooms, and twelve Teas, all very good; and to these three collections the judges awarded the *Gardeners' Magazine* Medal for special excellence in culture. Mr. Thomas Hobbs, Lower Euston, Bristol, and Mr. W. H. Fowler also showed good blooms.

Dahlias were not so numerous as usual. In the open class, Mr. Thomas Hobbs won the 1st prize with a clean and well-finished dozen; Mr. Joseph Nation, Staplegrove, was 2nd; while the latter was the only exhibitor of twelve fancy Dahlias. No single flowers were forthcoming, but the Cactus varieties were shown by Messrs. Nation and Fowler. Asters were numerous, especially the flat-petalled varieties. Gladioli were very fine. Mr. W. H. Fowler, Taunton, is an amateur grower of high skill. He was placed 1st, with a very fine stand of twenty-four spikes, and also with six; Mr. H. Godding was 2nd in the former class. Carnations and Picotees were fairly well shown, and cut blooms of Begonias, both double and single, were of fine quality.

The best stands of twelve and six bunches of stove and greenhouse cut flowers came from Mr. W. Iggulden, gr. to the Earl of Cork, Marston, Frome. Hardy flowers in bold bunches were finely shown by Mr. A. A. Walters, nurseryman, Bath; and Mr. R. H. Poynter, in the open class; and by Mr. J. Cording, gr. to Dr. F. H. Moad, Bishop's Lydeard; and Mr. W. E. Hall, Yeovil, in the amateur's division. Special prizes were offered by Mr. B. R. Davis, nurseryman, Yeovil; and Mr. R. H. Poynter, for their strains of Begonias.

Fruit made a very fine feature, being both numerous and good. The best twelve dishes came from Mr. W. Iggulden, who had excellent Madresfield Court and Foster's Seedling Grapes, Sea Eagle Peach, Lord Napier Nectarine, Shipley Apricot, Oullin's Golden Gage Plum, Smooth Cayenne Pine, Brown Turkey Fig, Golden Gem Melon, &c.; 2nd, Mr. James Lloyd, with Madresfield Court and Muscat of Alexandria Grapes, the latter unripe; Queen Pie, Dymond Peach, Pine-apple Nectarine, Moor Park Apricot, &c.

The best four dishes came from Mr. J. Brutton, Yeovil, who had good Black Humbergh Grapes, Dymond Peaches, Pine-apple Nectarine, and Hero of Lockinge Melon; 2nd, Mr. W. Iggulden, who had Muscat of Alexandria Grapes, Grosse Mignonne Peaches, Stanwick Nectarine, and Melon.

The best three bunches of Black Humbergh Grapes came from Mr. C. Warden, The Gardens, Clarendon Park, Salisbury, who had excellent fruit; Mr. Iggulden being 2nd. The best three bunches of any other black were Madresfield Court, finely finished, from Mr. W. Duffurn, gr. to D. Cox, Esq., Weston-super-Mare; Mr. Iggulden being 2nd. Mr. Connelly, gr. to J. R. C. Talbot, Esq., Lyme Regis, had the best three bunches of Muscat of Alexandria; Mr. J. Lloyd was 2nd. The best three bunches of any other white were those of finely-finished Buckland Sweetwater, from Mr. C. Warden; Mr. T. Crossman, gr. to Earl Poulett, Chippenham, was 2nd with the same. The best Melon was Sutton's Monarch, from Mr. A. Turner; Mr. J. Lloyd came 2nd with Hero of Lockinge. Mr. J. Brutton had the best dish of Peaches, staging very fine Dymond; Mr. Iggulden coming 2nd with Sea Eagle. Mr. R. Huxtable, gr. to F. W. Newton, Esq., had the best dish of Apricots in Smith's Large Early; Mr. Iggulden being 2nd with Moor Park. Mr. Brutton was 1st with Nectarine, having fine Pineapples; Mr. Duffurn coming 2nd with Elruge.

The best dessert Pear was Jargonelle, some good fruit being shown by Messrs. Duffurn and Brutton. The best light-coloured Plum was a very fine Oullin's Gage from Mr. Brutton; and he had also the best dark-coloured in Duke of Wellington; Mr. Iggulden coming 2nd with De Montfort. The best Cherries were Governor Wood and Morello; the best dessert Apples, Beauty of Bath and White Astrachan; the best kitchen Apples, Lord Sulfield, Eckliaville, and Hawthornden. Currants of all colours and Gooseberries were very fine.

Vegetables were a remarkable feature, and not less fine were those shown by cottagers. The fertile vale of Taunton produces these in perfection, and the Potatos were especially clean, bright, and of the finest quality in appearance. Special prizes were offered for vegetables by Messrs. Jarman & Co., seedsmen, Chard, Messrs. E. Webb & Sons, seedsmen, Stourbridge, and Messrs. Sutton & Sons,

seedsmen, Reading. Very fine vegetables were shown, but the competition was decidedly the keenest in the case of Messrs. Sutton's prizes. Mr. Henry Moore, Minehead, won the 1st prize in this, and also in Messrs. Webb & Sons' classes. He also had the best six dishes of Potatos, twelve tubers of each, staging superb examples of The Dean, Reading Russet, Satisfaction, Magnum Bonum, Purple Perfection, and Abundance. Mr. J. Greedy, gr. to Major Birton, came 2nd, with a very fine collection also, having Schoolmaster, The Dean, Satisfaction, Prizetaker, Cosmopolitan, and Windsor Castle. Mr. H. Moore had the best dish of a round Potato, showing The Dean, King of Russets; Mr. H. F. Manley was 2nd. The best white Potato was Abundance, also from Mr. H. Moore. Parsnips, Celery, Cauliflower, Carrots, Turnips, Peas, Beans, &c., were wonderfully fine and numerous throughout the show.

Table decorations, bouquets, &c., quite filled a tent. The best arranged table was set up by Mr. James Cypher, in that charming style for which he is so famous. Mrs. Macalister, Taunton, was 2nd. Mr. Cypher also had the best stand or vase, admirably done; and Mr. Thomas Meakin, Clifton, was 2nd. Mrs. Lee, of Taunton, had the best hand-bouquet, Messrs. Perkins & Son taking the 2nd prize. Pretty stands of wild flowers were shown by Miss Jones, Taunton, and Mrs. Macalister; also bouquets of wild flowers and button-holes.

Contributions of plants and flowers, not for competition, were made by Messrs. Kelway & Son, nurserymen, Langport, who had a superb lot of spikes of Gladioli and other cut flowers; by Messrs. R. Veitch & Son, Nurserymen, Exeter, who had plants and cut flowers; a very interesting contribution by Messrs. J. Jarman & Co., seedsmen, Chard, who had plants and a large assortment of cut flowers; and by Mr. B. R. Davis, seedsmen, Yeovil, who had a fine lot of his prize strain of Begonias. All the foregoing were highly commended, and Certificates of Merit awarded to Messrs. Kelway & Son for Gladioli Lord Wolseley, brilliant crimson, and A. G. Swinburne, primrose-blush and pink.

NATIONAL CO-OPERATIVE FLOWER SHOW AND FESTIVAL, CRYSTAL PALACE.

AUGUST 15.—The flower show was but one element of this annual festival, but it was a very important and conspicuous one. As it draws exhibitors from all parts of England and Wales, it is not to be wondered at that nearly 4500 entries were made, and 500 tables, 8 feet long, were required to accommodate the exhibits. The flower show filled the whole of the eastern part of the nave, but in many parts of the building something was going on relative of the festival, and in the grounds of the Palace also. The task of arranging all these exhibits was a very onerous one, but it was well carried out by Mr. G. Waugh and a staff of assistants; Mr. E. Owen Greening, the Managing Director of the Horticultural and Agricultural Association, taking a general oversight of all the engagements of the day. The schedule of prizes, which included some 251 classes, was divided into two main sections, from one of which all professional gardeners were excluded, and the competition confined to working people only; in the other, gardeners, if members of industrial societies, or their employers, members of the horticultural and agricultural associations, were able to compete. Bearing in mind that it is only six years since the first co-operative flower show was held, the conservatory of the Royal Horticultural Society at South Kensington sufficing to take the exhibits, it is remarkable how rapid it has grown in extent, and still more in the quality of the productions. At the first show the exhibitors had a very elementary knowledge of quality in garden productions of all kinds—even the gardeners who were among the exhibitors from the very first; but they have been quick to learn, and we can say that the quality of the exhibits generally which were staged at the Crystal Palace on Saturday was worthy of any exhibition held throughout the country, and it is obvious that the cultivators of vegetables and flowers are keenly alive to the necessity of growing the very best strains. It was noticed more particularly this year that the competition becomes keener in the leading classes as the quality improves, and it was no easy task to select from thirty to fifty dishes of Peas or Potatos, Beans, Carrots, &c.; five worthy awards, where the average merit is so good.

Some of the most trying work judges have experienced was got through on Saturday last, and on

the whole the awards appeared to give great satisfaction.

Plants are, of necessity, one of the smallest features. Vegetables, flowers, and hardy fruits, can be brought safely from long distances if carefully packed; not so plants. Hence they come from points near to the place of meeting; but they improve if not over large. Such a display of annuals has perhaps never before been seen at the Palace, and the most attractive among the bunches were the Sweet Peas; even Mr. Eckford's new varieties were present. African Marigolds were magnificent; and the number of cut Roses shown, as well as their general good quality, testified to the lateness of the Rose season.

Hardy fruits were a great feature, especially the Gooseberries and Currants; and in the gardeners' class for six dishes of fruit, very good Grapes, Peaches, &c., were staged.

Potatos were beautifully clean and bright, and while large generally, yet very handsome. In the Potato, Carrot, Pea, Runner Bean, and Onion classes, there was a close run among numerous aspirants to honours.

The best collection of farm produce, fruits, vegetables, plants, and flowers, arranged as a trophy, came from the Royal Arsenal Co-operative Society, at Woolwich—in every way highly creditable; Mr. T. Osman taking the 2nd award.

That this annual exhibition is leading many of the working-classes to take an interest in their gardens cannot be doubted. That surely is good, looked at from any point of view; and if they can be led to take an interest in and associate themselves with self-governing industrial enterprises, in the management of which they can assist, and share in any pecuniary advantages derived therefrom, surely the good is augmented, and the community benefited. The movement is on the side of industry, sobriety, self-reliance, and thrift, and, as such, it seems to be deserving of every encouragement.

NATIONAL CHRYSANTHEMUM.

A MEETING of the committee took place on the 17th inst., at Auderton's Hotel, Fleet Street, Mr. Robert Ballantine in the chair. The Secretary announced that he had received notice of the death, in May last, in the 71st year of his age, of Mr. Nicholas J. Bott, formerly so intimately connected with the culture of the Chrysanthemum. A letter was read from Mr. H. Briscoe-Ironside, of Sidcup, resigning his seats on the General, the Floral, and the Catalogue Revision Committees of the Society, having, through failing health, been ordered abroad. The Secretary was instructed to convey to Mr. Briscoe-Ironside the great regret of the committee at his resignation, and their hearty sympathy with him in his illness. The vacancy on the General Committee was filled up by the appointment of Mr. J. Williams, on the Floral Committee, by Mr. Norman Davis; and Mr. Taylor to the Catalogue Revising Committee. The Secretary announced that he had made arrangements for a conference on Chrysanthemum sports, to take place in connection with the exhibition at the Royal Aquarium in November next, and that the Rev. Professor Henslow, M.A., would deal with the question from the botanist's, and Mr. Norman Davis from the cultivator's point of view. It was resolved that the conference take place on the first day, November 10, at six o'clock in the evening, and cultivators were requested to send as many sports as possible, and the varieties from which they had originated, to the conference meeting. The Evesham Chrysanthemum Society and the St. John's Gardeners, Amateurs', and Cottagers' Society were admitted into affiliation, and fifteen new members were elected, including one fellow. The secretary reported there were now 72 Fellows of the Society, 651 ordinary members, and 83 affiliated societies.

SHREWSBURY.

AUGUST 19 AND 20.—This celebrated Society held its annual exhibition of plants, fruits, vegetables, and flowers, on the above dates, and may be pronounced as the best hitherto held by the Society, the entries exceeding 2500 this year.

The show was held in The Quarry, the beautiful grounds of the Shropshire Floral and Horticultural Society. The attendance of visitors was exceedingly good. Want of space prevents us giving more than a brief notice of this excellent show, and therefore many praiseworthy exhibits, including a grandly flowered lot of zonal Pelargoniums, cannot be noticed

in detail. The following is a synopsis of the leading exhibits, which were all admirably staged.

Plants.—In the class for sixteen stove and greenhouse plants Mr. Finch, gr. to James Marriott, Esq., Coventry, and Mr. Cypher, Cheltenham, were placed equal 1st. In Mr. Finch's collection was shown the finest plant of *Ixora Dullii* hitherto seen here, having seventeen trusses of its bright orange-red flowers, about nine inches in diameter; also a fine plant of *Sobralia macrantha*, having seventeen well-developed flower spikes and plenty of healthy foliage; and splendid plants of *Kentia Fosteriana*, *Stephanotis floribunda*, and *Allamanda Hendersonii*. Mr. Cypher's best plants were *Cycas circinalis*, *Croton Queen Victoria*, of great size and fine colour; *Latania borbonica*, *Phaenocoma prolifera Barnesii*, grandly-flowered; and *Ixora regina*.

In the class for six flowering plants, Mr. Finch was 1st, staging good plants of *Ixoras*, &c.

Ferns.—1st, Mr. Roberts, gr. to C. H. Wright, Esq., Oswestry, with a fine half-dozen plants, among which may be mentioned *Microlepia hirta cristata* and *Davallia Mooreana*.

Groups.—These were arranged differently from what one usually meets with at shows—a series of mounds, composed of Maidenhair Ferns, various kinds of Orchids and bright foliage plants, with a Palm in the centre of each, the ground between being covered with moss and dwarf foliage plants, the background consisting of a good bank of Palms, Crotons, Lilies, *Masdevallias*, &c., Mr. P. Blair, gr. to the Duke of Sutherland, securing 1st in the leading class, and 2nd in another. Mr. A. Webb, gr. to J. H. M. Sutton, Esq., Newark-on-Trent, was 2nd in the principal group.

Fruit.—A fine show. Out of four collections of twelve kinds staged, Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, was a good 1st, showing good Black Hamburg, Barbarossa, Muscat of Alexandria, and Foster's Seedlings Grapes, two bunches of each, extra fine Lord Napier Nectarines, Barrington Peaches, Countess Melon, Brown Turkey Figs, Moor Park Apricots, Kirk's Plums, Queen Pine, and Circassian Cherry, a good all-round lot.

Five good collections of nine kinds were staged, Mr. H. E. Kennedy, gr. to Sir C. H. Rouse Boughton, Bart., Ludlow, being 1st. His collection included a dish of Frogmore Pine Strawberry and good Pine-apple Nectarine.

Grapes.—These, on the whole, were deficient in colour. Out of seven stands of black, six bunches in three varieties, two bunches of each, Mr. Bannerman, gr. to Lord Bagot, Battlefield, Rugeley, was 1st, staging good bunches of Alnwick Seedling, Black Alicante, and Black Hamburg; 2nd, Mr. J. Baker, gr. to J. W. Raynes, Esq., Rock Ferry; 3rd, Mr. Iggulden, gr. to the Earl of Cork, Marston House, Frome.

Eleven stands of Black Hamburg, three bunches on each.—Mr. J. Langley, gr. to Rev. Bulkeley Owen, Tedsmore Hall, was a good 2nd, showing large, well-coloured bunches.

Eight stands were shown in the any other black class. Mr. Crawford, gr. to Jas. Thorpe, Esq., Codrington Hall, Newark-on-Trent, was 1st, with grand bunches of Black Alicante. Four bunches of white, in two varieties: Mr. Middleton, gr. to R. Pillington, Esq., Rainford Hall, Birkenhead, was 1st with good bunches of Muscat of Alexandria and Foster's Seedling. With three bunches of Muscat of Alexandria, Mr. Middleton was 1st out of six stands put up, showing handsome solid bunches of a good colour, and large in berry. Any other white Grape, Mr. Iggulden was 1st out of ten lots staged, with Foster's Seedling; Mr. Goodacre being 2nd. Out of eight stands of Black Hamburgs, Mr. Langley was 1st, staging large, well-finished bunches. Any other black than Hamburg, Mr. Pearce, gr. to S. K. Mainwaring, Esq., was 1st, with fine examples of Gros Maroc; eight lots being staged. Finest specimen of black Grape, Mr. J. Crawford was 1st, with a good bunch of Barbarossa—6 lb.

Peaches were largely represented, Mr. Iggulden being 1st, with large fruits of Sea Eagle.

Vegetables.—Seven good collections of twelve kinds were staged, Mr. T. Wilkins, gr. to Lady Theodora Guest, Inwood House, Blandford, was 1st, his Lyon Leek, Ailsa Craig Onion, Satisfaction Potato, new Intermediate Carrots, Perfection Tomato, green Artichokes, and Duke of Albany Pea, were his best dishes; Mr. Waite, gr. to Col. Talbot, Glenhurst, being 2nd, with a good all-round lot.

Potatoes.—Out of seven collections of six varieties, six tubers of each, Mr. Combes, gr. to the Earl of

Dudley, was 1st, showing fine specimens of Windsor Castle, Early White Beauty, Cole's Favourite, Sutton's Abundance, Edgemoor Purple, and Satisfaction. Mr. Waite had the best three dishes, in a good competition, of Pride of Ontario, Queen of the Valley, and Sutton's Seedling.

Tomatos.—Out of nine dishes staged, Mr. J. Squibbs, Gresford, Derbyshire, was 1st, with Perfection.

Peas.—Thirty dishes of Peas were staged, Mr. A. E. Payne, Wellington, being 1st, with good examples of Duke of Albany.

Onions.—Mr. Wilkins was 1st, in a good competition, with Ailsa Craig, spring-sown. Mr. Waite being 1st, with autumn sown, showing Lemon Rocca.

Cut Flowers were shown in large quantities. Messrs. Perkins & Sons, of Coventry, being 1st, in a strong competition, choice Orchids, *Pancreatums*, &c., being used in most of the arrangements.

Roses.—Several good stands of twenty-four blooms were put up. 1st, Messrs. Perkins & Sons, in whose collection the Earl of Dufferin, Her Majesty, Niphetos, Mrs. John Laing, and Harrison Weir were conspicuous.

REPORTS OF THE FOLLOWING SOCIETIES HAVE BEEN RECEIVED.

National Carnation Society, Old Trafford; Langcliff and Stainforth Cottagers' Horticultural Society; Marton Horticultural and Industrial Society; Crick Flower Show; Denley Flower Show; Bovey Tracey Cottage Garden Society; Boulevard Amateur Horticultural Society, Radford, Scorton and District Floral and Horticultural Society; Malmesbury Flower Show; Arlington and District Horticultural Show; Shirehampton Flower Show; Pdirig Amateur Floral Society; Pollokshields Society; Stirling Park Gardens Horticultural Society; Wilts Horticultural; Moor Park.

TRADE NOTICE.

THE AFFAIRS OF MESSRS. HOOPER & CO.

This firm, which carried on business many years in Covent Garden and Maida Vale as seed and horticultural manufacturers and merchants, was formed into a company in 1886, with a nominal capital of £100,000, and was ordered to be wound up in May. Under the winding-up order, the summary of accounts, &c., has just been issued by the provisional liquidator, and shows gross liabilities £19,601, with assets disclosing a surplus of £1,234. The contributories' deficiency is £25,347 10s. It appears that the Maida Vale Nurseries were purchased in 1887, the purchase-money for the whole being £23,640, of which £6,640 was paid in cash. The liabilities were satisfied by the vendors, and the business was carried on at the Central Avenue and the Piazza, Covent Garden, at 83, Regent Street, the Maida Vale Nurseries, and at Paris. The failure is attributed to the expenses having exceeded profits, and to loss by the purchase of stock at Maida Vale. From the deficiency account it appears that the expenses have been £16,958, salaries, &c. £3,307, and miscellaneous expenses £10,819; loss on Paris trading, £1,108; and depreciation of property, £8,406. At present a receiver is acting on behalf of the debenture-holders.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

STAFF REQUIRED.—Will you kindly ask one or two of your able contributors to give the labour required to keep the following sized garden in decent order:—There are 2 acres of kitchen garden, 1 acre enclosed within the walls, which are covered with the usual supply of fruit trees, and about the same outside, cropped with vegetables. Flower borders in kitchen garden for a good supply of cut flowers, &c. There are three vineries, Peach, Fig, and Tomato-houses, and a good supply of pits and frames. These are a quarter of a mile from the mansion. Near the mansion-house there is a conservatory, stove and forcing house, fully 1½ acres of

grass, including two tennis greens and mathematical flower garden, consisting of thirty-six good-sized beds, walks, &c. *A Perplexed Gardener.*

CACTUS.—Will any reader give a few hints as to the best method of getting these plants to bloom. Should they be kept in a moist or dry heat? They seem to bloom them at Kew easily. Do they bloom every year? *Epiphyllum.*

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	ACCUMULATED.				10ths Inchs.	Ins.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the Week.		
	Above (+) or below (−) the Mean for the week ending August 15.	Above 42° for the Week.	Below 42° for the Week.	More (+) or less (−) than Mean for Week, Jan. 4, 1891.					No. of Rainy Days since Jan. 4, 1891.	Percentage of possible Duration since Jan. 4, 1891.
Day-deg.	Day-deg.	Day-deg.	Day-deg.							
1	84	0	+ 153	+ 79	4	142	27.9	14	28	
2	aver 99	0	− 39	+ 101.0	aver 101		13.7	28	31	
3	114	0	− 104	+ 95.0	aver 100		12.2	31	30	
4	aver 130	0	− 123	+ 128	1	110	13.6	32	32	
5	+ 126	0	− 102	+ 116	1	104	14.3	27	31	
6	aver 137	0	− 121	+ 149	1	97	14.1	33	36	
7	aver 105	0	+ 83	+ 46	2	107	17.9	23	31	
8	aver 115	0	− 3	+ 35	6	98	15.9	25	31	
9	aver 129	0	− 82	+ 118.0	aver 104		18.3	35	39	
10	+ 111	0	+ 11	+ 29	4	122	15.3	21	31	
11	+ 125	0	+ 21	+ 31	1	110	17.6	26	34	
12	1	135	0	− 28	+ 40	2	104	14.8	31	47

The districts indicated by number in the first column are the following:—

- 1. Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 15, is furnished from the Meteorological Office:—

"The weather has continued in an unsettled condition very generally. Heavy rain has fallen in the more north-western and northern parts of the Kingdom; but, in the south and east of England, the rain has been comparatively slight, and several fair intervals have been experienced. Thunderstorms occurred in many parts of the Kingdom on the 10th.

"The temperature has not differed materially from the mean. The highest of the maxima, which were recorded on irregular dates in Ireland and Scotland, and on the 14th over England, varied from 77° in 'England, S.', and 76° in 'England, E.', to 67° in 'England, N.W.', and 64° in 'Scotland, N.' The lowest of the minima were registered in most places on the 11th, and ranged from 42° in the north and east of Scotland, to 50° in 'Scotland, W.' and 'Ireland, N.', and to 56° in the 'Channel Islands.'

"The rainfall has been less than the mean in 'England, E.', the 'Midland Counties,' 'England, S.', and also in 'Ireland, S.', and equal to it in 'Scotland, E.', 'England, N.E.', and 'England, S.W.'; in the other districts a somewhat decided excess is shown. A very heavy fall is reported to have occurred in some parts of Lancashire, between the 13th and 14th.

"The bright sunshine has been less than the mean in all districts, except 'England, N.E.' The percentage of the possible amount of duration ranged from 35° in 'England, S.W.', and 33° in 'England, S.', to 21° in 'Ireland, N.', and 14° in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, August 20.

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

HEAVY supplies of hard goods to hand, prices ruling low. Kent Filberts in good supply. James Webber, Wholesale Apple Market.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table with columns for flower types (Asters, Bouvardia, Carnations, etc.) and prices in s.d. and s. d. formats.

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing various plants in pots (Aralia Sieboldi, Aspidistra, etc.) and their prices.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing various vegetables (Artichokes, Beans, Beet, Carrots, etc.) and their prices.

POTATOS.—The end of last week's trade was a very bad one. Many parcels had to be cleared at 35s. to 45s. per ton, and those not sold have since been disposed of for cattle use, being so badly diseased. The orders to stop sending this week has had the effect of shortening supplies, with an upward tendency in prices for sound parcels. During the next month markets are likely to be unsteady. Best samples 70s. to 80s. J. B. Thomas.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table listing various fruits (Apples, Currants, Gooseberries, etc.) and their prices.

FRUITS AND VEGETABLES.

BOROUGH: Aug. 12.—Quotations.—Cabbages, 2s. 6d. to 4s. 6d. per tally; Onions, 2s. 6d. to 3s. per dozen bunches, and 4s. 6d. to 5s. per cwt.; Carrots, 2s. to 2s. 6d.; Turnips, 1s. 6d. to 2s. 6d. per dozen bunches; Marrows, 6d. to 1s. per dozen; Peas, 2s. to 3s. per bushel, and 3s. to 5s. per bag; Scarlet Beans, 2s. 6d.; French Beans, 2s. to 2s. 6d. per 12 lb. Turnips, 2s. to 2s. 6d. per dozen bunches; Carrots, 1s. 6d. to 2s. 6d. do.; Parsley, 1s. to 2s. do.; Horseradish, 12s. to 14s. per dozen bundles; Cos Lettuce, 4d. to 8d. per score; Eodive, 1s. to 1s. 6d. per dozen; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Beetroot, 3d. to 6d. per dozen roots; English Apples, 1s. 6d. to 3s. 6d. per dozen bushels; Gooseberries, 2s. 3d. to 3s. per half-sieve; Green Gages, 2s. 9d. to 3s. 9d. per flat; Orleans Plums, 3s. per half-sieve; Red Currants, 3s. to 3s. 6d. do.; Black do., 7s. 6d. to 8s. do.; Black Cherries, 4s. to 5s. do.; Raspberries, 37s. 6d. to 40s. per cwt.; English Tomatoes, 3s. to 6s. per 12 lb.

SPITALFIELDS: Aug. 18.—French Beans, 2s. 6d. to 3s. per bushel; Scarlet do., 3s. to 4s. do.; Peas, 3s. to 4s. per sack; Cabbages, 2s. to 4s. per tally; Marrows, 9d. to 1s. 3d. per dozen; Broad Beans, 1s. per bushel.

STRATFORD: August 18.—There has been a good supply of all kinds of produce at this market during the past week, and a fair trade was done at the undermentioned prices:—Cabbages, 3s. to 5s. per tally; Carrots, household, 1s. 6d. to 2s. 6d. per dozen bunches; Mangels, 30s. to 34s. per ton; Onions, Egyptian, 100s. to 110s. do.; do., Oporto, 6s. to 7s. per case; Apples, English, 3s. to 7s. per bushel; Scarlet Beans, 4s. to 5s. per sieve; French Beans, 3s. to 4s. do.; Windsor Beans, 2s. 3d. to 2s. 6d. do.; Red Currants, 3s. to 4s. 6d. per half-sieve; Black Currants, 7s. to 7s. 6d. do.; Plums, 2s. to 3s. 9d. do.; Marrows, 3s. to 5s. per tally.

NOTICES TO CORRESPONDENTS.

ADDRESS WANTED.—Will Mr. H. ALCOCK, late of 35, Ordish Street, Burton-on-Trent, kindly furnish his present address?

ADVERTISEMENTS: E. A. M. Unless you give us more details we cannot answer your question.

APPLE LEAVES: G. B. The fungus on your leaves is the same that causes Apples to crack on the surface. The Americans are using sulphate of copper in fine powder or solution, but we have no experience as to its value in this disease.

BOOKS: F. G. M. Oliver's Lessons, Masters' Botany for Beginners (Bradbury, Agnew, & Co.), or Edmond's Elementary Botany. Read Darwin's Works; do not attempt to learn the natural orders without specimens in hand; start with British plants, first looking over the descriptions given in British Flora.—A. E. Epitome of Gardening (Black & Co.), is suitable for an amateur gardener.

BUSH CHRYSANTHEMUM BUDS: Amateur. If the plants upon which buds have already formed belong to the Japanese family and are late flowering kinds, such as Boule d'Or, Grandiflora, or Etoile de Lyon, for instance, I would advise that they be retained, except they have had their buds set for two or three weeks. All plants belonging to this family should have their buds left now. Should any of the medium or early-flowered kinds have set their buds, they should be removed, the shoots disbudded to one on a branch, and wait for the next bud. The same remark applies equally to the incurved section. From this date onwards, any buds which form of any variety should be retained. Promptly remove all growths which cluster around the buds and down the stem, which will concentrate the whole energy of the plant into the few selected flower buds. E. Molyneux.

CHRYSANTHEMUM BUDS: A. S. The centre bud is what is known most generally as the "crown" bud, being placed in the centre of the young shoots, which spring from the base of the flower-bud. In the case of the Japanese family, if large exhibition blooms are required, "crown" buds which form at this time are the best for producing them, and also many of the incurved section succeed best from that bud. In fact, all do north of London; but south of that point, "crown" buds forming during the early part of this month are too early to give the best results in the "Queen" family. In that case remove the bud and all shoots but one, and wait until another bud is formed. E. Molyneux.

FLOWER SHOWS: Anxious. It is impossible to report all of these, or even to give full accounts of any but the most important. We have before us as we write, notes of more than fifty such Shows held last week alone.

GRAPES: Hortus, Wales.—Your Muscat Grapes are very fair samples—might be better set; more heat at the time of setting is most likely required. There are some spider outlives, which would account for some of the rusty appearance. Have you syringed them? Your Black Hamburgs are, no doubt, overcropped. Dress them in the autumn with good fresh loam and Thomson's Manure.—Subscriber. The berries you have sent us are curiously damaged, as if by mildew, but we are not quite sure of this, and will examine them more fully.

GRAPES NOT COLOURING: A. Cox. Judging from your statement, and the samples sent us, which are quite ripe and sweetly flavoured, the failure we should attribute to the maintenance of a too close

and warm atmosphere during the colouring period. Give more air night and day, keeping the piping warm to promote circulation—a much lower temperature would suit better; also give more water, much more, we should say, than a quarter of a gallon per foot. You should read Vines and Vine Culture, if you have not done so.

Ivy: A Subscriber. Ivy cuttings may be put in now in shady places; pieces with roots do better, but they will succeed without.

NAMES OF FRUITS: M. J. 1, Sea Eagle; 3, Warrington; 5, Whitesmith; 6, Porcupine; other fruits unfortunately smashed. We have no note of any other parcel being received.—C. K. It is somewhat too early to name late Apples with any degree of certainty. Their characters are not yet fully developed. Of those sent, No. 1 may be Gloria Muodi, No. 2 Warner's King, No. 3 Beauty of Kent; others cannot be recognised.

NAMES OF PLANTS: Erectus, 1, Laurelia aromatica; 3, Eucryphia pinnatifolia; 5, Cephalotaxus Fortunei; 8 or 9, Eugenia apiculata; 10, Myrtus sp. We cannot identify more from the species sent. Send better specimens.—W. D. H. Sparganium ramosum.—A. E. R. 1, Centranthus ruber; 2, Lysimachia vulgaris; 3, not recognised.—Bedale, 1, Veratrum nigrum; 2, Lysimachia vulgaris; 3, not recognised.—E. C. C. D. Populus alba, or one of its varieties.—W. Higgin. Potentilla fruticosa.—J. E. Pernetty mucronata.—A. G. L. 1, Thuia occidentalis var.; 2, T. o. var. plicata; 3, Retinospora plumosa; 4, R. pisifera; 5, Juniperus virginiana.—J. W. Pittosporum tenuifolium.—G. W. J. 2, Ficus Parcelli; 3, Pilea muscosa; 4, Begonia fuchsoides; 5, Dipteracanthus affinis, probably—send when in flower; 6, Begonia metallica (incarnata); 7, Begonia, garden variety; 8, Bomaria Carderi; 9, Trachelospermum jasminoides; 10, Anthericum lineare variegatum.—Subscriber, 1, Campanula isophylla; 2, Yucca aloefolia variegata; 3, Francoa appendiculata; 4, Begonia argyrostigma.—R. P. Zephyranthes atamasco.—J. H. Hedychium Gardnerianum.—T. H. E. 1, Sedum spectabile; 2, Helianthemum vulgare, var. Fireball; 4, Veronica spicata variegata; 3, next week.

NEW PEAS: C. Sharpe & Co. A dwarf Pea of compact habit, with about eight or nine large, well-coloured Peas in each pod. The variety seems very productive, but the flavour of the sample sent is only fair.

ONION FLY: A Subscriber. Your Onions are attacked by the maggots of the Onion fly (Anthomyia ceparum). Take up the whole of the infested plants at once with a knife or spud, and burn them. Try soft-soap suds to destroy any maggots which may remain. In winter, trench the ground two spits deep, so as to bury the chrysalids, as the fly cannot reach the surface if deeply buried.

RASPBERRIES: W. Wilson. There are several sorts of Raspberries which fruit in the way you describe. Belle de Fontenay may be named as one. It is well worth growing.

SECOND FLOWERING OF APPLES: Westmorland. Not uncommon. The flowers are produced on the shoots of the year, as in a Rose. A similar thing happens in Laburnum and many other plants.

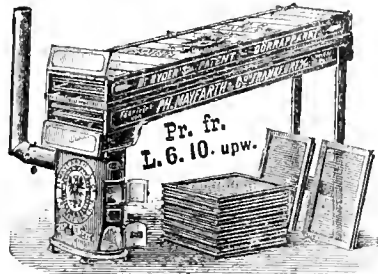
CATALOGUES RECEIVED.

- W. FROMOW & SONS, Sutton Court Nursery, Chiswick, W.—Dutch and other Bulbs.
WILLIAM BULL, King's Road, Chelsea—Tuberous and Bulbous-rooted Plants.
JULES DE COCK, Ledeberg, near Ghent—Azaleas, Palms, &c.
B. S. WILLIAMS & SONS, Upper Holloway, London—Bulbs, Roses, &c.
THOMAS LAXTON, Bedford—Strawberries.
C. W. COUSINS, High Street, Wood Green, N.—Bulbous Roots.
JAMES CARTER & CO., High Holborn, London—Bulbs.
SUTTON & SONS, Reading—Bulbs.
B. S. WILLIAMS & SONS, Upper Holloway, London—Bulbs and Fruit Trees.
E. P. DIXON & SONS, Hull—Bulbs.

COMMUNICATIONS RECEIVED.—W. S.—E. T.—J. H.—R. D.—W. E. G.—Carbolic.—G. N.—G. D.—Professor Henriques, Coimbra.—R. A. B.—Alfred Wallace.—D. McAlpine, Melbourne.—H. H. D.—J. C. S. (next week).—Professor Trelease, St. Louis.—A. G. C.—Visconde de St. Leger, Rio Janeiro.—M. Coombs, Brussels.—A. O. W.—G. B.—J. M.—G. W.—W. E.—J. B. F.—M. D.—E. W. Burbridge.—S. C.—J. T.—D. T.—E. W. R. W. (with thanks, but furnished by our own correspondent).—G. P. D.—A. C.—J. H. M.—H. E.—W. S.—James Douglas.—E. W. G.—Stuart & Mein.

FRUIT, &c., EVAPORATOR.

New Improved System Patent Ryder.



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cultural Society's Gardens, at Chiswick (close to Turnham
Green, London, W.), where it will be open to inspection
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	16 x 12	20 x 16	
	18 x 12	22 x 16	
	20 x 12	24 x 16	
	16 x 14	20 x 18	
18 x 14	22 x 18		
20 x 14	24 x 18		

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S. Wales, June 29, 1890.
Sir,—Am very well pleased with the Distributor; it does its
work well, and is a most useful invention.—Yours faithfully,
LISBURN.

PATENT SPRAYER.

Extract from letter from Mr. G. Norman, Gardener to
The Right Hon. The MARQUIS OF SALISBURY.
The Gardens, Hatfield House, Herts, April 20, 1891.
SIR,—I am pleased to report that I consider your Distributor
a very useful invention.

PATENT SYRINGE.

Extract from letter from R. White, Esq., Ardarruch,
Gareloch Head, Dumbartonshire.
July 20, 1891.
I consider the Syringe bought from you one of the cheapest
and best I ever had. It is especially good for spraying Odontoglossums.

KILLMRIGHT.

Extract from letter from Mr. J. Young, Head Gardener to
the Zoological Society, Regent's Park, London.
July 22, 1891.
It is the best Insecticide I have ever used, and the cheapest.

FEEDMRIGHT.

Extract from Letter from Mr. T. Wise, Gardener to
F. TAYLOR, Esq., Ash Lawn, Heaton, Bolton.
September 20, 1890.
Your Patent Manure has given us every satisfaction.

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FOR DESTROYING WEEDS, MOSS, &c.

ON CARRIAGE DRIVES,
GARDEN WALKS, ROADS, STABLE-YARDS,
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Saves more than twice its cost in Labour. No Smell.
One application will keep the Walks and Drives
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in 5-gallon Drums, 1s. 6d. per gallon. 10 and 15-gallon
Drums, 1s. 4d. per gallon. Special quotations for larger
quantities. Carriage paid on 10 gals. and upwards.

Used in the proportion of one gallon to twenty-five gallons
of water.

For particulars of ANIL-FUNGI POWDER for TOMATO
DISEASE, ZINC LABEL INK, GARDEN MANURES, WORM
KILLER, &c., write to the Sole Proprietors and Manufacturers,
THE "ACME" CHEMICAL COMPANY,
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and Carlton Street, Bolton, Lancashire.

Bonâ Fide BENTLEY'S Bonâ Fide WEED DESTROYER.

Mr. J. HUDSON, Gunnersbury House Gardens, writes:—"I
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time and labour."

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pleased to tell you that I am exceedingly gratified with the
results of your Weed Destroyer, as it destroys both Weeds and
Moss on the walks most effectually, and gives the gravel a
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In the following sizes, carriage paid:—
3 Gallon Drums, 5s. 6d. | 12 Gallon Casks, 19s. 0d.
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FOR PLANTS.

QUICK. LASTING. ECONOMICAL.

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DEAR SIR—Having used your "Clay's Invigorator" for some
time, I am exceedingly pleased with the results obtained from
it. As an Exhibitor I have used it upon most sorts of Vege-
tables with great advantage; also upon many sorts of Stove
and Greenhouse Plants, Melons, Cucumbers, Tomatos, Pot
Strawberries, Chrysanthemums, &c. For Lawns it has a quick
and beneficial effect. For Amateurs and those with small
gardens, where there is a difficulty in obtaining stable or farm-
yard manure, your "Invigorator" ought to be of special value,
as it is clean in use, easy of application, and reasonable in
price.—Yours respectfully, J. GILMOUR, Gardener to the
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Used in the proportion of 1 gallon to 25 gallons of Water.

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factures cannot be obtained genuine at Tunbridge, Kent,
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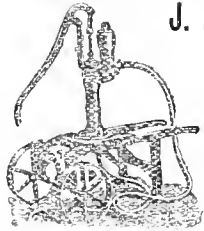
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Suction Hose, 10 feet, 17/6

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Mr. GEO. F. BROTHERSTON, late Foreman at MARQUIS OF ANGLESEA'S, Plas Newydd, as Head Gardener to Mrs. TITUS SALT, Milner Field, Bingley, Yorks.

Mr. W. TILLING, who has occupied the position of Foreman for the past nine years, has been appointed Head Gardener to the Right Hon. the Earl of WILTON, Heaton Park, Manchester, Mr. JACKSON, the late Head Gardener, having retired on a pension.

Mr. E. H. CATERER, formerly Gardener at Brookside, Headington Hill, Oxford, as Gardener to ACTON T. GRIFFITH, Esq., Elmsfield, Hertford.

Mr. WILLIAM PARKS, who has been Gardener at Fernside, Bickley, for seven years, has been appointed Gardener to WILLIAM PARKER, Esq., Whittington Hall, Chesterfield.

Mr. WILLIAM CRANE, late of Springfield, co. Antrim has been appointed Head Gardener to T. W. GIBBINS, Esq., Dunkathel, Glanmire, co. Cork.

ALEXANDER ADAMS, formerly Foreman at Normanhurst Court, has been appointed Head Gardener to the BARON HENRY DE WORMS, Henly Park, Guildford.

Mr. PATERSON, late Foreman to Mr. WOOLFORD, Gardener to G. PALMER, Esq., M.P., Reading, as Gardener to H. M. POLETT, Esq., Fernside, Bickley.

GEORGE PENDERED, as Head Gardener to Mrs. ROBINSON, Holmwood, Sydenham Rise, Sydenham.

Mr. JOHN LINDSAY, late Gardener at Bonnington Bank House, Edinburgh, as Gardener to WALTER H. WILSON, Esq., Stranmillis, Belfast.

Mr. W. WILLIAMS, for the past four years Foreman at Cuffbells Park, Lyndhurst, Hants, as Head Gardener to Mrs. COMPTON, The Manor, Minstead, Hants.

Mr. ELDON QUANTRILL, late Foreman at Porter's Park, Shenley, has been appointed Head Gardener to Mrs. HOLT, Waratah, Chislehurst.

Mr. W. SMITH, for eleven years Head Gardener to the recent Bishop of Winchester, at Farnham Castle, as Gardener and Bailiff to Mrs. LILTON, Ingersley, Lord's Wood, Southampton.

Mr. J. H. GUNTER, recently FOREMAN at Whitfield, near Hereford, has succeeded in obtaining the situation as Gardener to G. W. HADEFELD, Esq., Moraston House, Ross, recently advertised in our paper, out of 173 applicants.

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ORCHID PEAT; best Quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices of WALKER AND CO., Farnborough, Hants.

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BREAKFAST OR SUPPER.

Borough of Rotherham.

THE CORPORATION REQUIRE the services of a GARDENER, between 30 and 40 years of age, to take charge of Clifton Park. Wages, 30s. per week, with house-rent free. One with a knowledge of Forestry and Landscape Gardening will be preferred. Written applications, endorsed "Park-keeper," to be sent in to me on or before the 20th inst.

By order, H. H. HECKMOTT, Town Clerk,
Council Hall, Rotherham, August 13, 1891.

WANTED, September 14, a HEAD WORKING GARDENER, married, without family, about 35. Three Vineries, Melon, Cucumber, and Peach-houses, Stove and Greenhouse. Two others in Garden. Churchman, thoroughly understanding Vines, &c. Wages, 25s. a week, cottage and milk. Interview required.—Letters stating age, wages, family, experience, references, and all particulars, to S. F. STONE, Esq., Kirby Frith Hall, Leicester.

WANTED, at end of September, for Cornwall, a good WORKING GARDENER, for a Single-handed place; married. Wages, 18s. per week, with seven-roomed Cottage and large Garden. Must be steady, honest, and reliable; none without a good personal character from last employer need apply. His Wife might do the Laundry work for the family, if she is competent, should she desire.—Apply, CARTER, PAGE, AND CO., Seed Merchants, 53, London Wall, London, E.C.

WANTED, a GARDENER—Small Glass-houses, General Work. Wanted to play harmonium, or sing Sankey's Hymns at Sunday night small village meeting; abstainer.—Address, HOMESTEAD, Mellong, Carnforth.

WANTED, for Southport, a thoroughly competent GARDENER, having good testimonials and thorough knowledge of his business to take the entire charge of the Glass Department. Must be good Salesman and used to growing for Market, as he will be required to make the same pay.—Apply, wages, &c., by letter, to JOHN SHAW, Landscape Gardener, Bawdon, Cheshire.

WANTED, a GARDENER, where a boy is kept. Must be thorough both as to Flowers and Vegetables. Abstainer preferred. Wife must be able to take Laundry.—Apply by letter to Mrs. COLLINSON, Hatfield, Herts.

WANTED, a steady MAN, as SECOND GARDENER, married, to take charge of Glass, and assist outside. Must have a good knowledge of Vines and Plant-growing. Abstainer preferred. Wages, 18s. per week, cottage, and garden.—Apply, H. HATCH, Farnhurst, Cowden, Kent.

WANTED, a good ROSE-BUDDER, for a few thousand stocks.—State particulars to GEO. BOLTON, Buntingford, Herts.

WANTED, a young MAN, not under 22, as SECOND GARDENER. Must be well up in his work, both Indoors and Out.—Apply to H. HOWELL, Fredville Park, near Dover.

WANTED IMMEDIATELY, a thorough good CARNATION GROWER. State age, experience, &c.—Address GARDENER, Loudwater House, Rickmansworth, Herts.

WANTED, shortly, a first-class WORKING FOREMAN.—Well up in Growing Grapes, Flowers, Cucumbers, Tomatos, Ferns, &c., for Market. Good wages will be paid to a steady, reliable man.—Address, with reference, wages, &c., F. M., 47, Hart Street, Covent Garden, W.C.

WANTED, a practical Man as WORKING FOREMAN, SALE-MAN, PROPAGATOR, &c. Must have thorough knowledge and experience. State age, wages expected, where trained and last employed, to THOS. STEAD & SON, Holly Nurseries, Bold, near Warrington.

WANTED, for private place, where part produce is sold, a young MAN, as FOREMAN, under Glass, two under him, and in Rothy. Character for steadiness and industry, with some knowledge in Orchids. Wages, 17s. weekly.—HEAD GARDENER, Whitfield, near Hereford.

WANTED, a first-class WORKING FOREMAN, thoroughly competent to grow quantities of Choice Flowers, Plants, &c., for Market; also Cucumbers, Tomatos, Melons, &c., with a good knowledge of Nursery Work. Applicants must have filled similar positions before, and be capable of managing a place. Total abstainer preferred.—Apply, with refer. wages, and salary required, E. GRIFFIN AND CO., 1, Queen Street, Cardiff.

WANTED, AT ONCE, young MAN for the Houses. One that has some knowledge of Orchids, and could undertake the Sale of Cut Flowers.—J. PREWETT, Swiss Nursery, Hammermith, W.

WANTED, a young MAN in a Market Nursery, used to Tomatos, Cucumbers, &c., to work under a Foreman.—Apply, by letter, to LOMBARA, Post Office, Hextable, near Swanley, Kent.

WANTED a young MAN (Scotchman preferred), for Out-door Work, with experience of Strawberries and Tomatos under Glass. State age.—R. TURNER, Northbourne Abbey, Deal.

WANTED, a young MAN, in a Nursery. Must understand Propagating soft-wooded Plants. Wages, 15s., with rise if suitable.—Apply, 192, Haverstock Hill, N.

WANTED, a sharp, active young MAN. Must be quick at Potting, and careful at Watering. 1s. per week.—State age, with references, to TURNER BROS., Florists, Garston, Liverpool.

WANTED, a MAN thoroughly acquainted with all kinds of Forcing in Houses, for Market purposes.—Apply, J. P., West Hall, Mortlake.

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Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, Liverpool, are in a position to recommend a first-rate man as HEAD GARDENER, or GARDENER and BAILIFF; also a thoroughly competent man as HEAD GARDENER, who has a good knowledge of Orchids; unexceptional references in each case.

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JOHN LAING AND SONS can at present recommend with every confidence several energetic and practical Men of tested ability and first-rate character. Ladies and Gentlemen in want of GARDENERS and BAILIFFS, and HEAD GARDENERS for first-rate Establishments or Single-handed Situations, can be suited and have full particulars by applying at Stanstead Park Nurseries, Forest Hill, London, S.E.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester (Limited), are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address—"DICKSONS, CHESTER."

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

SANDERS, St. Albans, can thoroughly RECOMMEND several first-class HEAD GARDENERS.

STEPHEN CASTLE, F.R.H.S., has on his List, among others, a HEAD GARDENER of thorough good reputation, with high-class characters, which will bear strict investigation. Full particulars on application.—Ashford Vineyard, Fordingbridge, Salisbury.

GARDENER (HEAD), and ORCHID GROWER.—Age 31; seventeen years' experience in Orchids, Stove and Greenhouse Plants, early and late forcing, hardy Fruit, Flower, and Kitchen Gardens.—WILLIAM LAKE, Quorn Lodge, Loughborough, Leicestershire.

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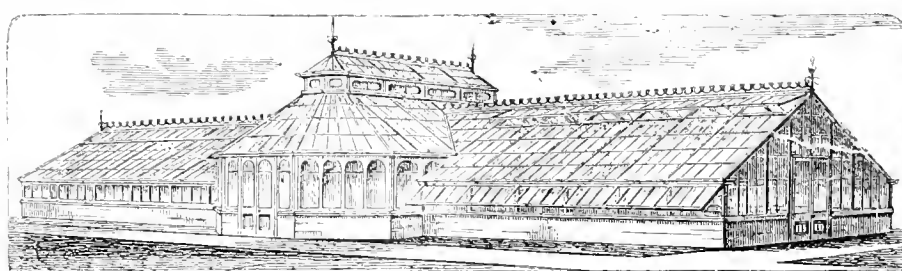
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 Plants Guaranteed best in the Trade.
B. GILBERT, High Park, Stamford.

IMPORTANT PRIVATE SALE.—70,000 Fruit Trees, Roses, Rhododendrons, Shrubs, &c., transplanted young trees. Catalogues gratis. The Hardy Flowers in Half-guinea. Assorted Hampers of 15 doz.; many cost 5s. per dozen. Removing. Estate Agent, Hon. GERTRUDE JONES, Churchfield, Cradley, near Malvern.

BARR'S CATALOGUES.—Free on Application.
 LIST of AUTUMN-FLOWERING CROCUS and MEADOW SAFERON. BULB CATALOGUE of cheap, rare, beautiful hardy bulbs, &c., for all seasons. DAFFODIL CATALOGUE, illustrated, contains the only complete list of these beautiful hardy spring flowers. PLANT CATALOGUE of free flowering, beautiful hardy perennials, for flower borders and for cut flowers. SEED CATALOGUE, ready January 1, 1892.
BARR AND SON, 12, King Street, Covent Garden, W.C.

VISITORS TO THE CONTINENT are cordially invited to visit the Establishment of **L'ORTICULTURE INTERNATIONALE**, Directors, Messrs. J. LINDEN and LUCIEN LINDEN, Leopold Park, Brussels. This grand Establishment contains the FINEST and LARGEST STOCK OF ORCHIDS and NEW PLANTS in Europe. Large Conservatories, &c. English CATALOGUE sent gratis.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—**MR. GEORGE, 10, Victoria Road, Putney.**
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers, CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Dutch Bulbs.—Great Unreserved Sales.
EVERY MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., FIVE DAYS WEEKLY, as above, at half-past 11 o'clock each day, LARGE CONSIGNMENTS of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from HOLLAND. Lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Friday Next.

ODONTOGLOSSUM ALEXANDRE.
ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. F. Horman & Co. to SELL by AUCTION, at their Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 4, at half-past 12 o'clock, a splendid importation of ODONTOGLOSSUM ALEXANDRE, all specially selected pieces, together with a large number of well-grown ESTABLISHED ORCHIDS, including several fine species. The Sale will also include a quantity of ESTABLISHED ORCHIDS from other owners.

On view morning of Sale, and Catalogues had.

Croydon. Expiration of Lease

Three minutes' walk from West Croydon, and ten minutes' in East Croydon Stations.

CLEARANCE SALE of STOVE and GREENHOUSE PLANTS, by order of Mr. T. Butcher, whose Lease expires at Michaelmas next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, London Road, Croydon, on TUESDAY, September 8, at 12 o'clock precisely, 1000 PALMS, in variety; 200 ADIANTUM CHEIMATUM, 50 AZALEA INDICA, well set, mostly white; 100 CAMELLIAS, chiefly white, 200 ORCHIDS, in variety; Specimen BAYS, ORANGE TREES, FERNS and PALMS, TEA ROSES, EUCALIPTS, 100 CHRYSANTHEMUMS, extra fine plants, all named, and well grown, FLOWERING and DECORATIVE PLANTS, OYAS, STEPHANOTIS, and a large assortment of other plants.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; of Mr. T. BUTCHER, the Station Road Nursery, South Norwood; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tatsfield, on the borders of Surrey and Kent.
Two miles from West Croydon Station.

IMPORTANT to FRUIT GROWERS and LAND SPECULATORS. Immediate possession. Free conveyances. Payment by instalments.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, in a Marquee on the Estate on TUESDAY, September 8, at half-past 1 o'clock, 200 Plots of FREEHOLD LAND, with frontages of 30 to 150 feet, and depths of 200 to 400 feet, on the Manor House Estate, Tatsfield, Surrey, commanding most beautiful views, and specially adapted for Villa Residences and Fruit Growing. A special train will leave Cannon Street on the morning of Sale, and Luncheon will be provided.

Particulars had of T. BURANT, Esq., Solicitor, 5, Guildhall Chambers, Basinghall Street, E.C.; and with tickets, of R. VARY, Esq. (the Vendor), 9, Leadenhall Street, E.C.; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Upper Edmonton.

The Dyson's Lane Nurseries, about five minutes' walk from Angel Road, and eight minutes from Silver Street Station on the G. E. R.

SIXTH GREAT ANNUAL TRADE SALE of about 60,000 GREENHOUSE and other PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to SELL by AUCTION, on the Premises as above, on MONDAY, September 11, at 11 o'clock, punctually, owing to the large number of lots, about

60,000 STOVE and GREENHOUSE PLANTS, exceptionally well grown, and in the best possible condition, the principal items comprising—

- 10,000 Tree Carnations, including Mrs. Moore, Duke of Eife, Floran, Winter Cheer, Mrs. Reynolds Hope, and many other first-class varieties
- 2,000 Tea Roses in pots, extra strong, amongst them Marechal Niel, Gloire de Dijon, W. A. Richardson, and others, with well opened growths, 12 to 15 feet long
- 20,000 Ferns, all the most marketable sorts, many in varieties
- 10,000 Bouvardias (including purity (new white), President Cleveland, Mrs. Robt. Green, Conchissima, and the best double and single varieties
- 5,000 young Palms
- 3,000 Genistas, fine bushy plants
- Kentias (good plants), Crotons, Eucharis, Aralias, Clematis, Lilies, Ampelopsis, Azaleas, Solanums, and other plants.

May be viewed any day prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Derby.—The Mile Ash Nurseries.

CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, 600 CAMELLIAS, including many specimens, large PALMS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, September 9 and 10, the whole of the GREENHOUSE and STOVE PLANTS.

The outdoor NURSERY STOCK will be sold in October. Auction and Estate Offices, 67 and 68, Cheapside, E.C.

East Grinstead.—Without Reserve.
IMPORTANT to the TRADE and PRIVATE BUYERS.
SECOND ANNUAL SALE of WELL-GROWN STOVE and GREENHOUSE PLANTS, fit for immediate sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Roberts Bros., to SELL by AUCTION, on the Premises, the Moat Nursery, East Grinstead, close to the Railway Station, on FRIDAY, September 11, at half-past 11 o'clock precisely, the following unusually well-grown stock:—

- 2000 Roses in pots
- 5000 Bouvardias
- 800 Azaleas
- 2500 Palms, in variety
- 150 Specimen Eucharis, grand plants
- 10 Half-specimen Eucharis
- 1500 Double White Primulas
- 2000 Adiantum cuneatum

Cyclamen, Begonias, Callas, Gardenias, 2000 Lilium Harrisii and 2000 L. candidum (bulbs), &c.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Lee, Kent, S.E.

GREAT ANNUAL SALE of WINTER BLOOMING HEATHS and other PLANTS—the stock this season being unusually well grown and in splendid condition—to commence punctually at 11 o'clock, there being upwards of 1200 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. R. Muller & Sons to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, S.E.R., on TUESDAY, September 15, without reserve, a grand collection of remarkably well-grown

- WINTER-BLOOMING HEATHS and STOVE and GREENHOUSE PLANTS, comprising:—
- 20,000 Erica hyemalis
- 5,000 " gracilis
- 2,000 " Cavendishii
- 1,000 " coccinea minor
- 600 " caffra
- 1,000 Adiantum cuneatum
- 1,000 Lomaria gibba
- 800 Tea Roses, in pots
- 1,000 Cyclamen persicum
- 500 Crotons, beautifully coloured
- 500 Acacia armata
- 1,000 Boronia megastigma, and others
- 1,000 Grevillea robusta
- 1,000 Ampelopsis Veitchii

And a large quantity of young Erica hyemalis, Cavendishii, gracilis, and others; also Genistas and Epacris, all in 60-pots for growing on.

The Stock may now be viewed. Catalogues obtained on the Premises; at the Seed Warehouse, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G.E.R. TWENTY-THIRD ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

The Sale to commence punctually at 11 o'clock, there being upwards of 1500 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Muller to SELL by AUCTION, on the premises as above, on THURSDAY, SEPTEMBER 17, 1891, without reserve, upwards of 1500 lots of remarkably well-grown

- STOVE and GREENHOUSE PLANTS, mostly in 48 pots, and fit for immediate Sale, consisting of:—
- 15,000 water-blooming Heaths, the best lot offered at this Nursery for many years, including hyemalis, gracilis, Cavendishii, ventricosa, in variety, &c.
- 3000 Tree and other Carnations, leading varieties, including Mrs. Moore, Duke of Eife, Duke of Clarence, Winter Cheer, Germania, &c.
- 5,000 Bouvardias, best vars.
- 2,000 Grevillea robusta
- 5000 Genistas
- 500 Double White Primulas
- 1000 Adiantum cuneatum
- 500 Crotons, beautifully coloured
- Large Azaleas for cutting.
- Palms, Ficus

Also quantities of Epacris to name, Callas, Pansy-tias, Golden Enonymus, Gardenias, Geraniums, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the premises; at the Brimsdown Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sutton.—Camden House Gardens.

IMPORTANT SALE of the whole of the valuable Collection of ORCHIDS, STOVE and GREENHOUSE PLANTS, which are so well known at the local shows—Preliminary.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Gardens, Camden House, Sutton, without reserve, on THURSDAY, September 24, the whole of the valuable Collection of STOVE and GREENHOUSE PLANTS, comprising about 500 lots, and including beautifully-grown Specimen Azaleas, large Lapagerias, choice-named Begonias, many Specimen Plants, Stephanotis, Crotons, fine-trained Exhibition Fuchsias, Camellias, Palms, &c.

Messrs. PROTHEROE AND MORRIS desire to call special attention to the ORCHIDS, which include numerous fine varieties, the greater portion of them having been purchased in flower.

May be viewed. Catalogues of Mr. COOK, the Gardener, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY, September 15, at 11 o'clock precisely, in consequence of the large number of lots, a large quantity of—

WINTER-FLOWERING AND OTHER PLANTS, including:—

- 20,000 Erica hyemalis
- 1,000 Tree Carnations
- 4,000 Erica gracilis
- 6,000 Genista fragrans
- 6,000 Ampelopsis Veitchii, 4 feet
- 1,000 Epacris
- 2,000 Lapageria rosea superba
- 6,000 Cyclamen persicum (Fraser's superb strain)
- 2,000 Passiflora Constance Elliott and corolla
- 10,000 Clematis Jackmanii and other best named sorts
- 1,000 Deutzia gracilis, established in pots for earliest forcing
- 2,000 Variegated and other Ivies
- 2,000 Marechal Niel, Gloire de Dijon, 8 to 10 ft.; Nicheos, L'Idéal, and other Tea-scented and Noisette Roses in great variety
- 6,000 Bouvardias, including a lot of "President Cleveland"
- 5,000 Solanums, beautifully berried
- 1,000 Ivy-leaved Geraniums, best double kinds
- 1,000 Early flowering and other Chrysanthemums, fine strong stuff
- 500 Grevillea robusta

And a great number of Erica ventricosa, Cavendishii, caffra, large-flowering white Jasmines, Stephanotis floribunda, Boronia megastigma, Escalloa macrantha, Japanese Honeyuckles, Canothus, Aralia Sieboldii, Abutilons, Plumbligos, Lapageria alba, Bignonias, Magnolias, of sorts; Figs, strong, in variety; India-rubber plants, Palms, Ferns, Ficus elastica variegata, and other plants. Also a large quantity of young Heaths and Genistas, for potting on.

The whole of the Stock is in the best condition, and ready for immediate sale. Hoe Street Station, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Acton, W.

IN BANKRUPTCY re JOHN REEVES.

ABSOLUTE CLEARANCE SALE, without the slightest Reserve. By order of the Trustee

IMPORTANT TO THE TRADE.—PRELIMINARY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Acton, W., on MONDAY, Sept. 21, and following days, the whole of the extensive STOCK, including 100,000 FERNS, 4000 EUCHARIS (large plants), a great stock of ASPARAGUS TENUSISSIMUS and PLUMOSUS, the entire stock of the new Single Pink PELARGONIUM, ETHEL; 3000 MISS JOLIFFE CARNATIONS, the finest in the Trade; 8000 (alto in store pots); 300 Specimen Fielder's White AZALEAS, 1000 POINSETTIAS, 5000 CYPERUS, 10,000 Golden and Green KUONYMUS, 800 White PLEONITES, 3000 Irish IVIES in pots, the Erections of 30 GREENHOUSES, thousands of feet of HOT-WATER PIPING, &c.

Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Southgate.

By order of Mr. W. Davies.—Preliminary notice.

About a mile from Oakleigh Park Station, G. N. Railway. IMPORTANT TO FRUIT and PLANT GROWERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, September 25, at 2 o'clock, in one lot, a compact and valuable Freehold Market Nursery, known as the Oak House Nursery, Enfield Road, Southgate, comprising an area of nearly 2 Acres, with brick-built Dwelling-house, 9 Greenhouses and Vineries, 14 brick Pits, Stabling, and suitable Buildings.

The Property possesses a commanding Frontage to the High Road, which can be utilised for Building. Possession will be given on completion of the purchase.

May be viewed. Particulars had on the Premises; at the Mart, E.C.; of W. F. WATSON, Esq., Solicitor, 43, Southampton Buildings, Chancery Lane, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, E.C.

The Collection of Established Orchids formed by the late H. J. Buchan, Esq., of Wilton House, Southampton. By order of the executors.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL the above by AUCTION, at their Rooms, on FRIDAY, September 25

Sunningdale.—Preliminary Notice.

WITHOUT RESERVE.—SIX DAYS ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. Charles Noble.

MESSRS. PROTHEROE AND MORRIS beg to give notice that this ANNUAL SALE is fixed for MONDAY, October 5, and five following days.

Further particulars will appear in future advertisements. The Stock may now be viewed, and catalogues had, when ready, on the Premises, and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

Bagshot. HIGHLY IMPORTANT THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, which has been carefully prepared for removal, and specially selected for this Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, on WEDNESDAY, September 30, 1891, and two following days, without reserve, several acres of NURSERY STOCK, grown to the highest perfection, and exceedingly well-rooted.

There will be included very fine specimens of Gold and Silver variegated HOLLIES; 2000 named RHODODENDRONS, best and newest kinds; a large quantity of splendid specimen CONIFERÆ, particularly adapted for effective planting; and other STOCK, fuller particulars of which will be duly advertised.

Purchasers will be allowed until December 31, 1891, for the removal of their lots.

May now be viewed. Catalogues obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

CREAT SALES OF NURSERY STOCK.

Preliminary Notice of Forthcoming Auctions.

IMPORTANT TO THOSE LARGELY ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions to conduct the following EXTENSIVE SALES of NURSERY STOCK—

SEPTEMBER 30, OCTOBER 1, 2.—At the celebrated BAGSHOT NURSERIES, BAGSHOT, by order of Messrs. John Waterer & Sons (Limited). Three days.

OCTOBER 1.—At the NURSERIES, CHILWELL, NOTTS, by order of Messrs. J. R. Pearson & Sons. One day.

OCTOBER 5 to 10.—At the SUNNINGDALE NURSERIES, SUNNINGDALE, BERKS, by order of Mr. Charles Noble. Six days.

OCTOBER 8.—At the WOOD LANE NURSERY, ISLEWORTH, by order of Messrs. C. Lee & Son. One day.

OCTOBER 12 to 17.—At the WOKING NURSERIES, WOKING, SURREY, by order of the Trustees of the late Mr. George Jackman. Six days.

OCTOBER 13.—At the COLE HILL NURSERY, MÜNSTER LANE, FULHAM, by order of Mr. M. M. Smith. One day.

OCTOBER 15.—At the NURSERY, FELTHAM, MIDDLESEX, by order of Messrs. C. Lee & Son. One day.

OCTOBER 19 to 22.—At the WINDLESHAM NURSERIES, BAGSHOT, SURREY, by order of Mr. R. Mason. Four days.

OCTOBER 19 to 22.—At CUNNINGHAM'S OAK VALE NURSERY, OLD SWAN, LIVERPOOL, by order of the Executors of the late Mr. George Cunningham. Four days.

OCTOBER 21.—At the CASTLE BAR NURSERY, EALING, by order of Messrs. Hart Bros. One day.

OCTOBER 26 and 27.—At the NURSERIES, WIMBLEDON, by order of Messrs. D. S. Thomson & Sons. Two days.

NOVEMBER 3.—At the HALE FARM NURSERIES, TOTENHAM, by order of Mr. T. S. Ware. One day.

NOVEMBER 5.—At the NURSERY, PECKY HILL CLIFFE, ROCHESTER, by order of Mr. W. Horne. One day.

NOVEMBER 25 and 26.—At the SEA-VIEW NURSERIES, HAVALT, by order of Messrs. Ewing & Co. Two days.

DATES NOT YET FIXED.

At the GOLDSMITH'S PARK FARM NURSERIES, GROOMBRIDGE, TUNBRIDGE WELLS, by order of Mr. E. Holliday. Two days.

At the MILE ASH NURSERIES, DERBY, One day.

At the NURSERY, WANSTEAD, E., by order of Mr. T. East. Other Sales and planting arrangements, and the dates will be notified in future announcements.

The Auctioneers desire to call the special attention of those about planting largely during the season to these important Sales. They are now revising their permanent Lists, and will be pleased to add the names of those who may wish to have Catalogues forwarded of all the above, or any particular Auction.

Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

Monday and Wednesday next.

EXTENSIVE CONSIGNMENTS of BULBS from HOLLAND, LILYUMS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY and WEDNESDAY NEXT, August 31 and September 2, at half-past 12 o'clock precisely each day, extensive consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, IRIS, COLCHICUMS, Double and Single SNOWDROPS, &c., just received from well-known Farms in Holland, and specially lotted to suit the Trade and other Buyers. EARLY WHITE ROMAN HYACINTHS, LILYUM HARRISH, grand roots. Also Home grown LILYUM GLADIOLI (The Bride), PAPER WHITE NARCISSUS, &c.

On view mornings of Sale, and Catalogues had.

Wednesday and Thursday Next.

PENDELL COURT, BLEFCHINGLY, SURREY.

MR. J. C. STEVENS will SELL by AUCTION on the premises, as above, on WEDNESDAY NEXT, September 2 and following day, at 1 o'clock precisely each day, by order of the executors of the late Sir George Macleay, the COLLECTION of ORCHIDS, comprising most of the well-known kinds; Specimen PALMS, TREE and other FERNS, AQUATIC PLANTS, ORNAMENTAL STOVE, and GREENHOUSE PLANTS, LILIES, SUCCULENTS, EUCARIS, &c.

On view the day prior, and mornings of Sale; and catalogues had on the Premises, and of the Auctioneer's Offices and Rooms, 38, King Street, Covent Garden, W.C.

Beechfield, Doncaster.

To COLLECTORS of ORCHIDS, NURSERYMEN, and OTHERS.

MESSRS. HEPPER AND SONS are favoured with instructions from Richard Morris, Esq., J.P., who is leaving Beechfield, to SELL by AUCTION, on the Premises, on MONDAY, TUESDAY, and WEDNESDAY, September 14, 15, and 16, commencing at 12 o'clock each day, the Magnificent COLLECTION of ORCHIDS and STOVE and GREENHOUSE PLANTS,

Which comprises:—

IN ORCHIDS.—Phalenopsis Ludemanniana, Amabilis, Schilleriana, Sanderiana, and Grandiflora; Cymbidium charynnum, a very fine specimen with eight flowering growths and five new growths; Cymbidium Lowianum, Cattleya Mendocino delecta F. C. C. from the R. H. S.; Cattleya Elfordo (Wallisii), Gigas, Imperialis, Sanderiana, Aurea, Mossia, Triang. Schilleriana, Amythystoglossa; Angraecum Sesquipedale and Sanderiana; Aerides Fiedlingii, Alline, and Sanderiana; six dozen of Odontoglossum crispum, and 2 dozen of Pectocera, all selected, when in flower, as being of the best types, and now in vigorous health; Odontoglossum triumphans, Grande, Harryanum, Caribosum, Coronarium, &c.; Cypripedium Grande, Elliottianum, Argus, Hirsutissimum, Spatiopetalum, usque, and Barbatum; Cologium cristata; Pseudobombardiana, Thyrsiflorum, Crassinode, Aurea, &c.; Lycaste Skinneri; Oncidium; Masdevallia; Maxillaria; Miltonia, Vanda suavis, and Tricolor, &c.

IN STOVE and GREENHOUSE PLANTS.—Nepenthes, Curtisii Superb, Dicksouiana, Hookeriana, Morganæ, Mastersiana, and Rafflesiana; Anthurium Andreana sanguinea, A. Thellusonii, Madame Ed. Pynaert (best white), S. herzianum Wardi and S. Maxima; Anthurium Crystallinum, 5 feet diameter, in robust health; Alcaecia Lowii, Sanderiana and Metallica; Panacratium Speciosissimum and Fragrans (the foregoing are all large specimen plants and in splendid condition); four magnificent Lipogonias, Alba and Rubrum, each showing hundreds of flowers; Tillandsia Lindenii, Meadenia Magifica, Phyllotomum, Carlodivium Palmata, Chivas in good varieties; twenty six common greenhouse Rhododendrons, from 2 feet to 4 feet in diameter, in all the leading kinds; a very fine lot of Crotons, Caladiums, and Dracenas, Asparagus Plumosus, and A. deflectus; Palms; Tree and other Ferns; Camellias and Azaleas of the best sorts; a grand assortment of Amaryllis; Lilium; Gloxinias from the best strains; New Holland plants; upwards of 600 Chrysanthemums, best named varieties, and many other plants which cannot be enumerated in the space available in an advertisement.

Catalogues (1s. each), which will be ready ten days before the Sale, may be had of the Auctioneers, East Parade, Leeds, and holders thereof only will be admitted to view the collection on WEDNESDAY and THURSDAY, September 9 and 10, from 10 to 4 o'clock.

N.B.—Mr. MORRIS' valuable collection of Pictures, English and Foreign, and the extensive assortment of rare Bronzes, China, Ivories, Cabinets, &c., collected by him on a tour in the East, as well as the excellent appointments of the residence, and the Horses, Carriages, Cow, and outdoor effects, will be sold on WEDNESDAY, THURSDAY, and FRIDAY, September 16, 17, and 18, and on MONDAY, TUESDAY, and WEDNESDAY, September 21, 22, and 23.

The Pictures and other art property may be inspected on SEPTEMBER 9 and 10, on presentation of address card, and Catalogues (1s. each) may be had. The public view of the whole of the contents of Beechfield will be SEPTEMBER 11 and 15.

WANTED TO RENT, a SMALL NURSERY, with DWELLING HOUSE, all in good repair. Apply to W. BRUNSWICK, Church Passage Nursery, Lee, Kent.

FOR SALE.—Old-established Leasehold FLORIST'S and JOBBING BUSINESS; main thoroughfare, North London; doing a good all-round trade. Eight-roomed Dwelling-house and Stable, four span-roofed Houses, well-heated and stocked. Satisfactory reason for disposal. Price moderate. Apply—G. L. WEBBS, News Agent, Grove Road, Holloway, N.

FOR SALE, the twelve years' LEASE of a NURSERY (2 acres), seven Greenhouses, all heated. Within 10 miles of Covent Garden, and close to two stations. Apply, F. H., 5, Gladstone Villas, Fairfield Road, Edlington, Middlesex.

NURSERY for DISPOSAL.—Open to fair offer. Cottage, four Greenhouses, &c.—Tenant's property, half an acre of Land. Nine years' Lease, Ground-Rent 4/5. E. CORRING, Effra Nursery, near Gipsy Road, West Norwood.

FOR IMMEDIATE DISPOSAL, six miles from Bristol Market, one mile from a Railway Station, an EXCELLENT MARKET GARDEN, about 7 acres in extent, comprising Dwelling house, three New Greenhouses, 91 feet long; one useful Pit, 32 feet long; and a number of Frames, well-stocked with Flowering Plants, Ferns, Tomatoes, Cucumbers, &c.; 3 acres Fruit Trees, Strawberries, Vegetables, &c.; 4 acres Grass Land (which could be broken up). Lease, 7, 14, or 21 years. Price of Lease, Greenhouses, Stock, &c., £500, payable by easy instalments, if desired. This is a capital opportunity for anyone desirous of commencing business. Apply, THE MANAGER, 32, Nicholas Street, Bristol.

TO LET, on Lease, or otherwise, a SMALL NURSERY, in good neighbourhood, 10 miles from London. South-Eastern Loop Line. Apply, C. B., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

TO FLORIST'S or NURSERYMEN.—Large BUSINESS PREMISES of about 2 Acres, comprising 8 Large Greenhouses, and all the necessary appliances. Hot-water arrangements perfect, and every convenience for a sound business. Highgate neighbourhood. With or without cottage.—Apply to J. M., 25, Hornsey Rise Gardens, Crouch End, N.

EXHIBITIONS.

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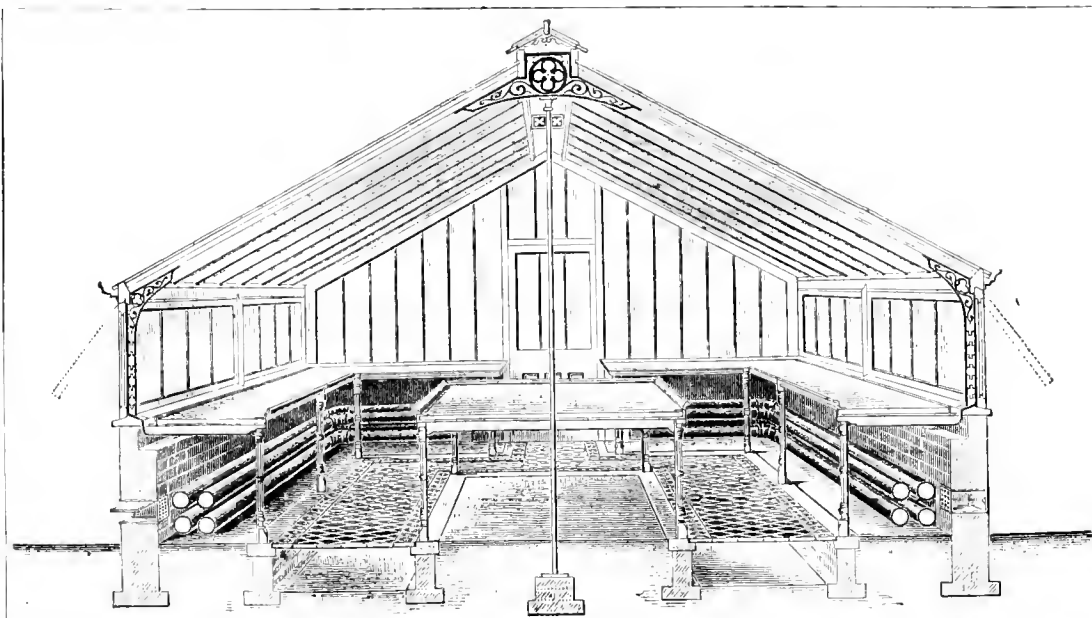
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 29, 1891.

WOOLPITS.

ONE of the most charming walks in Surrey is to start at Gomshall, from the range of hills striking east and west between Dorking and Guildford, and going almost due south through Peaslake. Passing over the next line of hills to Ewhurst and Cranleigh, at a point just west of Holmbury Hill, we come close to the site of Sir Henry Doulton's new house, Woolpits, which is now complete, and possesses interest for both architects and the public as the work of Messrs. Ernest George & Peto, and as the residence of a great director of English industry.

The road passes by the half-timbered entrance lodge, which has a beautiful outlook to the south-west, from which the carriage-drive winds up to the site of the mansion, which is on a piece of level ground on the hillside. The view from the windows, looking down the valley and over the long stretch of level country to the South Downs, is beautiful. On the right, the view is bounded by the steep ascent of a fir-covered hill, on the side of which Woolpits is built; and, on the left, rises Holmbury Hill, also well wooded. On the further side of the road, and rising partly up the hill of Holmbury, are extensive ornamental grounds and a lake.

The lake is connected with the grounds by two walks, one leaving the house at its south-eastern corner, crossing the park and the public road by a steep descent, with sets of wooden steps; the other passing from the main entrance through a wooded hollow, on the opposite side of the road, to a different side of the lake. After skirting the water, and crossing over two rustic bridges, a branch walk descends the embankment at the lower end, and leads into the road, which gives access to Woolpits Wood. This sheet of water has been formed in a valley within sight of the house.

The enclosure has been planted with masses of Rhododendrons and other shrubs, whose flowers and forms are reflected pleasingly in the water. A shelter or summer-house, with a beautiful prospect over the lake and park, with its masses of old trees, has been constructed over the boathouse, and is itself decidedly picturesque. The beautiful situation of Woolpits can be fully appreciated from this side. The two best views of the house are one from the carriage-drive.

north-east, and one from the side of the hill to the south-west. A branch road from the carriage-drive to the right leads to the stables and coachman's cottage, supported by a bold mass of old Oaks. This is the nucleus of a plantation, which extends thence along the northern boundary, and completes the needful shelter and enclosure. A continuation of the stable road conducts to the back of the kitchen garden, which is walled on three sides, and fenced by a Holly hedge on the south. It abuts closely to the stables, being shut off from the carriage-drive by a sufficient breadth of shrubbery. A favourable position for Roses occurs in a border to the south of the garden; and the walks on entering the kitchen garden at both ends are spanned by Rose arches.

The spot where the kitchen garden stands is a fairly level one, being almost the only bit of flat ground on the property. There is a range of glasshouses against the north wall, with garden sheds in the rear; and supplementary forcing-houses and pits further behind. At the time of writing, November 20, there were two houses—which are used for Cucumbers, Melons, and Tomatos in the summer—filled with a fine collection of winter-flowering zonal Pelargoniums, one blaze of colour of very fine trusses of flowers.

By permission of Sir Henry, the houses and grounds are occasionally thrown open to the people of the neighbourhood. The houses are in autumn very gay with Chrysanthemums, &c. A quantity are grown in 32 and 48-pots, for house and table decoration from 1 to 2 feet in height, and prove to be most useful where exhibition blooms are not required.

Besides the somewhat uncommon gathering of herbaceous plants, there is a fine collection of trees and shrubs, comprising nearly everything that is really worthy of cultivation that will stand the climate in the grounds, Rhododendrons, Hollies in great variety, ornamental Thorns, elegant flowers, graceful forms, and striking foliage being freely intermingled. Roses and other climbers grow on the walls of the mansion, cottages, and buildings.

The southern part of Woolpits Wood, sloping to the west, and looking out into a charming country, has been planted with a collection of Conifers, with clusters of Birch and other deciduous trees, the standard trees being chiefly Oaks. From this part of the Woolpits estate, and looking east, we see the well known Leith Hill, about four miles away, said to be the only eminence from which St. Paul's Cathedral and the sea are both visible. A noted landmark on the Downs is the Chanclebury, or Chanctonbury, ring which was set out by Mr. Charles Goring of Wiston, in 1760. He lived to record in verse the success of his plantation in 1828. To the left is Shoreham Gap, through which, under favourable atmospheric conditions, the sea is discernible. By passing round the ends of the two half-encircling hills, an expanse of country with other hills in the west becomes immediately visible, while there is really no limit to the many happy aspects which travelling a few yards in almost any direction may not develop.

The house (see fig. 30, p. 245), built of red brick and cream-coloured terra-cotta facings, is all the more picturesque, because, although on high ground, it is backed up by higher hills and woods from every leading point of view, and this takes away much of its appearance of newness.

The grounds were laid out by the late Edward Kemp, of Birkenhead. Although he had then retired from the active pursuit of his profession, it was as a mark of personal regard and friendship that Mr. Kemp in 1854 undertook to lay out

and develop the beautiful estate of Woolpits, in Surrey.

In 1886, Sir Henry Doulton secured the services of Mr. H. W. Perrin to take charge of the gardens and grounds generally.

ORCHID NOTES AND GLEANINGS.

CATASETUM CILIATUM.

This elegant little *Catasetum* has just flowered, probably for the first time in Europe, in the collection of M. Robinow, Esq., Hawthornden, Palatine Road, Didsbury. It has recently been imported from the Amazon district. The species was described by Rodriguez (*Gen. et Sp. Orch. Nov.*, i, p. 130), with which description I have succeeded in identifying it. It belongs to the section Pseudo-Catasetum, but is very distinct from *C. roseo-album*, its nearest ally. The sepals and petals are greenish-white, the former reflexed, the latter erect and larger. The lip is triangular, acute, and concave; whitish, tipped with deep maroon-purple, with purple bristle-like hairs half an inch long on the sides near the base, and with light purple transverse lines on its basal half. The pedicels and short column are purplish, the latter without antennæ, as in this section. The flowers, which are just over an inch across, are remarkably like some peculiar bees on the wing. According to Rodriguez, it is a native of Parí, and grows on the Palm, *Mauritia armata*.

ODONTOGLOSSUM WATTIANUM.

This handsome *Odontoglossum* has already improved on becoming established, as an eight-flowered raceme has been received through Messrs. Veitch, of Chelsea, with flowers fully $3\frac{1}{4}$ inches across their broadest diameter. The sepals and petals are yellow, the former with large, the latter with smaller chocolate blotches. The lip is lemon-yellow, with a large purple blotch in front of the nearly white crest, and numerous similar spots on the stalk and basal half of the subpandurate limb. The column and stalk of the lip are each 8 lines long, and form an angle of 45° with each other. It is wonderfully distinct; indeed, its exact affinity is still doubtful, and probably is the finest species which has appeared since the advent of *O. Harryanum*.

DENDROBIUM STREBLOCEAS VAR. ROSSIANA.

A variety of this remarkable *Dendrobium*, in which the lip is wholly white, appeared soon after the introduction of the typical form, and received the above name from Professor Reichenbach. It has considerably improved on becoming established, for Madame E. Gibez, Sens, Yonne, France, now sends a raceme bearing seven of its remarkable flowers. The under-part of the undulate sepals is green, as are also the spirally-twisted petals. These latter are very curious. They are erect, quite parallel, $2\frac{1}{2}$ inches long, and have precisely the appearance of a pair of twisted horns, as the name implies. The species is closely allied to *D. stratiotes*, and equally attractive. The flowers remain several weeks in perfection.

SORRALIA LOWII.

This species closely resembles a dwarf form of *S. sessilis*, Lindl., except that the flowers are of a uniform bright purple, or rose-purple shade. What appears to be the same thing has just been received through Messrs. James Veitch & Sons, of Chelsea, though it is even dwarfer than before, flowering on a stem under 10 inches high. The fugitive flowers of this genus often coupled with a rather tall habit, has, to some extent, affected their popularity as garden plants, though travellers are unanimous in praising their charms as seen in a wild state. The present species is sufficiently dwarf, brightly-coloured, and floriferous to be worthy of attention. At present few plants are known.

CATASETUM NASO ♀.

On two or three occasions a plant of *Catasetum Naso* at Kew has produced a raceme of its singular

male flowers, whose general appearance may be readily seen by a glance at t. 4792 of the *Botanical Magazine*. This year it varies its proceedings in a very interesting way, by the production of a female raceme. Perhaps it is only called a raceme by courtesy, for the single flower now expanded has absorbed all the nutriment, leaving a number of bracts and abortive buds above it. It is, however, a case of the greatest interest. The flower is about as large as in the other sex, light green, the sepals and petals three-quarters of an inch broad, and the lip an inch in diameter, with a narrow purple margin, and a few teeth. This organ is superior, as in every other known case; and, of course, the column is very short, without antennæ, and, like the ovary, very stout. One such flower appeared at Syon House, when the above-cited plate was prepared, and is represented by Mr. Fitch in the original drawing, but omitted in the published plate. The omission is significant. In fact, the drawing was sent to Lindley, who labelled the plant "*Catasetum naso*," but the detached female flower "*Monachanthus viridis*." Probably this circumstance explains Sir William Hooker's suspicion that it might be a sport of *Catasetum tridentatum*, for in those days only this vague term could be applied to the curious phenomena occasionally observed in the genus. *R. A. Rolfe*.

MORMODES ROLFEANA, L. Linden.

Sepals and petals light brown on a light green ground, and with darker green stripes. The face of the very fleshy rigid lip is brownish crimson, also the back of the column, the front of this organ and the back of the lip being greenish yellow. The species require the same treatment as the *Catasetums*. A sunny situation suits them best; nevertheless, they should be shaded when the sun is too hot. After flowering, all the species lose their leaves, when the amount of water given should be considerably reduced for a period of several weeks, while the plants are in a state of semi-repose. When the new growth appears, the amount of water should be gradually increased, in order to restore the plant to full activity. *Lindenia*, t. 289.

LILIA GRANDIS, VAR. TENEBROSA.

Sepals and petals, dull copper-coloured; lip, purple; disc, black-purple; edge, white. *Lindenia*, t. 290.

DENDROBIUM LEUCLOPHOTUM.

A north Queensland species, with elongated pseudo-bulbs; flowers, white, in many-flowered racemes; sepals, ligulate; petals, oblong acute; lip, trifid. *Lindenia*, t. 291.

CATLEYA BICOLOR.

An autumn-flowering species. Segments, clear brown; lip, amethyst-violet. *Lindenia*, t. 292.

LILIA FLAVA.

Flowers, yellow; segments, linear narrow; lip, convolute; anterior lobe, flat-fringed. *Orchidophile*, *Junc.*

CHISWICK NOTES.

THE representatives of the Ware and District Horticultural and Mutual Improvement Society visited the Chiswick gardens of the Royal Horticultural Society on Wednesday in last week, and derived much pleasure from the visit. The old garden was looking well, and this gardening contingent doubtless derived information as well as pleasure in their round of the garden, looking at the various trials, &c., that are now in operation, both in the vegetable and floral way.

In the former the Runner and Dwarf French Beans, Onions, Turnips, Tomatos, &c., furnished much interest. In the floral way, may specially be noted the masses of Carnations then in flower, Sweet Peas, Violas, and Pansies, showing the wealth of material at hand for the outdoor embellishment of our gardens. Perennial Asters and Sunflowers, whose nomenclature will probably cause burning questions to arise, deserve a passing note. The house of those useful decorative plants (Fuchsias) would be the

means of note-books being called into requisition, to jot down the names of the striking sorts; and to admirers of zonal Pelargoniums for house decoration, the claims of these plants would not be overlooked.

In the fruit department, attention was arrested (outdoors) by the crops of Apples, Pears, Plums, &c., which are fairly good; whilst indoors, the big conservatory promises a good supply of Grapes, as usual; and the long vinery looks well with its fine bunches of Gros Colmar, Alicante, &c., which will be seen to greater perfection as the season advances.

The fruit-evaporator in operation furnished an excellent item in the day's programme; the machine for paring Apples evoked interest. Altogether, associations of gardeners might do much worse than include Chiswick in the programme of their annual horticultural outings.

The serious storms have recently played some mischief with the Carnations, a few of the best of which may be noted amongst the following varieties:—In the whites, good, were Snowdrift, White Queen, Penelope, and Mrs. Frank Watts; Comtesse de Paris is a very free-blooming pale blush; Maggie Laurie is a beautiful delicate blush. Scarlets furnish bright and pleasing patches of colour, the more noteworthy sorts being Rowena, bright scarlet; Guiding Star, good strong habit of growth; The Moor, a fine dark crimson; Feuerball, deep scarlet; Dan Godfrey, scarlet flake; Albrecht Duesser, deep rose, crimson flake; Edith, pale pink, spotted scarlet. The now well-known Mrs. Reynolds Hole, terracotta, was seen in capital condition. Amongst the yellows—obviously a showy and useful class—may be mentioned Will Threlfall, bright yellow; Germania, the latter perhaps more suited to pot culture; Canary, pale yellow; Theodor claims attention on account of its peculiar colour, which may cause it to be valued by some, this being a dull slate. Noticeable amongst the Picotees were Redbraes, Romeo, Favourite, Mr. Rudd, and Mary.

Eckford's Sweet Peas form quite an attractive feature. Of fine quality are the following:—Captain of the Blues, the standards bright purple-blue, with pale blue wings—a very striking and fine variety; Queen of England, white, of large size and good substance; Mrs. Gladstone, delicate pink standards, the wings blush, edged with delicate pink—a singularly pretty and pleasing variety; Senator, a large bold flower, finely expanded, standards shaded and striped chocolate on creamy ground—a charming variety; Princess of Wales, a beautiful variety, shaded and striped mauve on a white ground; Isa Eckford, creamy-white suffused with rosy-pink.

A house of well-grown and flowered Fuchsias, before referred to, deserves a few additional notes. There is nothing startling in the way of novelties to record; we seem to have almost reached perfection in this particular flower. The old Rose of Castile is still a favourite flower, and is here well represented. First of the Day is a good single; Red Spitfire is a showy variety, having bright scarlet sepals, corolla well-formed, and of deep magenta; Phenomenal is a very fine double with scarlet tube and sepals, a dark purple and blue corolla. Another good double is Alophe Legour, sepals large and well reflexed, corolla violet rose.

Amongst the yellows may be mentioned Aurora superba, tube and sepals rich salmon, corolla large, spreading, orange scarlet suffused with yellow, fine free habit of growth, a distinct variety. Earl of Beaconsfield, one of the best for decorative purposes; the flowers are produced in large clusters, and constant bloomer. Mr. Randell, somewhat similar to the preceding, for general decorative purposes a capital variety. Winifred Glass has a blush tube and sepals, rich carmine corolla, shaded magenta; small, but very free. Flocon de Neige, white corolla, large, and well formed, sepals, clear carmine. Mrs. Mein, tube and sepals bright crimson scarlet; a well-reflexed flower, and of good shape.

In the Fancy section, worthy of note is Erecta var. Novelty, novel and distinct, tube and sepals stained white, sepals broad, corolla light pink, margin rose, free; a plant of strong habit, the flowers erect, and thrown well above the foliage.

EARLY FRUITS, &c.

The young trees are bearing fairly well this season. A small but excellent sort, of fine aromatic flavour, is Irish Peach (sometimes known as Early Crofton). Some of the pomological authorities recommend the tree to be lightly pruned, as it bears at the points of the shoots. A very handsome dessert Apple, but a somewhat "shy" bearer, may be noted in Red Astrachan; whilst "good cropper" must be applied to that excellent culinary sort, Lord Suffield.

A very small Pear, but useful on account of its being the earliest, is Doyenné d'Été, of refreshing flavour, and withal, of very pretty appearance.

Two decidedly good early Plums are the following:—River's Early Prolific, a valuable market sort. It is good for dessert, and also possesses the merit of being one of the best flavoured when cooked. St. Etienne, brought into notice by receiving Certificate honours at the meeting of the Fruit Committee on August 11, is an excellent cooking yellow variety of small size.

Among Tomatos Perfection is, of course, good; and Chemin, of recent introduction, may be noted as one of the best and distinct sorts, its fruits being large, smooth, red.

SALVIA PATENS.

A large bed of this is very conspicuous just now, being indeed a sheet of its very large intense blue flowers. A mass such as this has a striking effect in a border.

HELIANTHUS DORONICOIDES.

This is a good border species, a good-sized bed bere of its fine large yellow flowers presenting quite a glare of colour.

POLYGONUM SACHALINENSE.

This is a grand plant of immense size. A happy spot for it is on a moist herbaceous border, or fringing some water.

BACONIA CORDATA.

This is a bold and handsome hardy foliage plant, suitable for planting in the wild garden, or in isolated positions on the lawn, where its ornamental foliage is seen to advantage; it bears a spike of creamy-white flowers.

OLEARIA HAASTII.

A large bush of this good shrub has been very noticeable, crowded with a profusion of its sweetly-scented star-like flowers.

LYLES.

To lovers of these (and they are many), the interesting, and comprehensive collection at Chiswick will present many and various features of interest, as the various character of the plants develop some delightful bits of colour—green, gold, and silver.

Lastly it is satisfactory to find, that owing to the improved financial condition of the society, something is being done to reinstate the houses and frames which were allowed perforce to get into a sad state of dilapidation during the Kensington régime.

PLANTS IN FLOWER AT MESSRS. JAS. VEITCH AND SONS.

In addition to a good show of the ordinary Orchids which flower at this season, there are many very rare and beautiful species and varieties in bloom at the Royal Exotic Nurseries, Chelsea. Among them should be noted a plant of *Laelia Amesiana* (*L. crispata* × *Cattleya maxima*), and which even surpasses the favourite *Laelia xoniensis* in beauty. The plant in question is a noble one, with five leading growths and several flowers. The new *Laelio-Cattleya Proserpine* × (*L. Dayana* × *Cattleya velutina*) is in bloom, and proves to be a neat-growing plant and a profuse bloomer; the whole flower is of a delicate shade of lilac, closely veined all over with crimson in a manner not seen in any other Orchid. Among the *Cypripediums*, the new *C. macrochilum* × (*C. longifolium* seed-bearer × *C. Lindenii*) has a four-flowered scape of blooms, resembling in colour those of *C. caudatum* Wallisii, but with a curiously large and elongated pouch, which

is beautifully spotted inside. The rare *C. Aylingii* (*niveum* × *ciliolare*), too, is in bloom; also the handsome *C. Youngianum* ×, of which the variety raised by Messrs. Veitch is a specially fine one, rivalling in beauty the favourite *C. Morganæ* ×; *C. tonsum superbum* also exhibits its large and curious flowers; and *C. Canhamianum* ×, *C. orphanum* ×, *C. Tautzianum* ×, and other rare kinds, are in bloom.

Among other noteworthy plants here in flower are several examples of *Saccolabium Hendersonianum*, and specially good, *S. celeste*, *Renanthera matutina*, *Ceolozyne Cumingi*, *Dendrobium rhodostoma* ×, *Sobralia xantholeuca*, a large *Peristeria elata*, and *Laelia crispata*, with fifteen spikes, bearing together 105 flowers. There are, too, some excellent varieties of *Cattleya velutina*; and among the *C. gigas*, one approaching to *C. Hardyana*, and with a peculiarly pretty yellow marking at the sides of the labellum.

A noble bank of Lilies, chiefly made up of the newer forms of *Lilium auratum*, exhibits them at their best. The showiest are the specimens of *L. auratum rubro-vittatum*, with a broad crimson band down the middle of each petal. *L. a. virginale* is a very fine pure white. Two of the best in habit, and in size and form of their flowers, are *L. auratum macranthum*, a noble variety, with large pure white flowers with the middle of each petal rich yellow, but without chocolate spots; and *L. a. platyphyllum*, which resembles *L. a. macranthum*, but has reddish-brown spots along the middle of the segments.

EXPERIMENTS WITH ASPARAGUS.

In a recent *Bulletin* from the Ohio Agricultural Station, Professor W. J. Green reports an experiment on "Seed-bearing and Non-Seed-bearing Asparagus." The male and female flowers of the Asparagus are borne on separate plants; hence, as is well known, all the plants do not produce seeds.

Seed-bearing is an exhausting process, and, as might be supposed, those plants that yield seeds have less vigour than those that do not. In order to determine the difference in vigour between the seed-bearing and non-seed-bearing plants, fifty of each were staked off in a plantation of about half an acre. When the cuttings were made, the shoots taken from male and female plants were kept separate, and the weight of each recorded.

Observations upon the two kinds of plants were extended through the seasons of 1889 and 1890, and cuttings were made in the ordinary manner. The results are as follow:—

Asparagus, products from Male and Female Plants.

	From fifty male plants.	From fifty female plants.
	Ounces.	Ounces.
First period, ten days	37	21
Second period, ten days	101	68
Third period, ten days	255	164
Fourth period, ten days—	213	154
Total for the season	610	407

The total average gain of the male plants over the female was a little more than 33 per cent., while in the first period the gain was 43 per cent. The greatest difference between the two lots occurred during the first period, showing that male plants are earlier than the others. The shoots from the male plants were also larger than those from the female. Male plants can be secured by dividing old roots or by selecting such two-year old seedlings as do not bear seeds.

THE USE OF RUBBER BANDS IN BUNCHING ASPARAGUS.

India-rubber bands are found to be superior to string or netting, for bunching Asparagus, because they hold the stalks in place better, and they are also cheaper when the labour of putting them on is considered.

The method employed in bunching with rubber-bands is to slip a band over an ordinary tea-cup—one with straight sides and without a handle—fill the cup with Asparagus shoots, the heads downwards, then slip the band from the cup to the bunch. This makes a bunch of about the right size, and gives the upper end a nicely rounded appearance.

All that remains to be done is to slip on another band and to square the butts with a sharp knife. Possibly a metallic cup would answer better, being thinner, but a tea-cup is not objectionable in this particular. If smaller bunches are desired than the smallest cup that can be found, it is not necessary to fill the cup. Two thousand bands suitable for bunching will weigh about one pound. Two bands are used for a bunch. *J. J. Willis, Harpenden.*

FRUIT FARM NOTES.

Fruit farming and jam-making have been much advocated of late, but that the former is no new industry is evidenced by what is to be seen at Ramsey, near Harwich, on the eastern coast, where Mr. Ward has many acres of trees, most of which he planted over forty years ago; some of the Apples and Pears being of very large size, as they are not restricted, or subjected to much pruning. This will readily be understood when it is stated, that a single tree of the latter has, in a single season, yielded over a ton of fruit, the sort being Golden Knap (Drop), a Scotch variety; the Pears are small, and not of good quality, although they seem to sell in the market. Other kinds that are largely grown are Williams' Bon Chrétien, Conseiller de la Cour, and Madame Treyve. But strange to say, one of the greatest favourites, Louise Bonne, is hardly represented, as it is found to cauter so badly, that it is almost given up as a failure.

Of Apples, Mr. Ward has upwards of one hundred kinds, but he says that twenty would be better; those he thinks most highly of are Keswick Codlin, Lord Suffield, Duchess of Oldenburgh, Warner's King, Tower of Glamis, Cox's Orange Pippin, Blenheim, Alfriston, and Mère de Ménage.

Plums are grown in immense numbers, there being acres of them, in thickly planted rows, and all literally laden with fruit, some so much so as to have the branches quite borne down by their weight. It is plain, therefore, that the frost, so fatal in many parts, did not reach Ramsey; but then the land lies near the sea, directly between two tidal rivers, the Handford water and the Stour, the elevation being about 50 feet, but quite open and somewhat wind-swept, as there is little shelter near. The Plums most in favour are the following:—Early Orleans and Early Rivers, the first-mentioned being larger and a little earlier in ripening, therefore a very desirable kind; Victoria was, of course to be seen in quantity, as well as Prince of Wales and Jefferson. Mr. Ward thinks very highly of Autumn Compôte, and a sort the writer of this is unacquainted with, the fruit being large, oval, bright red, and hanging thickly on the trees.

Damsons, from some cause or other, have been neglected at Ramsey, as only a few old trees were to be seen; but two years ago Mr. Ward had 200 planted, the sort being the Farleigh, and they now are crowded with fruit, and look the picture of health. The ground under the trees is all occupied with Gooseberries, Currants, and Raspberries, the chief kinds among the first-mentioned being Golden Drop, Crown Bob, and Warrington.

Strawberries are all in the open, exposed to sun and air, the rows being about 2 feet 6 inches apart, and the plants in the lines half that distance, and strong and well they look, with finely-developed crowns, as they ought to have, from the treatment they receive, there being no denudation of foliage beyond that just outside the plants when the runners are cut away and removed, and the land cleared after the fruit is all gathered. When fresh plantations are made, the practice with Mr. Ward is to crop between the rows with Onions or Lettuce the first year. Sir Joseph Paxton and British Queen are the chief sorts

Mr. Ward cultivates, and both seem quite at home on the land.

Being so far away from any great city, I was curious to know where all the fruit on the place went to or could be disposed of, and in reply to the query, Mr. Ward said, "I hardly know, but it all goes—some to London, Tiptree, Walton, Dovercourt, Harwich, and other parts;" and he seemed to have no fear of foreign competition, for, said he, when I mentioned the subject, "where should we be without the foreigner, as up till now we have had nothing but soft fruit in the market?" A good deal of continental produce is landed at Parkstone close by.

Besides being a fruit cultivator, Mr. Ward is also a farmer and a market gardener in a large way, and has great breadths of Potatoes that look remarkably well, and at the time of my visit (August 14) there was not a diseased leaf to be seen. Ashleaf is the kind grown for early work, followed by Satisfaction and Magnum Bonum, the last-mentioned forming the bulk. The tubers lifted for me to see were remarkably clear and fine, and the crop heavy and good.

The Celery at Ramsey is grown in trenches, and three rows of Paris Cos Lettuces along the ridges between, thus turning all the land to account. Cucumbers are sown in the open ground, and were just coming into bearing, the bulk of produce being sent away in barrels to market. That Ramsey must be a favoured spot as regards climate is shown by the Broccoli standing last winter as well as other green-stuff, which was killed elsewhere, or so cut as not to be of much use. The soil is a good greasy loam, resting on the London clay, and therefore well adapted for the purpose to which it is put. *J. S.*

BOTTLING OF FRUITS.

Fruit can be had all the year round nearly equal to fresh-picked fruits. Those who possess a small garden, often waste small perishable fruits, of a tender nature, especially where the market towns are some considerable distance away, the prices sometimes very low, and the market glutted. To prevent this loss, bottling of small fruits will be of great advantage to the grower, as bottled fruits meet with great demand, in fact, they are much preferred to jams, possessing more the natural flavour of the fruit. To have fruit either for bottling or preserving, it must be manufactured on the ground. Bring the factory to the fruit—it saves carriage, and unnecessary packing and handling. Pick your fruits, such as Currants, Gooseberries, Plums, Apricots, Cherries, and all kinds of small fruits, straight into the bottles from the trees. The fruit should not be dead-ripe, but rather under ripe, as it keeps whole, and adds much to the appearance after cooking. Put as much fruit into bottles as possible, giving them a shake occasionally, so as to get them packed firmly together, taking care not to have them broken. After the bottles are well-filled with fruits, pour clean water into them until it runs over the rim; see particularly to this, as nothing looks worse than a bottle not being full. The corks should be of the best quality, free from holes; and fitting tightly. They will require some force to drive them down; place small pieces of tin on the top of the corks, about the size of a shilling, to keep the wire from cutting them. As a certain amount of expansion takes place in the cooking, and is apt to raise the cork, if not tightly secured, wire as you would an ordinary soda-water bottle.

Place the bottles in cold water into an ordinary fish-kettle or pan, upon the bottom of which a cloth has been placed to keep the bottles from touching the pan. The water must be poured in within 1 inch or so of the top of the bottles. The process must be slow at first with the fire, otherwise the bottles are apt to crack. Have your thermometer in the pan so as to be able to watch the rising of the temperature. Let it rise gently until 165° is attained, which must take one hour—thus the process is very slow. Let them cool gradually. Take a mixture of resin and a small quantity of oil boiled together, then dip the end of cork into the mixture while hot, which seals over any minute holes, making the bottle quite

air-tight, otherwise fungus spores will enter and develop. Place the bottles on their sides in any cool place. For home consumption the flavour is much better when no water is added; for trade purposes, adding water to them gives the bottles a better appearance. When no water is added the fruit shrinks, and consequently the bottle is not full. Their flavour, when prepared in this way, is equal to fresh-gathered fruit. When cooking for use never add sugar to them until served up, as sugar toughens the skins, especially of Plums and Cherries. *J. T.*

VEGETABLES.

SPINACH.

LAST winter again gave convincing proof of what a valuable vegetable this is, for when almost everything else in the kitchen garden was killed, Spinach seemed to bid defiance to the weather, and passed safely through. This immuoy from injury, no doubt, arose in some measure from its lowness of growth, and the friendly covering of snow that laid over it so long, thus protecting it from the hard frost, to which other vegetables were more exposed, and from the effects of which most of them perished, as we had no wind all through the season. To make sure of having a good supply through winter and spring, it is necessary to sow twice, as sometimes, if the autumn is warm and open, the first sowing runs or becomes too forward for the leaves to be of much use for picking. For spring use, the best situation for Spinach is a sheltered border facing south, although for first gatherings beds or rows on the open quarters do very well. Wind is often more fatal than frost, and on a warm sunny border Spinach grows away freely as soon as the days begin to lengthen, and affords many gatherings before much can be had from that in the open. For the first supply to pick during late autumn, the third week in August is the time to sow, while that for spring should be got in towards the end of September. In many gardens it is a very difficult matter to grow good Spinach, on account of wireworm in the land, and I used to experience much trouble from these, till I applied soot, which I can most strongly recommend; the way to use it is to sow just enough over the ground to blacken it, and then dig it in. If the land is poor, rotted manure should be used; for to get fine leaves, Spinach must be well fed, and then it is succulent and tender. The old prickly-seeded is far surpassed now by the Victoria, which produces larger leaves and of a much more fleshy substance, and should therefore be grown instead of the other, as besides the superior qualities it is quite as hardy and not so apt to run as the prickly. The Victoria is a stronger grower, and needs more room; the rows should be at least 18 inches apart, and the plants not nearer than half that distance, as then they will have space to develop. In preparing for sowing, it is important to have the land firm and the surface raked fine, and when brought to that condition the drills should be drawn, making them about 1½ inch deep, and sowing the seed very thin, which will save labour and time in pulling up plants. Not only is soot good for digging into the land, but it is also first-rate as an early spring dressing to scatter between the rows and hoe in before the Spinach has made much growth, and if that is done its beneficial effects will soon be apparent in the improved colour and the greater crop of fine leaves. *J. Sheppard.*

THE DELL, EGHAM.

THE beauties of Baron Schroder's gardens are well known to most gardeners and garden-lovers in Europe, and many in America doubtless call to mind with pleasure the sights they have seen there when visiting England. Year by year the liberality of the Baron, and the care and thoughtfulness of his gardener, Mr. H. Ballantine, add new beauties to

it, the last, the extensive rockeries, being one of the most attractive. In these a defective spot has been beautified, and in their construction Pulham has done his work well, artistically winding and sinking or raising the rockery as the situation required, and introducing pieces of water in several places with considerable effect. Beyond these circumstances, the rockery has been fortunate in being skilfully planted; the capping of these massive rocks, which cannot be carried up beyond a certain height, being especially well done.

It is needless to enumerate the beautiful alpinæ and herbaceous perennials in flower, suffice it to mention a few. In one of the pieces of water is a charming view, in which the flower is given by a huge mass of white *Iris Kämpferii*, another of *Menyanthes trifoliata*, the surface of the water being studded with the fine leaves and flowers of the Water Lilies, and in the foreground a large mass of *Sarracenia purpurea*. Beyond are large patches of the

THE ORCHIDS.

Turn we, then, to the Orchids in the extensive blocks of houses devoted to them, after the manner of visitors to The Dell generally. In them we find several important changes, evidently for the better, have taken place. For some subjects new houses have been erected, and for others a change of quarters has been given, which, in most cases, has had a salutary effect. The fine collection of specimen *Cattleyas* still inhabits the large structure built for them, and in which there are some fine blooms on the different forms of *C. gigas*, *C. Gaskelliana*, and *C. Mendeli*. Here, too, is a large specimen of *Sobralia Warscewiczii* in flower, also the handsome *Lælia callistoglossa*, the pretty *Dendrobium lineale*, and the fine crimson *Broughtonia sanguinea*, which is said to bloom from early spring onward.

In the Fernery, with its stately Tree Ferns, we find the specimen of *Sobralia xantholeuca*, so often noted, in flower; it is now some 8 feet across, and

we find a good show on specimens of *Anguloa Ruckeri*, *Zygopetalum Gautierii*, *Odontoglossum bictonense album*, *Oncidium panchrysum*, *O. hæmatochilum*, *Mormodes luxatum eburneum*, and some charming specimens of the lovely orange-scarlet *Lælia monophylla*, one of them with twelve flowers. This gem of an Orchid puzzled every one to grow until cool treatment was tried with it, and then it was found to be a very free plant and wonderfully floriferous.

In the East India House, which has the collection of *Phalaenopsis* on one side and growing *Dendrobæ* on the other, the noble *Aerides Sanderianum*, *A. nobile*, *A. affine*, *Vanda Roxburghii*, *Catasetum Bungeothii*, *Platyclinis filiformis*, with fifty spikes; the perennial flowering *Dendrobium rhodostoma* ×, with fourteen spikes; *D. crystallinum album*, *Celoglyne Massangeana*, some *Phalaenopsis*, and some grand specimens of *Utricularia montana* and *U. Endresii* are in flower, the last named literally

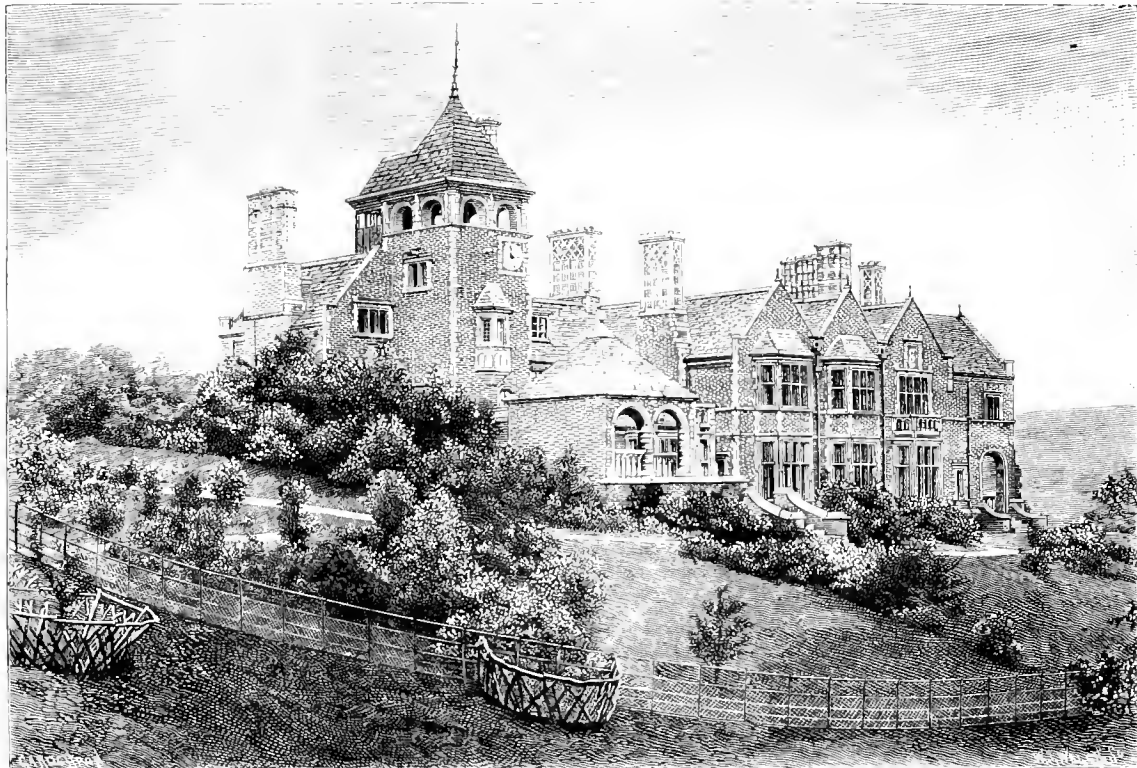


FIG. 32.—FOOLHITS: SIR HENRY DOULTON'S SEAT IN SURREY. (SEE P. 241.)

different Heaths, *Campanulas*, *Epimeliums*, and other dwarf plants, and among them the elegant spikes of Foxglove, the scarlet *Kniphofia*, *Mecynopsis Wallichii*, with 5 feet spikes of large pale blue flowers; large clumps of Ferns—the *Adiantum pedatum* being especially fine—and other things in beauty and size beyond what is generally met with. Here, too, are planted all the compact-growing *Coniferae*, such as Golden Yews, *Retinosporas*, *Thujas*, &c., and which it is intended to keep to the form required by the use of the knife after the manner carried out at the entrance-gate, and about the gardens generally, with so much success.

The magnificent *Araucarias*, *Sequoias*, Cedars, *Abies*, and other *Conifers* and shrubs with which these gardens are beautified, seem not to have suffered by the late severe winter, and the clumps of flowering perennials in various parts of the garden seem more than usually bright, their show being considerably enhanced by the brilliant display of summer flowers bedded out near the mansion, and in which the several beds of tuberous *Begonias* play an important part.

bears a profusion of its large pale yellow blooms. It commenced to flower in May, and it will be a fine sight for some time to come yet. In the first division of the next range of lean-to houses, the forms of *Masdevallia chimæra* are good. In the second, among well-grown *Odontoglossums*, in flower, were a fine tuft of *Promenæa xanthina*, a superb and large form of *Odontoglossum Wallisii*, and some fine forms of *Odontoglossum Harryaoum*. In the third division the most prominent objects are a specimen of *Maxillaria venusta*, with over fifty flowers; *Nanodes Medusa*, *Masdevallia Gaireana* ×, *M. racemosa*, *Epidendrum vitellinum*, *Cochlioda vulcanica*, sending up over thirty spikes, &c., and in this cool house the Filmy Ferns seem to thrive well.

In the next range the rare *Cypripedium Fairrieanum* and its hybrids are doing well, and some large masses of *Dendrobium longicornu* are in flower. Here the collection of *Vanda tricolor* varieties are in grand health, with some of them in bloom, as well as fine specimens of the elegant *Ionopsis utricularioides*, *Miltonia Schroderiana*, and *Zygo-colax leopardina* ×; and continuing along the range,

sending out a shower of pretty sky-blue flowers, all around the baskets in which they are growing. The large collection of *Cypripediums* in bloom have some fine forms of *C. Harrisianum* ×, *C. Curtisii*, *C. superbiens*, *C. chloroneurum* ×, *C. numa* ×, *C. Volonteanum*, *C. Dominianum*, *C. orphanum* ×, *C. ænanthum* ×, *C. Euryandrum* ×, &c.; and in the *Nepenthes* house are some well-bloomed *Galeandra Baueriana*. The *Odontoglossum*-house, which contains, without doubt, the handsomest and most valuable specimens in the world, although not at its showy season, is far from bare of flower.

In the large stove, among the handsome scarlet *Anthuriums*, &c., are the *Dendrobiums* of the *D. densilorum* section, and among those in bloom a fine specimen of *D. Guibertianum* with three spikes. In the other plant-houses the *Achimenes* are good. *Begonias* very showy, *Carnations* well bloomed, and all the other things in the usual condition expected at The Dell; whilst the vineries and other fruit-houses, which equal in extent the Orchid part of the establishment, and are as neatly kept, are in crop and condition all that could be desired.

FLORISTS' FLOWERS.

THE AURICULA.

GROWERS are always anxious to compare notes with each other, even if it has to be done by letter; and, so far as I can gather, this year the growth and appearance of the plants are better than usual. Mr. Horner, writing this week from Lowfields, Kirkby Lonsdale, says the growth is very vigorous; he uses the word "proud." Our own plants are also vigorous, and a large number of them have produced, and are producing, autumn trusses. With us this free-blooming character generally follows a good autumn growth, but the plants have time to form a new heart again before the winter; when they flower later, the chances of a good spring truss is more remote. In the north, the growers have not much trouble with autumn blooms. Mr. Horner rarely has more than five per cent. which throw up trusses; whereas in our own collection, and also in that of Mr. Henwood, at least fifty per cent. of the full-sized plants will flower. Neither of us try any special system of culture to prevent it, for whether the plants are kept moist or dry at the roots, the results are the same. We have finished repotting the whole of the full-grown plants. The alpiners came last; generally they are not repotted until September, but I thought it better to see to them at the earliest possible opportunity, which for us this year was the last week in July. We finished the show varieties early in the same month.

The repotting of the plants affords an opportunity to remove any offsets that are ready. These are planted at once in thumb pots, which are filled about two-thirds with the ordinary potting soil, the top portion being made up of quite sandy loam and leaf-mould. In this the offsets rapidly establish themselves, and I find these small thumb pots are much better for the purpose than the larger small 60's are. The best position for them is in handlights on the north side of a wall.

Seedlings to flower next year should be potted on as the plants increase in size. They make the most growth in August, September, and part of October. We have sown the seeds saved this year both from the show varieties and the alpiners. We expect a few plants to appear between the time of sowing and the last days in October. A larger number vegetate in February. I have often urged the raising of seedlings, as affording an inexhaustible fund of instruction and amusement to amateurs, and I find that the advice has in numerous instances been followed. This is not the time to describe the system of crossing, which will be alluded to in its season, but advantage should be taken to obtain the very best varieties in the various classes.

There are four classes of show Auriculas, and the best three in each would give the twelve best Auriculas. The following are the best, as recorded by the vote of the leading growers in the spring of the present year: Green edged, Rev. F. D. Horner, Simonite; Colonel Taylor Leigh; Prince of Greens, Trail. Grey-edged: George Lightbody, Headley; Lancashire Hero, Lancashire; Mabel, Douglas. White-edged: Conservative, Douglas; Acme, Rad; Smiling Beauty, Heap, Selts; Heroine, Horner; Mrs. Potts, Barlow; Black Bass, Woodhead. The twelve best alpiners are Edith, Turner; Sunrise, Unique, Mrs. Ball, Pallas, King of the Belgians, Mungo McGeorge, Diadem, Gorton; Love-Bird, Douglas; Philip Frost; Mrs. Meiklejohn, Meiklejohn; and Macida. Most of the above were raised by Mr. Turner, of Slough.

THE CARNATION AND PICOTEE.

This has been a very late season. Our own flowers were not of a high order of merit this year, the flowers small, and the petals thin. The plants themselves did not suffer, and layering was completed by Aug. 11, so that we will hope to have a good lot of plants for next season. I find it is rather difficult to save seeds of the best double varieties, the petals are too much

crowded together, and pollen is not easily found. Such varieties have also a tendency to burst the calyx, and it is a question whether seedlings should be raised from them, even if it were easy to do so. The demand in these days is for varieties with broad, well-formed, shell-like petals, which are regularly arranged in the calyx. Such varieties should be selected as seed and pollen-bearers, if the flowers are well-marked with flakes and bizarres of rich purple-rose and scarlet, or if they are self of bright and decided colours. The pollen-bearing flowers should be of good form, as well as of the most desirable colours and markings. The seed-bearer should be of vigorous habit; this is of the greatest importance, as the Carnation and Picotee are required to winter out-of-doors, and to bloom in the flower garden. Amateurs are anxious to obtain varieties of yellow-ground Carnations and Picotees, as well as good self-coloured yellow varieties, that will succeed out-of-doors. The best yellow self for the open border, is Pride of Peshurst.

There are numerous new varieties still untried. [Germania seems to be a good hardy yellow self. Ed.] The seed-pods now forming on the plants must be protected from wet by a glass shade, as the pods, unless protected, are likely to rot. All the seeds I have saved have been from plants grown in an airy glass-house. Encourage the growth of seedlings by keeping the ground clean between the rows with the Dutch hoe. Seedlings a year older should be marked and layered as the flowers develop. *J. Douglas.*

ROSES.

Pot-grown Roses.—The full beauty of the Rose is best appreciated in the open garden, where they are planted in groups and well cultivated by rich feeding and deep working of the ground, so that during the summer months pot Roses are not needed; this is quite true, as most cultivators and admirers of the Rose will admit. Although the plants are not wanted for flowering at present, this is no reason why they should not be carefully looked after, in order that they may be well prepared for flowering when the time comes. I wrote about the spring treatment of pot Roses in the *Gardeners' Chronicle*, April 11, 1891, p. 471. Our own plants produced many very fine flowers under the treatment there recorded, but the flowers passed away in April and May, and the Rose bushes are now in an open position out-of-doors. They usually retain their healthy appearance out-of-doors without much trouble if the leaves can be daily syringed, and the roots are supplied with water as often as they need it. We have no accommodation for very large specimens, and the moderate-sized examples seem to succeed best with annual re-potting; and as the future success of the plants depend upon the constituents of the material and the quality of the work, the utmost care is necessary.

The more vigorous growing hybrid Perpetual Roses and hybrid Bourbons delight in fibrous turf from an upland pasture with a clayey loam underneath; this should be enriched with a fourth part of decayed stable manure, and as much leaf-mould, with a little coarse white sand to keep the whole porous; some bone-dust may be added to the extent of an eight-inch potful to each barrow-load of the compound. Any of the Rose plants that have well filled the pots in which they are growing with roots, may have a good shift, using clean flower-pots between 2 and 3 inches wider than those in which the plants were growing in previously. Some varieties, owing to their less vigorous habit, or some constitutional derangement, do not make many roots, and when the time for repotting comes round, we may find the soil rather sour owing to the roots not running freely through it; these require rather different treatment. The poor soil may be removed, and the plants may be returned into the same-sized flower-pot as that from which they have been removed. In all cases perfect drainage is necessary, clean crocks should be used, and over them a thin layer of the fibrous part of the turf loam from which the clay particles have been well shaken out. The difference between careless potting and a careful attention to even the smallest details of the work, is not much as regards labour, but it is a great deal

when we come to count the advantages to the plants. The one may mean the drainage choked up a month or so after re-potting, and the other a clear outflow for the superfluous waters until the end of the season; in the one case unhealthy growth, and in the other a vigorous healthy development with the production of well-formed handsome flowers. The plants in our garden have a good position out-of-doors, and both the hybrid perpetual and the Tea Roses produce some nice flowers in the autumn; but as the cold damp nights set in the flowers do not open well, unless the plants are placed under glass. They do not need an artificially-heated atmosphere, as the dry airy greenhouse protects the flowers from damp, causing them to open beautifully. I need not say that all insect pests and parasites must be kept from the leaves. They are so liable to be attacked by mildew, that, probably, no collection of Roses is ever free from it. If the Rose bushes are not large, dipping them in a tobacco liquor and sulphur mixture, destroys red-spider, thrips, greenfly, and mildew at once. Once only were the leaves attacked by the Orange-fungus, which came to us with some pot Roses that had been purchased; it was detected on its first appearance, and all the portions of leaves attacked were cut off and burned. The Roses were dipped in the mixture indicated above, and this was the first and last of the Orange-fungus in our garden, either from pot Roses, or Roses in the open garden. The hybrid perpetual Roses do not suffer much as regards the health of the plants by being left out late in the autumn. If continuous rains set in, which are likely to drench the roots too much, we lay the pots on their sides. The Tea-scented Roses are more tender in respect both of the plants and the flowers, and if left out late, the leaves sometimes drop off, and at other times they become plentifully besprinkled with black fungus spots. I ought also to add, that the Tea Roses succeed better with a more open compost, and if some brown fibrous peat can be obtained to add to the potting soil, the Rose will be the better for it. When well grown in the summer and autumn, they flower well later, and more profusely, than most of the hybrid perpetuals. We have had beautiful blooms and buds with the Chrysanthemums. The autumn flowering does not militate at all against their flowering well in the spring and early summer the following season. Some varieties of Roses are much better adapted for pot culture than others; indeed, some are not adapted to it at all, and those who are desirous of cultivating Roses in pots, and have but little knowledge of the subject, would do well to entrust their order to a dealer who thoroughly understands them. The Tea-scented Roses are the most esteemed for the purpose, and a few of the best are Alba rosea, Amazone, Anna Ollivier, Belle Lyonnaise, Catherine Mermet, Comtesse de Nadaillac, Devoniensis, Etoile de Lyon, Gloire de Dijon, climbing; Hon. Edith Gifford, Madame Berard, climbing; Madame Falcot, beautiful in bud; Niphotos, Souvenir d'Elise Vardon, Souvenir de S. A. Prince, Sunset, and The Bride. Hybrid perpetuals are harder Roses, and more easily managed by the inexperienced cultivator. The better varieties for pot culture in this section are:—Alfred Colomb, Alphonse Souper, Boule de Neige, Captain Christy, Charles Lefebvre, Dr. Andry, Duke of Edinburgh, Eugène Levet, François Michelin, Heinrich Schultzeis, Jules Margottin, La France, Madame Gabriel Luizet, Madame Victor Verdier, Marie Baumann, Mrs. John Laing, Senateur Vaisse, Victor Verdier, and Violette Bouyer. *J. Douglas.*

DEVONSHIRE FERNS.

It is but natural that the county of Devon with its luxuriant Ferns, and possessing a surface territory of, at least, 2500 square miles, comprising a great number of fertile valleys and sheltered combs, and an extensive coast line—should be unusually rich in flowering and flowerless plants. These number many hundreds of species; in fact, it has been said that quite two-thirds of the kinds known as being indigenous to Britain, are to be found there; moreover, there is no spot in the land where the birds sing so sweetly. I was, however, not prepared to receive the information given in the notes contributed by "The Strolling Devonian" in the county-chat column of the *Devon Weekly Times* recently, that the kinds of Devonshire Ferns were so numerous that the admirers of those interesting plants were in

sad trouble and perplexity as to their identification, and that there was no Fern book in existence which gave plain English descriptions and illustrations.

Things must have strangely altered since I left Alphington, unless the "Strolling Devonian" has erred. There was a time in past years when I found delight in the study of the Ferns of my native county, and made a hobby of it, searching out their haunts in every district, and so far as I am aware, there were only about a score of species, including some extremely rare ones, which ere now I fear have been annihilated, for, of late years, the advertisements of the Fern stubbers have been continuous, and every issue, of one newspaper in particular, reveals tempting offers from persons — especially females — who practise this work of destruction and vandalism. I, for one, do not see much harm in the removal of a few of our native Ferns by the amateur or student; and, with a view of helping the "Strolling Devonian" and his puzzled friends, I may say that cheap, trustworthy, illustrated books on Ferns are easily obtainable, remembering that many species are known by different generic names, which, I suspect, has contributed to the confusion he speaks of, because some authors adopt one and some another. For example, the common Male Fern according to a recent publication is named *Nephrodium Filix-mas*, and by another authority *Aspidium Filix-mas*, whereas most people know it as *Lastrea Filix-mas*. The Lady Fern was known as *Athyrium Filix-femina*, but this has been altered to *Asplenium Filix-femina*, and the hard Shield Fern has long enjoyed the title of *Polystichum aculeatum*, but now is styled *Aspidium aculeatum*. Moreover, the old scaly Fern known everywhere as *Ceterach officinarum* is catalogued as *Asplenium Ceterach*. These are but a few of the changes, and so the world goes rolling on, which goes to prove that in Fern lore, at any rate, it is necessary to keep in close touch with "to-day," for it seems the lesson gained yesterday stands in danger of being reckoned a farce and a delusion.

The Ferns most frequently found growing wild in Devonshire are:—the Brake Fern (*Pteris aquilina*); the Male Fern (*Nephrodium Filix-mas*), the Lady Fern (*Asplenium Filix-femina*), the Hart's-tongue (*Scolopendrium vulgare*), the common Polypody (*Polypodium vulgare*), the rough Spleenwort (*Lomatium spicatum*), the Maidenhair-Spleenwort (*Asplenium Trichomanes*), the black Spleenwort, known in Covent Garden as the French Fern (*Asplenium Adiantum nigrum*), the Scale Fern (*Asplenium Ceterach*), the hard Shield Fern (*Aspidium aculeatum*), the Royal or Flower Fern (*Osmunda regalis*), the wall-rue Spleenwort (*Asplenium Ruta-muraria*), the crested Shield Fern (*Nephrodium spinulosum*), the great crested Shield Fern (*Nephrodium spinulosum dilatatum*), the soft Shield Fern (*Aspidium angulare*), the sea Spleenwort (*Asplenium maritimum*), the Beech or Mountain Polypody (*Polypodium Phegopteris*), the common Mooswort (*Botrychium lunaria*), the Adder's Tongue (*Ophioglossum vulgatum*), and the Filmy Fern (*Hymenophyllum tunbridgense*), &c.; but some of the last-named were very scarce years ago, and can now, I expect, be only found in private gardens, where, latterly, the various forms of British and exotic hardy Ferns have been manipulated and many seedlings raised, so that now we have in cultivation hundreds of garden varieties, many being extremely novel and beautiful. *W. Napper, Chelsea.*

FORESTRY.

SEASONABLE WORK—AUGUST.

NOTWITHSTANDING the cold backward weather which we experienced in many parts of the country during the spring and early summer, yet on the whole vegetation and trees have made satisfactory progress, and in Ireland I think I never saw things looking better—many of the trees, both forest and ornamental, are actually loaded with fruit and fine

healthy-looking foliage. There appears to be a fine crop of haws, hips, and wild fruit generally, which will prove useful and valuable in due course. Haws gathered and sown at once at this season of the year generally vegetate next summer, by which means a great deal of trouble, expense, and time are saved. Sow the haws broadcast upon well-worked ground in good condition, such as has carried a crop of early Potatoes, and formed into beds about 4 feet wide. A bushel of fresh collected haws should be allowed for about 20 lineal yards of a bed the size specified. The haws should be sown in a regular and uniform manner on the surface, pressed down with the back of a spade or roller, and covered with about half an inch of fine soil. In cases where the haws are sown in autumn, the covering should be rather deeper than the former, but as these do not vegetate the first summer, a crop of surface-rooting plants may be raised on the same ground without interfering with the haws below.

This is a very proper time of the year for pruning forest and ornamental trees where requisite. What I mean by pruning is, the removal of double leaders at the top, cutting back strong unwieldy side branches in order to lessen the risk of fracture by wind, and promote the formation of a uniform well-balanced top. Trees that are apt to bleed at the wounds where branches have been cut off, such as the Sycamore, Birch, &c., may be pruned at this season with impunity, as the wounds made at present soon heal up without any injurious effect. It is a mistake to neglect the pruning of young trees until such time as the branches or leaders to be removed have acquired a large size. Pruning should always be executed when the branch or leader to be removed can be cut off with a sharp pruning-knife; but in cases where the work has been neglected, and where the pruning-saw has to be used, the lips of the wound had better be pared and made smooth with a sharp knife, to prevent the lodgment of water, and in some cases it will be an advantage to dress the surface with a coat of thick paint, the same colour as the bark of the tree. The pruning chisel, fixed to the end of a strong pole is a very efficient implement for cutting off rival leaders at the top, as it not only saves the trouble of climbing, but likewise leaves a smooth sloping surface to the wound, which soon heals up, without any injurious effect whatever.

When trees are well managed in this way in early life, they seldom require much pruning in after years, and in order to promote the formation of clean timber, free of knots in the trunk, this should be brought about, as far as possible, in the course of thinning. Trees should always be allowed space for their full and healthy development, at the same time they should be thinned in such a way that the side branches gradually lose their vitality and fall to the ground of their own accord, by which means by the time they attain maturity the stems present fine clean shafts almost of a cylindrical shape, and free of knots or stumps for a distance of about two-thirds of the length of the stem. Isolated trees, however, and such as are growing around the margins of plantations, should have their dead branches cut off, otherwise they will become carbonised and as hard as horn, and thus lay the foundation for a loose knot in the timber. Pruning should always be conducted in such a way as to direct the whole energies of the tree to the formation of wood in the trunk, and thus prevent them from wasting their substance in the support of several stems and large unwieldy side-branches. Bush trees are very ornamental as specimens on the lawn or elsewhere, but as timber trees for utility they cannot be compared with such as has been pruned in early life and kept to one stem. Early and judicious pruning leaves no mark or blemish of any kind upon the tree; but when large branches or limbs are cut off the case is quite different, as large wounds often lay the foundation for rot and decay, and thus reduces the value of the timber to a large extent, and in many cases brings about the premature death of the tree. This system, however, of removing large limbs and branches from trees cannot be called pruning—mutilation is the

proper term, and in order to prevent confusion these terms should be always kept in view and well defined, the former is beneficial, and the latter destructive.

Young plantations should be examined frequently, and superfluous growths of whatever kind should be cut back or removed altogether according to circumstances. In my early days, Oak was often pruned in such a way as to promote the formation of crooks and bends for ship-building, but as iron is now being largely used for that purpose the training of Oak seems to command less attention, although at the same time knees and bends for boat-building generally meet a ready sale and good prices. From this it is to be gathered that large Oak trees with massive limbs are often very valuable for that purpose, and in training trees to one stem the Oak in a great measure may be exempt, and allowed more latitude to form bulky heads. Trees of this kind require considerable space to ramify, and should be grown along the margins of plantations and similar situations, where they have plenty of field to extend their limbs without crushing their neighbours. *J. B. Webster.*

BELGIUM.

GHEENT.

At the August horticultural meeting at Ghent, the plants shown were not very numerous, but were all noteworthy. Certificates were awarded for—1, *Asparagus trichophyllus*, from M. L. Desmet-Duvivier, an excellent variety; 2, A species of *Cattleya*, a natural hybrid, to MM. Edm. Vervaeet et Cie.; 3, *Adiantum palmatum*, from MM. Desbois et Cie., very rare and elegant; 4, *Cypripedium concolor* var. *Gardenianum*, from the same exhibitors, a hybrid of *Godefroyae* and *C. concolor*, with a flower like the latter, but of a paler shade; 5, *Lilium aratum cruentum*, from M. Bl. Pyaert Van Geert, with splendid flowers, which were much admired; 6, *Dracæna argentea striata*, from the same exhibitor. The following Certificates of Merit for good cultivation and blooming were awarded:—1, To *Pteris serrulata densa*, from M. L. Desmet-Duvivier, a charming specimen, exceedingly well cultivated; 2, to *Cattleya gigas atropurpurea* (unanimously awarded), from MM. Vervaeet et Cie., with fifteen superb flowers; 3, to *Clianthus Dampieri*, from MM. Desbois et Cie., grafted on *C. punicicus*, and of dwarf habit; 4, to *Impatiens Sultani*, with variegated foliage, from the same exhibitors, a very pretty specimen.

ANTWERP INTERNATIONAL EXHIBITION.

The gardens of the Royal Athenæum, where this Exhibition is located, are transformed into a magnificent garden, which has been lavishly stocked with representatives of the different floras of the globe. The large and fine *Chamaerops excelsa* of MM. Ang. Van Geert and G. Vincke-Dujardin, *Chamaerops humilis*, a fine plant of *Phormium tenax*, and a splendid *Dracæna lineata*, from the last-named exhibitor; *Elaeagnus Fortunei foliis marginatis*, *Testudinaria elephantipes*, an immense *Euonymus japonicus argenteo variegatus*, from M. Louis Desmet; *Chamaerops excelsa*, and a specimen *Clethra arborea*, from Madame Osterrieth; *Cassia floribunda* and *Hebe grandiflora*, from Madame G. Grisar; *Acer polymorphum palmatifidum*, and a splendid *Doryanthes Palmeri*, from MM. Desbois & Cie.; *Phœnix canariensis* and *Phormium tenax*, from M. D'Haene; and some pretty *Bouvardias*, bloomed by M. Vermeulen, are all remarkable for sturdy growth and excellent cultivation.

I would commend to the notice of amateurs the pretty Japanese plants from MM. Desbois, those from China and Japan from M. Ch. Van Geert, and his fine group of *Yuccas* and *Agaves*; *Arucaria excelsa* from M. G. Vincke Dujardin, and especially the splendid collection of Japanese and Californian Conifers; very pretty also are the plants of *Acacia paradoxa*, sent by M. Jules De Cock.

M. Pauwels shows some fine specimens of

Orchids; especially noteworthy is an *Oncidium divaricatum*, with an enormous cluster of flowers. The fine collection of Mexican Cacti from M. Vermeulen, the Japanese Lilies from MM. De Herot and Strecker, and the cut Gladioli from Madame Osterrieth, are all interesting.

CULTURAL NOTES.

BLANCHING.

This means the whitening of the leaf or leaf-stalk of the plants. Blanching is effected in plants by growing them in darkness for a period ranging from ten days to a fortnight, according to circumstances. Celery is blanched out-of-doors by drawing the leaf-stalks together at the top and covering them with a few inches thick of soil on both sides up to the heart of the individual plants, repeating the operation two or three times during the progress of growth. Cardoons may be blanched in a similar manner as Celery. Lettuce plants are blanched by tying the leaves together near the top with bands of matting when nearly full grown. Home varieties of the Cos Lettuce, owing to the infolding habit of the leaves, blanch naturally. Endive is frequently blanched by covering the plants where they are growing with Fern, pieces of slate, and boards; but in the event of wet weather setting in, a large number of the plants become a prey to damp. Endive and Lettuce plants are also blanched by lifting them from frames and transplanting in shallow boxes, pots, &c., putting them in Mushroom-houses, cellars, and such-like places, from which daylight can be shut out, putting fresh plants in at short intervals—say, every fortnight or three weeks, to keep up the succession. Chicory and Seakale are blanched in the same way, the roots being put into pots and boxes, and soil packed round them after they have shed their leaves in late autumn, or by covering the roots with pots or long narrow boxes, and again covering them with fermenting leaves, &c. *H. W. W.*

INDIA.

The authorities at Kew, in conjunction with the Government of India, have devised a scheme for the organisation of a botanical survey of India, and the welding of the scattered departments into a federation with the Calcutta Botanic Garden as the centre. The details of the scheme are given in the current number of *Nature*, from which we condense the following particulars, noting, by the way, that this is only another illustration of the general principle upon which the Director of the Royal Gardens, Kew, is working to secure a regularly organised Botanical Department for the whole empire, varied in detail according to circumstances and requirements, and of which the staff shall be so selected, that any man who enters may rise by successive steps to the higher positions.

The Botanic Garden, Seebpur, Calcutta, is officially recognised as the acknowledged centre of the Botanical Survey of India, to which should be referred the solution of all problems arising out of the practical or scientific study of Indian botany. Dr. King, the Superintendent of the Royal Botanic Gardens, Calcutta, thus becomes, henceforth, the Director of the Botanical Survey of India. Dr. King will specially undertake the direction of the botanical survey of Burma and Assam.

The investigation of the Flora of the Madras Presidency and of the Hyderabad and Mysore States, has been entrusted to Mr. M. A. Lawson, the Government Botanist and Director of Cinchona plantations.

In Bombay, Dr. Cooke, Principal of the College of Science, Poona, is officially recognised as in charge of botanical research in that presidency.

The Director of the Botanical Department, Northern India, is Mr. Duthie, formerly the Superintendent of the Botanic Garden, Saharanpur. Mr.

Duthie accompanied the Black Mountain Expedition, and acquired information concerning the flora of the country, which had, hitherto, not been botanically explored. During the last three years, Mr. Duthie has also been deputed to Simla, in the hot weather, to assist in the preparation of the *Dictionary of the Economic Products of India*, and during the same period he has been actively engaged in the botanical exploration of Rajputana and the central provinces. Neither the Straits Settlements nor Ceylon are included in the scheme, they being Crown colonies. The arrangement is, therefore, as follows:—

Under the Superintendent, Royal Botanic Gardens, Calcutta (Dr. King)—

The provinces of Bengal, Assam, and Burma; the Andamans and Nicobars, North East Frontier, expeditions.

Under the Government Botanist of Madras (Mr. M. A. Lawson)—

The Presidency of Madras, the State of Hyderabad, and the State of Mysore.

Under the Principal, College of Science, Poona (Dr. Cooke)—

The Presidency of Bombay, including Sind.

Under the Director, Botanic Department, Northern India (Mr. Duthie)—

The North-Western Provinces and Oudh, the Punjab, the Central Provinces, Central India, Rajputana, North-West Frontier expeditions.

PLANT PORTRAITS.

AERIDES AFFINE VAR. *GODEFROYANUM*, *Revue de l'Horticulture Belge*, August 1, 1891.

CYDONIA JAPONICA ALBA, *Garden*, Aug. 8.

CYMBIDIUM ELEGANS, *Orchid Album*, t. 430.—A handsome species, with a pendulous, densely packed raceme of yellow flowers.

CYPRIPEDIUM ENGELHARDTII, *Lind.*—A hybrid between *C. insigne* Mauli and *C. Spicerianum*. The upper sepal has the colouring of the first-named, but the petals and lip are of a golden-yellow. A remarkable plant. *Lindenia*, t. 285.

CYPRIPEDIUM LAWRENCEANUM VAR. *HYEANUM*, *Orchidophile*.

DIPLOTA YUNNANENSIS, *Revue Horticole*, p. 247.—A shrub allied to *Diervilla*, and a native of Central China. It is described by M. Franchet as having white flowers veined with brown.

DIPLADENA THOMAS SPEED.—Flowers white, with a golden throat, *Revue de l'Horticulture Belge*.

DRYMOPILEUS OLIVIFORMIS, *Garden and Forest*, July 15.—A representation of a fruiting specimen of this Palm.

FRANCISCEA CALYCINA GRANDIFLORA, *Garden*, July 26.

GERANIUM ARMENIUM, *Revue Horticole*, August 1.

IRIS ALATA VARIETIES, *Gartenflora*, July 15, t. 1351.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

PINES.—Any potting that is required should be done as soon as possible, so as to get root growth made, for unless the plants have plenty of roots they can hardly be expected to make much progress when required in the early part of the year. Newly-potted plants should get plunged in a mild bottom heat of 80° to 85°, and not have much moisture at the roots. I like a frame or pit with a steady heat for plants at this stage, as if unduly excited now they often throw imperfect fruits. Suckers should still be potted up, using the stronger stock for the purpose, and not too large pots. A frame may be used for a time, covering it at night so as to maintain an even temperature. In frames, the great danger arises from excessive moisture, so that only those suitable should be used for the young stock.

Successions coming into fruit may get occasional supplies of liquid when in robust condition. Less shade will now be required, and therefore less moisture; still, a moist growing atmosphere must be maintained, with fire-heat in dull weather. Those swelling up need similar treatment, avoiding too much moisture overhead. A batch of late fruiters should now be selected from the Cayennes, Roths-

childs, and others, and, if possible, a pit or house devoted to them, so as to give them more atmospheric moisture, with less air than those plants that are to fruit next spring, closing early, and only shading for a short time, if necessary, in the middle of the day. Some fresh manure-water should be placed in the evaporating pans, for the next few weeks, once or twice a week. Ripe fruits should be removed to a cool room; if required to keep some-time, they should be suspended by the stalk. Queens that are finishing their fruits should get a dry cool atmosphere, and a free circulation of air to prolong the fruiting period as long as possible.

LIFTING UNHEALTHY VINES.—This period of the year is a good time to undertake this work, if the crop is secured, and the wood matured. In the case of Vines which shank, weak foliage, or exhausted borders with the roots at the bottom, now is a good time to begin lifting. The old soil should be removed with a fork, beginning at the outside, and the old material taken away; the roots all carefully preserved by laying them in damp mats, and keeping them moist, taking care to save all fibrous roots, and if found in a bad state, the work should be vigorously proceeded with, the border remade all through, if necessary, with new drainage, not omitting to put in drain pipes to secure fresh air to the drains, to keep them sweet—this is readily done as the work proceeds. The old decayed roots must be cut back to a live part, and the small fibrous roots carefully spread out, and all kept as near the surface as possible, making the new compost firm, and in doing so, taking care in ramming not to injure the roots. If the roots are very bad, the border can be narrowed, and not made up to the allotted space; this can be completed another season. A layer of fresh stable litter should be put over the surface when finished, the border being well saturated with tepid water, and the house kept shaded and close, also syringed several times daily. In most cases a restricted border will be best, adding soil as the young roots come to the outside in after years. In lifting, the important part of the work is to get the roots re-covered without exposure, to keep the air close and moist, and to give the roots a good compost of turfy loam, old mortar, crushed bones, and charcoal or wood ashes. Loam being the principal material, it should be as sound as possible, not too light or poor; and it is also advisable to use plenty of wood-ashes, charcoal, and old mortar, in preference to a large quantity of decayed manure—the latter, when used to excess, especially with a deficiency of roots, causing the new material to become sour before the young roots can take hold of it. I find Thomson's Vine Manure the best and safest for this purpose, and would only use the animal manures as a top-mulch on the surface. With newly-lifted Vines a little extra care is required for a few weeks by careful airing and shading, and as the foliage assumes an erect, firm state, more air and less shade will be required. It is surprising how soon old Vines take to their new conditions if kept moist by syringing and damping all parts of the house. The greatest difficulty is with very late Grapes, or in unheated houses, but these may successfully be operated on just before the Vines break, but it is a delicate work, and requires despatch and experience. I would rather advise starting much earlier, and getting the crop taken, and doing the work in the autumn, as there is a certainty of success at that season; besides, when done early in the year, the Vines flag in the summer, and do not do nearly so well. It is also advisable to crop very lightly the first season, and not force hard, allowing them to break naturally, as forcing and cropping heavily would certainly undo the good that had been secured by lifting them. They should be permitted to grow freely, and the terminals allowed free run, stopping the laterals when they touch to prevent crowding. *G. Wythes, Syon House, Brentford.*

PLANTS UNDER GLASS.

BOUVARDIAS.—Young stock planted out in pits or frames will have made much more growth than those grown in pots, and where it is intended to take the plants up and pot them, there should be no delay in doing it, or the roots will not take sufficient hold of the new soil, and the plants will not bloom satisfactorily. Care will be necessary not to injure the plants in any way when potting or lifting them. A compost consisting of three-fourths good loam, one-fourth rotted manure and leaf-mould in equal quantities, and sand in due proportion, will be found suitable for these plants. The potting should be done moderately firm, and the plants stood in a house

where they will get sufficient light, and enough heat to induce some amount of top and root growth. Keep the house or pit rather close for a few days, and use a thin shading during the middle of the day when the weather is bright. Syringe lightly overhead in the afternoons at closing-time, but avoid giving too much water before the roots begin to take to the fresh soil. Bouvardias in pots, which have been kept in pits or frames during the summer, should be shut up early in the afternoons, so as to induce them to grow freely during the next few weeks; and, if possible, have them placed in a pit where a little fire-heat can be turned on at nights, and in the day time also in cold wet weather. A small quantity of weak manure occasionally will assist them. Keep all flowers picked off for the present.

MIGNONETTE.—At the present time sow seed of Mignonette for flowering in the winter, later sowings not having sufficient time to get well established before winter sets in. The seeds may be sown in 32's, using a compost consisting of half good loam, and a quarter each of rotted manure and leaf-mould, and a fair sprinkling of sand and old mortar broken small, mixing the whole well together; have the pots well drained and filled with the above compost to within 1 inch of the rim, sowing the seed evenly, but not too thick on the surface, afterwards covering the seed lightly with the finer portions of the compost. Place the pots in a cold frame, in a sheltered but sunny position; damp the soil lightly with the syringe till the seedlings appear, and shade them when the sun is bright. Thin the plants as soon as they are large enough to handle, but it is always advisable to leave a few more plants than will remain finally, when about four plants should be left in each pot. The plants may be grown in frames till there is danger of severe frost, when they should be removed to a light position in the greenhouse.

CAMELLIAS.—All these plants should now be examined, the leaves cleared of dirt and scale. The white scale is one of the worst of plant foes to deal with, as but few plants can bear so strong an application of an insecticide, as is necessary to kill the insects. Plants having this species of scale insects, should have the strong wood cleaned with a hard brush, and the leaves with a sponge or soft brush. Now that the baneful practice of cutting the shoots of Camellias when taking the flower is generally discontinued, the extra vigour which is thrown into the plants by the side shoots being left intact, causes the bloom-buds to set in much larger quantities, and calls for more thinning of the flower buds. This operation of bud reduction should be done at once, two or three buds only being left on each shoot.

Plants growing in beds and borders sometimes make a second growth at this time of the year instead of setting their flower-buds, but this is usually caused by over-much water being afforded them; and any plants which show signs of this should have water withheld entirely for a time, which they will bear without dropping their buds, as would follow this course of treatment were the plants growing in pots. *R. Milner, Penrice Castle, Swansea.*

THE KITCHEN GARDEN.

WINTER CROPS.—Now that the various plantings of Brussel Sprouts, winter Greens, Broccoli, &c., have obtained a good start, they should be gone over, all discoloured leaves removed, and the ground thoroughly cleared of weeds. The plants should be supported by having the soil drawn up to the stems. Continue to plant out on rich ground more Early London Coleworts and the hardy green variety; also early kinds of Cabbage of those sown in June.

CARDOONS.—Keep the stems of these plants in an upright position by gathering them together and tying them with matting. A stake should be put to each plant to prevent injury by rough winds.

GLOBE ARTICHOKEs.—Remove all old flower-heads and stems as these by remaining impoverish the plants. Those planted out in spring should be afforded liquid-manure, and, on light soils, should be mulched with decayed manure. These plants, if liberally treated, will produce fine heads in September and October.

CRESS.—A few rows of American, Australian, and Normanly Cress should now be sown. These take the place of Watercress in winter. Sowings should be made in such a position that they can be covered with glass or mats in severe weather. The leaves should not be cut like curled Cress, but the

outer ones should be picked at short intervals, and the plants will then continue to push forth fresh ones. There is but little danger of it running to flower at this season.

RADISHES.—A good sowing of these should be made on well-prepared soil. Slugs are very partial to them. Dustings of soot and wood-ashes will be found good preventives; but it is best to catch them, which is not a difficult task, if a few Cabbage or Lettuce leaves be laid about, and every morning examined, and the slugs killed.

PARSLEY.—The rougher leaves should be cut off, in order to induce robust growth. To enable the plants to withstand the winter, transplant the thinnings into blank spaces in the lines. Dust the plants with soot, and keep the hoe plied amongst them. Put some at once into cold frames or pots, so that in the event of hard weather, there may be some leaves to pick. When Parsley is swept clear of snow to obtain a picking, many of the plants perish. A sowing on a warm and rich border may yet be made, and should it withstand the winter, it will be found of much value in the early part of the summer.

TURNIPS.—In favoured districts these may still be sown. Thin out the plants of earlier sowings, and ply the hoe amongst these and all other crops until they cover the ground.

ENDIVE.—Plant out from the seed-beds at intervals sufficient quantities to form a succession. These plantings should be available for giving a supply throughout the winter; both for bleaching on the ground, and also for lifting and storing into frames. More forward plants should be prepared for use, either by being tied up or by having flower-pots put over them whilst dry; these will be bleached and ready for use in about eight or ten days from the date of covering. Where suitable accommodation exists, another small sowing can be made in a cold frame, to be afterwards transplanted into others for very late spring use. In making provision for the winter supply of Endive, preference should be given to the Batavia variety; it stands frost better than the curled one, keeps longer in a usable condition, and being tender and less bitter in flavour, is generally in great request for salads during the winter months.

LETTUCES.—Good provision should also be made of these, by planting out from the seed-beds all the most forward and strongest plants. Both Lettuces and Endive should be allotted warm, sheltered borders, and good, light, rich ground.

ONIONS.—These should be taken up when the tops and necks drop and begin to shrivel, and allowed to remain on the ground for a few days in fine weather, turning them over frequently, so that they may become thoroughly ripe and firm, choosing a bright sunny day to store them; an airy dry shed should be selected, wherein to place them for a time on open shelves, spread out thinly, afterwards to be sorted and cleaned. This is a suitable time for harvesting seeds; when they are not sufficiently ripe and matured at the time of gathering, they should be placed under conditions favourable for drying slowly. *C. J. Waitt, Glenhurst Gardens, Esher.*

THE HARDY FRUIT GARDEN.

ALL fruit trees pruned early will now require the young shoots to be stopped and trained. The double and single lateral cordon Apples, trained to wires for an edging, should have the leaves overhanging the fruits snipped off so as to obtain good colour and size. These tiny trees usually crop heavily when properly root pruned, &c., and they should be freely thinned, and some assistance afforded them to produce fine samples. Repeated applications of liquid manure, guano, or other suitable manures, should be given them early, and if the soil be light, surface root-ers should be mulched with manure, and subsequently drenched with slightly tepid water to wash down the manurial properties. As the young growths appear pinch them, while the ends which may not have filled their allotted space should be carefully tied to the wires with soft bast, taking great care not to tie them too tightly, or they may get injured.

UPRIGHT CORDONS, which usually, or ought to, consist of the choicest Pears, should receive all necessary attention, keeping the soft breast-wood stopped hard back, while some of the leaves may be clipped backed to freely expose the fruit to the light. Do not over-crop, but thin freely, to allow the trees to build up for another season's crop. Trees planted

on a well-prepared border, if limited, should be mulched, and frequently deluged with slightly tepid water; this will greatly improve the size of the fruit, as well as the flavour. Clapp's Favorite, Williams' Bon Chrétien, and B-arrié d'Amanlis Pears may be gathered a few at a time, and put aside to ripen. Do not let these Pears hang too long on the trees; the flavour is never so good, neither do they keep so well as when gathered a trifle under-ripe. To follow these, Malme Freyve, Triomphe de Vienne, Fondante d'Automne, Louise Bonne of Jersey, &c., will be found capital sorts, but these will not be ready to gather yet.

HORIZONTALS AND ESPALIERS trained should also be gone over again, and the young sappy growths cut off. But any which may not yet have been summer pruned should be shortened closer than those done early. Let all this work be finished off as fast as possible, going over young standards and thinning out the heads where too thick, spurring in the inner shoots to four buds. The shoots of Nuts should also be shortened if not done—not too closely, while the suckers and all useless spongy wood should be cut away entirely.

Grafts will also require looking after, and if the scions have taken well, and made good growth, they should be shortened back, especially standards, thus lessening the danger of breakage by wind. Remove the ties, and strip the stems of useless young wood. See that good labels are provided, and a note kept of all the sorts. Remember where there is any grafting to be done in the coming spring, to reserve shoots of the most suitable and best kinds especially for that purpose. *H. Markham, Merworth Castle, Malton.*

THE ORCHID HOUSES.

THE CATTLEYA HOUSE.—In this house are grown usually, the *Lelia purpurata* and *L. elegans* in variety, the chief rooting season for which is now coming; and any plants which may be in an unsatisfactory state should be repotted, great care being observed in the carrying out this work, especially in getting well-rooted plants out of the pots. I always break the pots gently, and with a thin knife detach the roots from the sides of the pots, the best knife for this purpose being a painter's pallet-knife; but roots which are attached to the crocks are allowed to remain intact, and carefully placed in the new pots, other potsherds being placed around them so as to secure proper drainage. Good fibrous peat and sphagnum moss are all that is necessary for packing about the plants, inserting here and there pieces of clean crocks. But small quantities of sphagnum should be used with these *Lelias*, just inserting a piece here and there upon the top to serve as a tell-tale when the plants are getting dry. After re-potting, the plants should be kept from the direct rays of the sun until it can be seen that the new roots are pushing into the new material; water should then be afforded, and not before, observing always to use the materials in a moist condition.

THE ODONTOGLOSSUM HOUSE.—The season has again come when preparation should be made for re-potting the whole of the occupants of this house, clean pots—new ones if possible—clean potsherds, and good fibrous peat, being employed. If in turning the plants out, they should be found to be very firm in the pots, it is better to break the pots than sacrifice the roots. When the plants are taken out of the pots, every particle of the old material should be removed from the roots with a pointed stick, rinsing the latter in rain-water. In repotting a well-rooted *Odontoglossum*, the new pot must not have the crocks for drainage placed in first, but one piece only should be placed over the hole, then the roots should be carefully placed in, and other crocks added, one at a time, taking care not to crush the roots when doing this. Although this may seem a rather tedious operation, it is not in reality, and a large number of plants may be got over in a day with a little practice. As the potting of each plant is completed, the pot should be just dipped quickly under water up to the pseudo-bulbs, this will moisten the top of the compost without making it soddened. I should have previously remarked that *Odontoglossums* must be potted firmly. Abundance of air should be afforded at the top of the house at night, when it will be found that the plants, in the early morning, are covered with condensed moisture. The temperatures in the warm house may remain as given in my former calendar, but no fire-heat should be employed for *Odontoglossums* for some time to come. *A. G. Catt, Parkfield, Hallou.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

FRIDAY, SEPT. 4 { National Fruit Growers' Association, at the Crystal Palace.

SHOWS.

TUESDAY, SEPT. 1—Kelso.

WEDNESDAY, SEPT. 2 { Stirling (two days).
Paisley (two days).
South of Scotland, at Dumfries.
Glasgow and West of Scotland.
Bath (two days).
Royal Caledonian, at Edinburgh (three days).

THURSDAY, SEPT. 3—Dundee (three days).

FRIDAY, SEPT. 4 { Crystal Palace Fruit and National Dahila, held together (two days).

SALES

MONDAY, AUG. 31 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs, at Stevens' Rooms.

TUESDAY, SEPT. 1 { Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 2 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Liliums, &c., at Stevens' Rooms.

THURSDAY, SEPT. 3 { Dutch Bulbs at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 4 { Imported and Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 5 { Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—59°·8.

The Co-operative Flower Show. THE very successful festival, to which we alluded last week, marks an era in the history of horticulture. This show was very large, the entries reaching to about 4500, and the quality is improving as each successive exhibition comes round. But important as these qualities are, they are the least important of the many that give to this festival of labour its peculiar value and special importance. For at this annual exhibition there was not only a muster of the trophies and the successes of co-operative production and distribution, but we had horticulture in its most charming guise as a handmaid to industry.

These annual festivals tend directly to the ennobling of labour. Continued and extended, they will do much to abate the sweating system, and substitute homes for hovels wherever the latter still exist in town or country. Many considerations powerfully impressed us at the festival, such as the position of the exhibitors, and the quality of their products, considering the circumstances and conditions of the growers. Could the histories of these conditions be revealed, some of them would prove as pathetic, and far more instructive than many novels. Here are cases of defeat, of success, and of non-showing, as illustrative of the spirit of these co-operative workers:—

A man was holding up his Turnips—enormous samples of green-topped farm ones, and by far the largest in the show—in evident surprise that they could have been prizeless. "Too big and coarse, my friend, for the Palace, but capital for the cow on the three acres," dissolved the gathering frown into a cheery smile. It seemed he had taken twelve firsts, and was rather apologising to his group of friends for defeating them so often.

A third, a railway guard, was deeply absorbed

among the Begonias. "Have you been successful?" "No, sir; having to run up a special this morning, I could not attend to them myself on the journey nor here, and so I left them at home, though I could have beaten the best here easily; for you must know, Begonias are my hobby, though I have to grow and train them almost wholly by lamp-light, and an hour or so among them rests me so after my long runs."

And so on inquiry it will be found at these festivals that the miner, the weaver, the millhand, the bricklayer, the blacksmith, the carpenter, the mason, the mechanic, find rest from their monotonous toil among their flowers, fruits, and vegetables. Nor is rest only found in such pursuits, but greater power for labour and life in industrial enterprise. For as was well pointed out by Mr. D. T. FISH and Mr. WRIGHT, in declaring the Co-operative Flower and Fruit Show open, at the request of Mr. GREENING, this was a great technical school for making the heads of all these industrial workers more wise, and their hands more skilful. If such is the effect on those most familiar with plants and their products, who shall estimate their education and influence on practical workers, seeing them for the first time? Certain it is there was no sign in that great busy hive of industrial workers in the Palace, of those apathetic dullards of whom the poet contemptuously sang—

"A Primrose by the river's brink,
A yellow Primrose was to him,
And it was nothing more."

Now these flowers, fruits, leaves, vegetables, were Roses, Stocks, Mignonette, Apples, Pears, Plums, Gooseberries, Currants, Peas, Potatoes, Beans, Tomatoes, Marrows, &c., to these hard-headed, horny-handed co-operatives, and they were much more—furnishing for example, higher ideals, purer pleasures, better health, greater plenty, and purer life.

So much has been said of the exhibitors, that there is little time left to praise their products. It may be said of them in the mass what GEORGE ELIOT said of the women, that they matched the men—that is, in this case, the exhibitors. Improvements on former shows were chiefly in two directions. There were fewer bad exhibits, and greater variety in the good samples. In most classes there were still a few samples staged that ought to have been left at home or rejected by the committee. But on the whole, the exhibits in all departments were excellent, and there was no one interested in the food question but must have marked the enormous increase in the entries of Tomatoes, Vegetable Marrows, Cucumbers, Peas, Runner and French Beans, Shallots, Beet, Lettuces, and even Onions, with special pleasure. When these shows were first started, Potatoes, Broad Beans, Cabbages, and Onions largely occupied the space. Besides collections of Vegetables in competition from the northern, southern, and western districts of England, there were in one class of the great show alone, that from members of industrial co-operative societies only, sixty-seven dishes of Runner Beans, forty-two of French Beans, forty-five of Broad Beans, sixty-nine of Beet, seventy-nine of Onions, eighty-six of Peas, forty-six of Shallots, forty-nine of Vegetable Marrows, and twenty-six of Tomatoes. Carrots, Turnips, and Potatoes were plentiful, and fine as usual; while Celery and Cucumbers were more numerous, and there were no fewer than forty-eight dishes of Lettuces. These facts suffice to show great changes in the food supply of the people, and if it be true, to some extent at least, as some affirm, "that as a man eateth, so is he," it follows that these great industrial exhibitions and festivals of labour must have

a material influence on the physical health and industrial development of the nation.

Adon Mount,
Dulwich.

THIS is situated on a hill overlooking Dulwich Park, commanding extensive views of the country.

The situation is bleak, and the soil poor, being London clay, with outcrops of Woolwich and Reading gravel. Many thousands of tons of turfy loam from neighbouring fields, which are being rapidly built upon, have been brought here, and this will account for the luxurious growth and wealth of flowers to be seen in the garden, which covers about 4 acres.

The garden, with the exception of small spaces reserved for lawns for tennis-ground, is one huge herbaceous border. One long vista, a green path overlooking Dulwich Park, is very effective. The apparent confusion of flowers has, however, been studied, for we see a large mass of *Tropeolum canariense* growing up a stump along with *Clematis Jackmanii*; and beneath these clumps of *Coreopsis* and *Gaillardias*, associated with blue Cornflowers, the blue and yellow forming a pretty contrast. The great mass of the plants consists of the hardiest herbaceous plants, such as Foxgloves, *Harpalum rigidum*, *Rudbeckia*, (*Eurotia*, seedling *Hollyhocks*, both double and single; *Helianthus*, *Anemone japonica*, &c., as well as hardy annuals, e.g., Poppies, in great profusion and variety; *Campanulas*, *Delphiniums*, *Phlox Drummondii*, *Geletias*, *Nasturtium*, &c. Excepting in the places occupied by spring-flowering bulbs, where *Asters* and *Pelargoniums* are planted, the whole of the ground is completely covered by herbaceous plants, which are allowed to grow without any attention beyond removal of dead leaves and flowers. Such gardens as this are almost independent of the weather, for in this wet month the *Phloxes* are looking splendid; whilst, if it had been hot and dry, the *Gaillardias* and similar plants would be far better. In spring, a nook outside the ubiquitous border is filled with *Daffodils* and *Primroses*, and hereabouts a little pool suffices for the culture of water-plants.

Our illustration (fig. 31, p. 250), represents the most formal portion of the garden; it is a view of the south side, and shows a series of terraces formed by walls of concrete. These terraces are planted with Poppies, Foxgloves, Heaths, *Thalictrums*, *Iris*, and other plants, the walls being covered with variegated *Ivies*, which being slow in growth, are very suitable for such places. The seeds of the annuals are mixed with soil, and simply scattered about and allowed to grow almost in any place.

There is, of course, a kitchen garden, though the vegetables are well nigh crowded out with the Poppies and other herbaceous plants. There are several glasshouses, one conservatory being built over the billiard-room, which is lighted by a window in the middle of the floor of the conservatory; another, a cold vinery facing south is planted with Black *Hamburgh* grapes, and is utilised as a smoking-room—good crops of grapes were ripening at the time of our visit. Tomatoes are grown in a house devoted to them; when they are turned out of thumb-pots they are planted upon a stage made of concrete, and the roots just covered with soil, which never exceeds 3 inches in depth, but more is added as the roots appear on the outside. Judging from the crop, this plan appears to answer well.

If we might venture to suggest any change in this remarkable garden, it would be that a larger admixture of the best hardy evergreen coloured-leaved and deciduous flowering shrubs be made.

HER MAJESTY'S GARDENER.—We are informed that Mr. JONES, who for many years has had the direction of the gardens at Windsor and Frogmore, is retiring from his arduous duties. We were under great obligations to Mr. JONES at the time of the publication of our illustrated Windsor Supplement, as well as subsequently. We are glad to be able to congratulate Mr. OWEN THOMAS, of the Chatsworth Gardens, on his appointment to succeed Mr. JONES. The task is, no doubt, onerous and difficult, but Mr. THOMAS is, we believe, thoroughly fitted for the post, and we wish him all success in his new undertaking. Mr. THOMAS enters on his new duties on October 1.

Germany, and has not one at all resembling the parent; and amongst the seedlings are heavy red-edged, rose-edged, scarlet-edged, a fancy crimson-maroon Carnation, and a very large yellow-ground fancy Picotee. He also exhibited several varieties, including his fine seedlings, as well as the new sorts of BENARY'S and others. Mr. ROBERT SYDENHAM also sent a fine collection. A good discussion followed.

STORIES OF SENTIMENT.—By H. KAINS-JACKSON (ELLIOT STOCK).—This little book contains six or seven tales, all relating to various forms of the same "sentiment"—love. All are readable and inter-

esting, we find no mention of the remarkable work of the late Professor ALEXANDER DICKSON.

"MEEHAN'S MONTHLY."—The second number opens with a coloured plate of *Nuphar advena*, the American representative of our common yellow Water Lily. JOHN BARTRAM'S garden has, at the instance of Professor MEEHAN, been secured as a public park for the citizens of Philadelphia. Many of the fine trees planted by BARTRAM still remain.

FLORA OF CHINA.—The last issued part of the *Journal of the Linnean Society* (vol. xxvi., n. 176), contains the continuation of the enumeration of all



FIG. 31.—FLOWER GARDEN AT ADON MOUNT, DULWICH. TERRACES ON SOUTH SIDE. (SEE P. 250.)

W. T. THISELTON DYER, PH.D.—We are pleased at the opportunity of offering our congratulations to the Director of Kew on the occasion of his receiving the honorary degree of Doctor of Philosophy from the Imperial Leopoldine-Caroline Academy of German Naturalists, the oldest Scientific Society north of the Alps. The compliment is proportionate to the merit of the recipient.

BIRMINGHAM GARDENERS' ASSOCIATION—At a special meeting, August 19, Mr. C. H. HERBERT, of the Sparkhill Nurseries, read a paper on the Carnation and Picotee, giving details of cultivation, propagation, and his results of fertilising. Mr. HERBERT saved seed from BENARY'S superb yellow

resting; some would be still more so, were they less burdened with incidents bearing but slightly upon the plot. The characters are cleverly sketched, the scenery domestic yet not too commonplace. The book is clearly printed, on good paper, the cover neat and legible, and not gaudy or disfigured by a crude coloured illustration.

"DICTIONNAIRE DE BOTANIQUE."—Two numbers of this very useful publication are before us, bearing testimony to the diligence and care of Mr. BULLON. The third volume is now complete, and the fourth volume opens with a part which carries the text as far as "Smer." Under the head of

known Chinese plants, by J. B. FORBES and W. B. HEMSLEY. The present part brings the work down to the Daphnes (*Thymelacææ*). Chinese Rhubarb is the produce of *Rheum officinale* and *R. palmatum*. Several new Lauracææ are described and illustrated by Mr. HEMSLEY. The "Enumeration" is very serviceable to all who are concerned in the flora of China, and we trust that when it is completed, a supplement may speedily be given containing the species described in France and elsewhere since the publication of the earlier parts.

MUSSEL, BRUSSELS, AND BROMPTON PLUM STOCKS.—Frequent enquiries reach us concerning

the origin of these various stocks, employed by nurserymen for Plums, Peaches, &c., and but little seems to be known with certainty about any of them. Mr. W. PAUL, of Waltham Cross, in reply to our inquiry, says:—"I am quite unable to tell you when the Mussel, Brompton, and Brussels stocks originated, nor have I seen it stated in any work on gardening from what source they have been derived. ROGERS, in the *Fruit Cultivator*, third edition (1837), p. 359, says of the Mussel:—"It is a wild sort, but where it was first found is unknown; it has, however, been used as a stock for Peaches and Nectarines for the last 150 years." I have not the least doubt that all these stocks were originally selected from sowings, natural or artificial, of seeds of cultivated Plums. Certain seedlings appeared to the eye and mind of the experienced horticulturist likely to prove of value for stocks, and were consequently preserved, propagated, and, confirming the anticipations of their possessors, handed down for general use."

FRUIT CROPS IN KENT.—A correspondent at Sittingbourne reports that there are enormous crops of Pears and Plums in that district, but only a short crop of Apples.

THE GENUS MASDEVALLIA.—The second part of this monograph, issued by the Marquess of LOTHIAN, with the assistance of Miss WOOLWARD, has just appeared. It is uniform with Part I., reviewed in this journal last January, and contains drawings and descriptions of the following ten species,—*Masdevallia civilis*, *M. corniculata*, *M. cucullata*, *M. infracta*, *M. leontoglossa*, *M. maculata*, *M. picturata*, *M. Reichenbachiana*, *M. Schlimii*, and *M. Tovarensis*. The beautiful hand-coloured plates and the full and accurate scientific descriptions, with the interesting historical and biological notes of each species, from Consul Lehmann and others, are all of as high a standard as those we criticised early in the year. The present number includes *M. infracta*, the oldest species after *M. uniflora*, on which RUIZ and PAVON founded the genus in 1798. *M. infracta* was discovered by DESCOURTILZ, a French traveller and botanist, in 1809, but it was not till 1833 that LINOLEY published the first description in his *Genera and Species of Orchidaceous Plants*. It is of great interest to the student of geographical distribution, for its only known habitat is the Organ Mountains in Brazil, about 60 miles north of Rio Janeiro, and according to Mr. VEITCH'S *Handbook*, "upwards of 2,000 miles from its nearest ally in the Peruvian Andes." Miss WOOLWARD is also very clear about *M. picturata*, a species once confused by REICHENBACH with *M. meleagris* of LINDLEY, which, however, appears to be quite distinct. This charming little plant grows as far North as Costa Rica, thus representing almost the Northern limit of the genus as *M. infracta* does the Southern. We shall look forward with renewed interest to the appearance of Part III.

FLOWER-BEDS AT KEW.—In the Royal Gardens may be found, as is most appropriate, various modes of bedding to illustrate various styles, and to gratify different tastes. The old style of bedding is happily much less rampant throughout the country than it used to be, and those who wish to know what to substitute for it should see the numerous beds at Kew. Among them we may mention one of *Galtonia candicans*, intermixed with a small-flowered *Fuchsia*, beds of *Lilium longiflorum* by itself, and associated with dark foliage beds of *Anemone japonica* and other select *Hypericum Moserianum* × plants, as *Hydrangea paniculata grandiflora*. It is in such matters that Kew should set an example, furnish object lessons, and leave the authorities of the parks to follow their own more hackneyed course.

HOLLYHOCKS.—Messrs. STUART & MEIN send samples of a fine collection of Hollyhocks, the flowers are large, well-formed, globose, full, and varied in colour. Among them are *Crimson*, primrose flushed with buff; *John Findley*, dark red; *Cygnets*, white; *Pride of Laxton*, cream-coloured,

flushed with pink; *Robert Martin*, pale red; and *Conquest*, deep red.

PRESENTATION AND FAREWELL SUPPER TO AN EDINBURGH NURSERY EMPLOYÉ.—Mr. JOHN DAVIDSON, for a number of years foreman of the fruit tree department of Messrs. DICKSONS & Co., was entertained at supper on Saturday last in the Royal Exchange Hotel, Edinburgh, prior to his leaving Scotland to try his fortune as a fruit grower in California. The occasion was taken advantage of by numerous professional friends and brethren of the British Order of Ancient Free Gardeners—in which order Mr. DAVIDSON has been an able worker—to give tangible expression to their appreciation of his worth. By the Grand Master of the Order he was presented with a cheque for a handsome amount; by Mr. PEALING, florist, Edinburgh, with a purse and money on behalf of the Eden Lodge of the Order, and on behalf of the members of the east of Scotland district with a gold Albert chain and appendage. Mr. DAVIDSON is an enthusiastic pomologist, and carries the best wishes of a wide circle of friends and professional brethren with him to the land of his adoption.

REICHENBACHIAN ORCHIDS.—Owing to the peculiar restrictions imposed by the late Professor REICHENBACH in his will, it is not possible to consult the original specimens which formed the materials upon which many of his species are described in our columns. Under these circumstances, any grower who may happen to have flowering specimens of any plant named by the late Professor, will confer a great benefit on horticultural science by transmitting a specimen for preservation to the Herbarium of the Royal Gardens, Kew. Such specimens should be sent to the Director, Royal Gardens, Kew.

THE JARDIN DES PLANTES.—The Director, Professor CORNU, has issued a list of plants offered in exchange to other botanic gardens and institutions; amongst them are some undetermined species from Tonkin and Yunnan.

"AGRICULTURAL GAZETTE" OF NEW SOUTH WALES.—The May number contains illustrated articles on the grasses of the Colony, by Mr. F. TURNER, Botanist to the Department of Agriculture.

CARDIFF CHRYSANTHEMUM AND FRUIT SHOW will be held on November 18 and 19 next, not on November 11 and 12, as in National Chrysanthemum Society's schedule.

THE AVOCADO PEAR has fruited this season in the open air at Golfe Juan, Nice, and a figure of the fruit is given in the *Revue Horticole*.

THE SHREWSBURY FLOWER SHOW.—The gross receipts of the exhibition from all sources, amounted to the large sum of £3000; including gate-money, on the first day, £351 16s.; and on the second day, £1413 11s.; tickets sold beforehand, £625; subscriptions £400. Fifteen thousand visitors attended on the first day, and 45,000 on the second.

CONTRIBUTIONS FROM THE UNITED STATES NATIONAL HERBARIUM.—The last part contains a list of the plants collected by Dr. EDWARD PALMER in western Mexico and Arizona, drawn up by Mr. J. N. ROSE. Eleven plates illustrate the report. *Tabebuia Palmeri* is a beautiful flowering tree with large Paulownia-like flowers, light mauve at the base with white and yellow patches. The wood of this tree is hard, and is used for building purposes.

MISHAPS TO FLOWER SHOWS.—The Newcastle Show, which was to have been held in the Leazes Park, promised to be a great success, fifty more entries than at any previous show having been received. A terrific gale raged all the previous night, and towards the morning it increased in violence; about 6.30 A.M. the tents were blown over with a terrific crash. The devastation was such, that the whole had to be cleared away. Fortunately, few exhibits were staged. The large Palms, Coniferae, and some hardy trees

and shrubs, had been laid on their sides. A collection of plants from Mr. WATSON of Newcastle, received some damage; but the ruin everywhere to the tents, &c., was so complete that the committee, after holding a meeting on the grounds, at which the Mayor of Newcastle was present, determined not to hold the exhibition in any form. The plants in vans, and fruit, flowers, &c., sent by railway were returned unpacked; and at the time when the judging usually commenced, the torn canvas, split poles, &c., were nearly all packed up ready for removal. The tents at four other local exhibitions in this neighbourhood have been blown down during the last three weeks; but none has been so completely ruined as that of Newcastle-upon-Tyne. The storm raged also along the Irish coast. The annual flower show of the Royal Horticultural Society of Ireland, which was opened on Tuesday, August 25, in Lord IVEAGH'S grounds in Stephen's Green, Dublin, and was to be continued on the following day, was completely ruined by the storm. The grounds presented a sad spectacle, the four large tents in which the exhibits were displayed, being uprooted from their fastenings, and the flowers and fruits scattered about in all directions.

BRITISH FRUIT GROWERS' ASSOCIATION.—At the Conference to be held by the above Association in the Crystal Palace on September 4, at 4 P.M., the subjects for discussion will be—"Pruning," and "Gathering, Packing, and Storing Fruits," to be introduced by practical addresses. At Edinburgh, the Conference is to be held in conjunction with the International Show on the second day, namely, September 10, at 3 P.M. The programme will include an address on the "Present Condition and Prospects of Fruit Culture," "Fruit Culture for Profit in Scotland," "Strawberries for Market," "Gathering, Packing, and Storing Fruits," and several other important subjects. Further particulars can be had on application to the Hon. Secretary, Mr. LEWIS CASTLE, Hotham House, Merton, Surrey.

MR. D. T. FISH.—We hear that our well-known and energetic correspondent, Mr. D. T. FISH, is leaving Hardwicke, the gardens of which he has directed so ably for years, and means to devote his time to the duties of judging at large shows, landscape gardening, and literature, and we and all our readers will heartily wish him abundant success in his new career.

A FLOWER SHOW AT BETHNAL GREEN.—Of all places in which to look for a flower show, Bethnal Green would appear to be one of the most unlikely, and yet a Society known as the East London Amateur Floricultural and Chrysanthemum Society has just been established there, for the purpose of creating a love for and extending the cultivation of flowers in East London. Many agencies are now being set on foot to raise the level of the social life in the East of London, and one of them is the Society just alluded to. Bethnal Green is a great district for cabinet making, and a considerable majority of the members of the Society are engaged in this work; but it is only those who are strictly amateurs who are permitted to compete for prizes. The radius covered by the Society's operations, is about four miles from Bethnal Green Museum in each direction, but of the many plants staged for competition at the first exhibition held on the 24th inst., all came from within a half-mile radius of the Museum; the farthest point west was Brick Lane, and eastward was Globe Road. There are 110 members, and each subscribes half-a-crown annually. The officers and committee are all working-men, managing their own affairs in their own way, and it must be admitted, with considerable promise of success. Many of these working-men have small greenhouses in their back gardens, in which they grow the plants they exhibit. Some of them are very homely structures, with means of artificial heating set up in a rough-and-ready fashion, but suited to the purpose intended. It is during their leisure hours from labour—generally after the day's labour is over, that time is found in which to give attention to the plants. One member in-

formed us that he worked fourteen hours per day, and found refreshment from labour in attending to the few subjects he grows. It is during winter, when the days are short, light wretched, and fogs abounding, that the pressure of difficulties in cultivation are most severely felt, and when the utmost the cultivator can do is necessary to maintain his plants alive. Plants are also grown in windows to a much larger extent than is imagined by any one walking along the main thoroughfares of Bethnal Green. The most striking window-plant shown was a huge Fuchsia trained to a homely trellis in the shape of a tennis hat, just as much as any one could comfortably lift; it was feathered with foliage to the very bottom, and considering the circumstances under which it is grown, well bloomed. In all probability this plant was at least four or five years old. The Fuchsia is the favourite plant of the Eastender; next comes the zonal Pelargonium, and the Paris Marguerite, Chrysanthemum frutescens, but probably being out of bloom, not a specimen put in an appearance. Cannas, in the form of fine plants; Coleus, a few well-flowered examples of *Plumbago capensis*, *Begonias* of the Rex type—one in particular was very good; Lili-um

competition were sent by Mr. SMITH, gardener to S. GARDINER, Esq., Clapton, which included two most remarkable specimens of Webb's Sensation Tomato in pots, bearing magnificent fruit; and some very fine specimens of *Adiantum cuneatum*; a good collection of ornamental-foliaged plants from Mr. WYATT, the gardener at the French Hospital in Victoria Park; and a large and tasteful group from the President, Mr. J. ANDREWS, florist, Cambridge Heath.

PARK SUPERINTENDENTS.—In consequence of the death of Mr. COCHRANE, Mr. MELVILLE has been appointed to the care of Finsbury Park, which, under Mr. COCHRANE'S management, had become well known for good gardening and for the growth of *Chrysanthemums*. Mr. MOORMAN, of Brockley Park, has been appointed in place of Mr. MELVILLE, an account of whose work at Dulwich was given in a recent number. Superintendents are now required for Brockley Park, Lewisham, and for Waterlow Park, Highbury. A small salary and a residence are offered in both cases. Application should be made to the Clerk of the County Council, Spring Gardens, W., before September 13.

fully open, were about twice the size of the largest Nerine bloom, and of a faint lilac-pink shade, with a bluish flush down the centre of each petal; but to describe the flower as blue, as I was informed it was, required a considerable exercise of the imagination. As I had heard from my friend Mr. Baker that A. Halli was only a garden name, and not the correct botanical name of the plant, I sent him one of the flowers for identification, and now hear from him that he has identified it under the second name above given. I consider it to be a plant of merely botanical interest, and of very little merit from a horticultural point of view. *W. E. Gumbleton.*

AN EXTRAORDINARY CROP OF PEACHES.—The largest crop of Peaches which it has ever been my fortune to see, I met with the other day at Whitehall, Hawthornden, Midlothian, the residence of R. G. Warner Ramsay, Esq. The trees were standards growing in a lofty and otherwise roomy span-roofed house. One tree of Bellegarde had a spread of about 16x12 feet, height about 15 feet. It is impossible to say precisely how many fruits this tree bore at the time of my visit, but there could hardly be less than from sixty to seventy dozen. The probability is there were considerably more; the branches were so over-weighted by the crop, that they had to be slung up and supported by wire hooks. A Stirling Castle, of rather smaller size, bore an almost equal weight of crop to that of the Bellegarde. The individual fruit was very fine and large. Many exceeded six ounces in weight, and few were much less than that respectable weight. The colour was superb, and the flavour and texture faultless. Royal George, and others in the same house, also standards, though inferior to the two trees named in point of crop and the size of the fruit, were yet bearing splendid crops. In other compartments of the same range of houses were other Peach trees, trained in the usual way, to trellises, all bearing splendid crops of grand fruit. The exceptional healthiness of the trees was very notable. There was no extreme luxuriance of annual growth; the great crops, which are a yearly occurrence, prevent that, but the compact short-jointed shoots, and the clean shining bark of stems and older limbs, without a vestige of gumming or gnarl of any kind, betokened the most perfect health. The excellent management of Mr. Leyden, who has had charge of the gardens for over twenty years, along with the advantage of a very superior soil, can alone account for such splendid results year after year. *W. S.*

THE POTATO CROP.—In spite of 7° of frost which was experienced on May 17, when the haulm, which was 6 inches high, was cut down to the surface, and nearly a fortnight elapsed before there was the slightest attempt at a secondary growth, the Potato crop is an abundant one—in fact, I never saw the yield better amongst mid-season varieties; but, unfortunately, slight signs of disease are apparent in the tubers. There are so many really first-class cooking varieties, and which at the same time possess excellent flavour, that the wonder to me is, that any other sort is grown. Some people appear to be satisfied, providing the tubers cook well; they never seem to notice the flavour at all. In addition to Sutton's Seedling, Lady Truscott, and Reading Russett, which can always be depended upon for their good qualities, I grew this year Sutton's Fifty-fold; I must say, that for good cropping and cooking qualities, I have not seen its equal as a mid-season variety. It has but a shallow eye, the flesh quite white, and the tubers of good size. I think people generally are now alive to the ill-advised opinion of some in the matter of growing so many kinds of Potatoes. It is more generally found that about six sorts is enough for the largest establishment, where nothing is needed beyond meeting the home consumption. *E. Molyneux.*

THE VARIEGATED ENGLISH ELM.—One of the arboreal features of Ealing at the present time is a variegated English Elm, standing in the private garden of Mr. William Clark, at Ashton House, on the north side of the Green. The tree stands in one corner of the grounds, close to the Green, and some of the branches hang over it. It is a lofty specimen probably nearly a century old; and every portion of it, from the suckers, which are thrown up from the roots, to the top of this splendid tree, have the leaves broadly margined or thickly blotched with white. It is acknowledged to be one of the finest examples of variegation in our common English Elm known; while it is strikingly picturesque and handsome. As to the history of the tree, I can get no information; but, I am told



THE LATE MR. JOSEPH FYE MESTON.

anatum, Petunias, succulents, the Onion Plant of the Londoners, Gloxinias, Castor-oil and India-rubber plants, Musk, *Cyperus alternifolius*, and others, were present, but the Fuchsias largely preponderated, and, on the whole, they were well grown and flowered. There were classes for collections of foliage as well as flowering plants, and groups of miscellaneous plants. There were enough to fill the Oxford Hall, a building connected with the Oxford Mission at the East of London, which was placed at the disposal of the Flower Show Committee, free of charge; and a little hunting and hanging-baskets made the interior quite cheerful, though the light was bad for showing off the flowers to the best advantage. Cut flowers were represented by Dahlias grown at Clapton, also by Asters, Pansies, &c. The best plant selected from the show was one of *Ficus elastica*, shown by W. RICHARDS, a cabinet-maker, so healthy, clean, and well-feathered with leaves to the base of the pot that it would have done credit to any conservatory. Collections of plants not for

HOME CORRESPONDENCE.

AMARYLLIS HALLI OR LYCORIS SQUAMIGERA.—In the month of November, 1887 (as I am informed by my label), I purchased at a comparatively high price, from a leading firm in Haarlem, what purported to be a full size flowering bulb of the above-named plant, which was sent under the first of the two names above cited. I was given to understand that the plant was a hardy *Amaryllis* from North China, with blue flowers. During the three intervening summers my bulb, much to my disappointment, only produced each year from eight to ten strap-like leaves, and no following bloom spike in the autumn, as I, each year, expected it to do, so that I almost began to despair of ever seeing what its supposed flower was like. About the middle of July of this year, however, it produced a fine healthy flower-spike, which quickly grew to the height of 2 feet, and exactly resembled in appearance that of a strong-growing Nerine. There were five flowers on the spike, which, when

by old inhabitants, that many years ago, when Ealing was the village Thack-ray knew as a school-boy, and before modern Ealing was commenced, a brook ran along by the side of this Elm, and there is reason to believe it is an accidental seedling. The most remarkable feature about it is, that until I called attention to the existence of this tree in our local paper, last year, no one appeared to have noticed its existence. By the side of the tree is the Ealing Liberal Club, and anyone standing upon the balcony to the first floor windows can see this beautiful Elm to the best advantage. It is, in all probability one of the finest pictorial trees in the county of Middlesex. *R. Dean.*

CRINUM MOOREI ALBUM—I read with pleasure that the bulb of a Crinum which was given me in Madeira four years ago under the name of *C. giganteum* has bloomed in the cold frame at Kew, and is now rightly named *C. Moorei album* or Schmidtii. This bulb, which I gave to Kew last year, is a most interesting example of the power of adaptation to circumstances that some organisations possess. In Madeira this bulb rests during the heat and drought of the summer in Funchal, and grows and flowers during the winter and spring—conditions not much unlike our summer. For the first two years that I grew it, it started into growth in autumn, and consequently required heat to keep it vigorous at such a season, and it did not flower. The third year it started into growth in January, and flowered in June, and went to rest in August, when I sent it to Kew, where it must have been in a dormant state till late this spring. The fact of its blooming in May and June, and in Madeira in March or earlier, coupled with the belief that this Crinum came to Madeira from the Gold Coast, made me hesitate to believe it could possibly be a form of *C. Moorei*, in spite of the exact resemblance in growth and shape of flower—hence one good reason for sending it to the authorities at Kew. A grand clump of this fine Crinum in a Madeira garden, with thirty spikes of its snow-white blossoms on long stalks above the bright green foliage, was so beautiful a sight that I asked for a bulb, never dreaming it could be possible for such a magnificent Lily to be hardy, or nearly so, in England, and I am consequently equally surprised and pleased to know it is a white form of the hardy Crinum Moorei, which will grow and flower wherever the *Amaryllis Belladonna* thrives. *Edward H. Woodall, Scarborough.*

FERNS AT COLWYN BAY.—The following list of Ferns, which survived last winter, may be useful to cultivators of hardy Ferns. The most injurious frost that we had was 17° without snow. The *Todeas* are planted in peat by the side of a small stream, and overhung by a Portugal Laurel bush, and they had a few branches of Laurel stuck in the ground amongst them. *Hypolepis millefolium*—sometimes erroneously sold as *Hypolepis anhriscifolia*—is an exceedingly pretty species, which is running all over the fernery, threatening to become a nuisance. I have not included British species:—

<i>Onclea sensibilis</i>	<i>Polystichum acrostichoides</i>
" (<i>Struthiopteris</i>) <i>germanica</i>	" <i>manitum</i>
<i>Dennstaedtia davallioides</i>	" <i>fulvum</i>
<i>Microllepia strigosa</i>	" <i>lepidocaulon</i>
<i>Cystopteris bulbifera</i>	" <i>vestitum</i>
<i>Hypolepis millefolium</i>	" <i>setosum</i>
<i>Lomaria nuda</i> (?)	<i>Lactaria atrata</i>
" <i>fluviatilis</i>	" <i>acuminata</i>
" <i>protera</i>	" <i>decomposita</i>
" var. <i>Chilensis</i>	<i>Osmunda cinnamomea</i>
<i>Woodwardia radicans</i>	" <i>Claytoniana</i>
<i>Asplenium angustifolium</i>	" <i>gracilis</i>
<i>Polystichum concavum</i> (= <i>Lastrea Standishii</i>)	<i>Todea superba</i>
	" <i>pellucida</i>

A. D. Walker, Nant-y-Glyn, Colwyn Bay.

SUMMER PRUNING CURRANT BUSHES.—If it were necessary, another season has fully proved to me the advantage gained by the summer pruning or pinching of the shoots of the Currant in assisting the ripening of the fruit. Red Currants especially receive attention in this respect: the branches are limited to about ten to each tree; each of these are from 4 to 5 feet long, so it can easily be imagined there is plenty of space between the branches. The bushes grow freely, and bear heavy crops of fruit the whole length of the branches every year without fail. Much of this I attribute to the thorough maturation of the wood and buds, which is attained through the action of the sun on the branches. About the second week in June we commence to cut off all shoots to within about three eyes from the base, which enables the energy of the tree to be concentrated in the swelling of the fruit. There is another excellent reason for

the summer-pruning of Currant bushes—the fruit is much cleaner by being thoroughly washed by the rains, which improves the berries considerably in appearance. *E. M.*

A WHITE FLOWERED CENTAUREA NIGRA.—I send you some flowers of the white *Centaurea nigra*. The original plant was found in the midst of the common Hardhead in a field near here. In the borders here this white variety flowers until winter. Has it been noticed before? *William Foster, Stroud, Gloucester-hire.*

THE WAR OF THE ROSES.—Mr. Leadman, in his account of Yorkshire battles, *Prælia Eboracensia*, after describing the terrible conduct at Towton on Palm Sunday, 1461, says, "I cannot conclude the story of Towton without allusion to the little dwarf bushes peculiar to the field of the White Roses and the Red. They are said to have been plentiful at the commencement of the century, but visitors have taken them away in such numbers that they have now become rare. The plants are said to be unique, and unable to exist in any other soil. The little Roses are white with a red spot on the centre of each petal; as they grow old, the under surface of the petal becomes a dull red colour." This is most likely a very dwarf or stunted variety of *Rosa canina*, or the Dog Rose, which is indigenous to Britain; but it may be doubted as to this particular variety being confined to the field of the white Rose and the red. It might, however, be interesting to many could farther information respecting these Rose bushes be obtained, and this may possibly be furnished by some of the numerous readers of the *Gardeners' Chronicle* who may reside near to, or who may have recently visited this celebrated battle-field. *P. G.*

PEACH AMSDEN JUNE.—This Peach, an introduction from America, is making a great reputation in the West of England as an early variety, coming in several days before Hale's Early, also an American variety. Fruit growers in the Bath district, like Mr. S. J. Pavitt and Mr. George Cooling, speak in the highest terms of it, both as to its earliness and quality. Mr. Pavitt stated that this season he gathered fine fruit from a tree on a west wall the first week in July, and that notwithstanding the late cold season. He thinks that, given the usual warm early summer weather at the end of May and in June, it would be possible to gather thoroughly ripe fruit by the third and fourth weeks in the latter month. It has a fine sweet flavour, comes large and handsome; the tree is a free grower, and it bears freely. The Bath Peach-growers praise it highly, and predict for it a great popularity. *R. D.*

LILIUM AURATUM.—I saw, last week, two bulbs of this Lily, both planted this season, and each having two stems; and one bulb had forty-five, and the other eighty-four blooms. *H. G. Brulford, Clapton.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 25.—The attendance of Fellows of the Society and the general public at the Drill Hall, James Street, Westminster, could only by courtesy be called a good one, although the exhibits were such as generally appeal to the popular fancy. Dahlias and Gladioli formed the chief features, and together they made a brilliant display.

The Rev. H. Honeywood D'Ombraïn gave a concise lecture upon "Gladioli." It was of a practical nature, dealing with preparation of soil, planting of bulbs, and staking of flowers. He recommended the bulbs to be deprived of their outer-coats before planting, and then to be divided into two, leaving an eye to each half. All the flowers which Mr. Flower exhibited were from cut bulbs, as also were those shown by the lecturer last year at the Crystal Palace. In his opinion, the varieties of French and English origin were equally good. A discussion followed upon the cause of the disease; much difference of opinion existed, and no remedy was suggested.

Orchid Committee.

Present: Mr. James Douglas, in the chair; James O'Brien, Secretary; and Messrs. E. Hill, H. Ballantine, H. M. Pollett, and Dr. Maxwell T. Masters.

Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), exhibited *Laelia elegans Bleheimensis*, a fine form of the *L. e. Tur-*

neri section, but with a broad labellum, the side lobes and the front of which is of a clear rosy-crimson. Mr. Statter also sent cut spikes of three other forms of *L. elegans*, also *Laelia amanda*, *Cypripedium Morganæ* × *Odontoglossum Harryanum*, and *Dendrobium Dearei*, for which a vote of thanks was passed.

Messrs. James Veitch & Sons, Royal Exotic Nursery, sent their new hybrid, *Laelio-Cattleya Nysa* × (*C. labiata Warscewiczii* (gigas) × *Laelia crispata*). The segments are pale lilac, the front of the labellum dark crimson, and presenting some of the features of *Laelio-Cattleya exoniensis*. The plant being weak, the committee requested to see it again. They also sent a specimen of *Cypripedium Cleola* × (*C. reticulatum* × *Schlimii albiflorum*).

G. Palmer, Esq., Springfield, staged *Cypripedium apiculatum* × *Springfield* var. (*Boxalli barbatum*), which seemed to be rather darker in colour than the original form.

Messrs. F. Sander & Co., St. Albans, exhibited *Laelio-Cattleya hybrida Behrensiana* (*Laelia elegans* × *Cattleya Loddigesii*). The habit of the plant resembles that of *Cattleya superba*; the flowers are large, sepals and petals bluish-white; the front lobe of the lip broad and flat, and of a bright rosy-crimson. Messrs. Sander also showed *Masdevallia Measuriesiana* × (*M. amabilis* × *M. tovarensis*), a small variety with a slender, twin-flowered stipe of white flowers tinged with rose.

R. J. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr., Mr. H. Simpkins), sent examples of *Cypripedium leucochilum* and *C. tortile*, both provisionally named. The former is supposed to be a natural hybrid between *C. Godefroyæ* and *C. bellatulum*, and the latter a new species from Dutch East Indies; it resembled a small form of *C. philippinense*, but with shorter and more twisted petals. The Committee requested that these be referred to Kew.

Malcolm S. Cooke, Esq., Kingston Hill (gr., Mr. Callimore), sent a cut spike of a fine form of *Cattleya velutina*, and three varieties of *Laelia elegans* Turnerii.

F. Wigan, Esq., Clare Lawn, East Sheen (gr., Mr. W. H. Young), staged *Aerides suavisimum*.

Mr. J. Prewett, Swiss Nursery, Hammersmith, sent a well-grown plant of *Dendrobium Phaleopsis Statterianum*.

Messrs. Charlesworth, Shuttleworth & Co. exhibited *Zygopetalum grandiflorum* (*Datemanilla grandiflora*), a curious and handsome species, with greenish sepals and petals, striped with chocolate, and white fringed lip.

Messrs. Seeger & Tropp, 112, Lordship Lane, East Dulwich, showed a plant of *Sobralia leucoanthera*, segments reflexed, pure waxy-white, and the front of labellum yellow. C. J. Lucas, Esq., Warnham Court, Horsham, sent *Dendrobium undulatum*. Mr. Jas. Douglas, The Gardens, Great Gearys, Hoard, showed a cut spike of *Cypripedium Lowianum* with six flowers.

Floral Committee.

PRESENT:—W. Marshall, Esq., in the chair; and Messrs. H. Herbst, G. Phippen, George Nicholson, H. C. Leach, Charles Turner, W. Goldring, B. Wynne, R. Dean, Henry Cannell, Charles Jeffries, Thomas Baines, Wm. Bam, Charles E. Pearson, William Ingram, Charles Noble, John Fraser, William Hy. Williams, James Walker, and Rev. H. Honeywood D'Ombraïn.

A Silver Banksian Medal was awarded to Messrs. Hugh Low & Co., Clapton, for a collection of Lilies, including a beautiful box of *Lilium ochroleucum* (syn. *Wallichianum superbum*), trumpet-shaped, cream, with golden centre; also *L. nepalense*, yellow, shaded with brown.

Messrs. J. Veitch & Son, Chelsea, exhibited baskets of *Eucryphia pinnatifolia* and *Colletia spinosa*, both full of white flowers; also *Retinospora squarrosa sulphurea*, a variety with young growths sulphur-colored; *Cupressus arizonica*, with glaucous, loose feathery branches; *C. Lawsoniana versicolor*, white and gold variegation; hybrids of *Rhododendron japonico-jasminiflorum*, a lot of attractive colours, among them being Dante, chrome yellow; Thetis, fawn; and Imogene, cream colour.

C. E. Smith, Esq., Silvermere, Cobham, Surrey (gr., Mr. Quarterman), had a collection of thirty-six varieties of Oak, chiefly seedlings of *rubra*, *coccinea*, *nigra*, and *robur*; for this interesting lot a Bronze Banksian Medal was awarded.

Mr. Anthony Waterer, Knapp Hill, exhibited *Hypericum Moserianum* ×, flowers rich yellow, good substance, anthers crimson.

Messrs. Wallace & Co., Colchester, obtained a Bronze Banksian Medal for a collection of Lilies, consisting of *Lilium eximium* var. *giganteum*, *L. e.* var. *magnificum*, large pure white flowers, segments reflexed, tube 8 inches long; and *L. Takesima*, white tubular flowers, pointed petals.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had a collection of hardy flowers, including Carnation *La Neige*, pure white fringed flowers, slightly scented (Award of Merit); *Lilium ochroleucum*, and *L. auratum platyphyllum*, like the type, but without spots; and *L. a. rubro vittatum*, with deep crimson band.

Messrs. Dicksons, of Chester, exhibited four new border Carnations, viz., Mr. C. R. Humbert, rich crimson-scarlet (Award of Merit); Miss Greenall, rose-scarlet, well formed; and Mrs. C. R. Humbert and Lady Gerard, both pink flowers.

Mr. Campbell, Lord Street, Southport, had a nice form of *Scolopendrium vulgare* var. *Campbelli*, with corrugated margin.

J. T. Hopwood, Esq., Ketton Hall, Stamford (gr., Mr. W. H. Divers), was awarded a Bronze Banksian Medal for a varied collection of Carnations, of which Ketton Rose, a rose variety with shell-shaped petals, was conspicuous.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, showed *Crinum Powellii*, with umbels of large pink flowers; *Cyrtanthus hybrida rosea*, brilliant umbels of vermilion scarlet.

Rev. W. Wilks brought a hardy Geranium, Shirley Blue, many with white centre.

DAHLIAS formed quite a leading feature, and a large number of blooms were staged. Foremost was a very fine white self show flower, from Mr. John Walker, nurseryman, Thame, pure white, of fine outline, and good centre, named John Walker (Award of Merit). Mr. Arthur Rawlings, florist, Romford, staged a number of new varieties—Arthur Ocock, orange-red, bright, fine shape (Award of Merit); Mrs. McIntosh, in fine character, orange-yellow, with a rosy-erise reverse (Award of Merit); John Rawlings, a soft bright lilac self, very pleasing (Award of Merit); Mrs. Lewis Standbridge, buff-yellow self, very bright, and of fine shape (Award of Merit); George Hurst, crimson-maroon, flushed with purple; Mrs. Hurst, a light variety, in the way of Queen of the Belgians; George Gordon, bright crimson; and Mrs. Ocock, yellow, edged with orange-brown. Mr. S. Mortimer, nurseryman, Farham Sarrey, had a collection of seventy-two very fine show varieties, large handsome flowers, of considerable merit.

Messrs. J. Cheal & Sons, Lowfield Nurseries, had a collection of show, single Cactus, and Pompon varieties. Among the singles were some new-edged flowers of great merit, viz., T. W. Girdlestone, white, with margins of bright purplish-crimson, medium size and excellent shape (Award of Merit); Miss Glasscock, silvery white, with side edgings of soft lilac purple, very pretty and distinct (Award of Merit); Cleopatra, crimson, shaded with maroon, somewhat novel in character; Claudia, in the way of Duchess of Albany, but scarcely so good; and Duchess of Fife, pale orange, with slight shadings of orange-red; and of Cactus and decorative varieties, Lady Masham, Black Prince, very dark; Zulu, Beauty of Arundel, and Duke of Clarence. Messrs. Keynes, Williams & Co., nurserymen, Salisbury, had a collection of sixty blooms of very fine show varieties; some pretty Pompons, including Lillian, a very pretty pink-margined variety; and some surprisingly good new varieties of the true Cactus type, such as St. Catherine, deep yellow, the lower petals tinted with brownish yellow, extra fine, and distinct (Award of Merit); Kynarith, bright deep shaded scarlet, of the best Cactus type, extra fine (Award of Merit); Baron Schroder, bright crimson, shaded with magenta, also very fine (Award of Merit); and the collection also included Honoria, Panthea, Harry Freeman, white, Robert Maher, yellow, &c. From Messrs. Henry Cannell & Son, nurserymen, came a very good collection of Cactus and decorative Dahlias, including Robert Cannell, one of the most distinct of the true Cactus type yet introduced, bright rosy crimson, flushed with magenta, the petals numerous, well arranged, and somewhat grided or curled (Award of Merit); Swanley Cactus, pale orange yellow, extra fine (Award of Merit); Ernest Cannell, soft rosy peach; Beauty of Arundel, crimson and purple; Cannell's Favourite, orange yellow; Panthea, and other attractive varieties. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had *Delicata*, one of the true Cactus type, soft pink, with slight yellow centre (Award of Merit); F. J. Taylor, orange-crimson, very bright; and two or three new Pompon varieties,

very pretty, but a little large. From Mr. G. Phippen, nurseryman, Reading, came a number of floral shields of Cactus and decorative Dahlias, about twenty in all, and containing from fifteen to twenty flowers each; they made quite an imposing display. In addition, Messrs. J. Cheal & Sons had a number of plants of Mr. Girdlestone's Tom Thumb single Dahlias, which are probably a little too dwarf to find much public favour.

GLADIOLI.—A fine collection of spikes, staged by Messrs. Kelway & Son, of Langport, about 160 in all, including many new varieties, and some very fine forms of the Lemoinei section; *Thalia*, pale sulphur-white, each segment having a large blotch of bright pease-purple, was very fine and distinct (Award of Merit); they also had—the Rev. W. Wilks, a fine light variety, flaked with pale purple; Henry Cannell, light, flaked rosy-crimson; Solon, pale salmon-scarlet; James Payn, bright salmon-scarlet; Chilio, light sulphur and purple, &c. Mr. W. H. Flower, Claremont, Taunton, a well-known West of England amateur, had a collection of twenty-four fine spikes; and the Rev. H. H. D'Ombra, nine fine spikes; while some hybrids of G. Lemoinei came from Mr. G. C. Powell.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. Robert Hogg, George Bunyard, J. Cheal, William Warren, R. D. Blackmore, J. Wright, T. J. Saltmarsh, Alex. Dean, G. Norman, G. Wythes, H. Balderson, W. Bates, F. J. Lane.

A vote of thanks was passed to W. Roupell, Esq., Harvey Lodge, Streatham Hill, S.W., for four dishes of finely-coloured early dessert Apples, viz., Mr. Gladstone, Irish Peach, Devonshire Quarrenden, and Red Astracan.

Messrs. Laxton Bros, Bedford, showed a new Apple, Harvest Queen, from Mr. Gladstone × Early Julien, similar to Mr. Gladstone, but paler and angular, like Early Julien.

Messrs. Thomas Barton & Sons, Bexley Heath, Kent, were awarded a vote of thanks for collection of Peaches packed for market, consisting of Princess of Wales, Barrington, Sea Eagle, and Gladstone.

Seedling Melons came from Miss Sullivan, Broom House, Fulham, gr Mr. Wilson; also from Duke of Northumberland, Ston House, Brentford (gr. Mr. G. Wythes); and from R. Butler, Esq., Westby Hall, Bury St. Edmunds (gr. Mr. Alfred B. Shop).

Messrs. Sutton & Sons, Reading, had samples of a new Bean, Tender and True, a runner, with long slender pods, like the French Bean; this was referred to the Chiswick trials for report.

WILTS HORTICULTURAL.

AUGUST 12.—This Society held its annual exhibition of plants, cut flowers, fruit, and vegetables, in the Bishop's Palace grounds, Salisbury, on the above date, and was one of the best, if not the very best, hitherto held by the Society.

Plants.—These were well shown. Mr. Finch, gr. to James Marriott, Esq., Coventry, and a new exhibitor at Salisbury, was 1st in the class for twelve stove and greenhouse plants, distinct, six foliage and six flowering, staging grand plants of, among others, *Kentia Fosteriana*, *Cycas circinalis*, *Latania borbonica*, *Ixora Wilhamsii*, of great size, and covered with large trusses of bright scarlet flowers; *Erica jasminiflora alba*, and *E. lilyana*. Four lots were staged.

In the class for nine stove and greenhouse plants, four in bloom and five foliage, Mr. J. Curry, gr. to Col. Pepper, Milford Hill, Salisbury, was 1st, his nine including a well-flowered *Erica Macnabiana*; Mr. W. Peel, gr. to Miss Todd, Shirley, Southampton, was a good 2nd.

Mr. Wilkins was 1st for six exotic Ferns, staging immense plants, in fine condition, of *Gymnogramma lanceana gigantea*, *Adiantum cuneatum*, *Microlepia birta cristata*, *Davallia Mooreana*, *D. Polyantha*, and *Adiantum Farleyense*.

Groups.—These were quite a feature in the show, no less than twenty-one being arranged. In the two most important classes, the arrangements were pretty much in the same light and effective style, plants of various kinds being placed at short intervals in a groundwork of Maidenhair Fern, the whole being fringed by *Panicum variegatum* and *Isiopsis gracilis*; and in some cases the dwarf variegated-leaved *Caladium argyrites* was used by itself with good effect, so that the quality and suitability of the plants composing the respective groups decided the relative positions of the exhibitors. For the Earl of Radnor's prize for a group covering a semi-circle of 12 feet in diameter, Mr. Wilkins was 1st, out of five capital

arrangements; a fine spike of *Ocimum incurvum*, showing to great advantage in the centre of his group, in which were also conspicuous nicely-flowered plants of *Cattleya Gaskelliana*, *Dendrobium formosum*, &c. Mr. Curry was 2nd. Eight good groups were arranged for Messrs. Keynes, Williams & Co.'s prize, the space to be covered being a semi-circle of 10 feet in diameter. This prize was also secured by Mr. Wilkins.

Fruit made good display, and was shown in fine condition. Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, secured premier honour in the class for a collection of eight kinds, staging good bunches of Muscat of Alexandria and Alnwick seedling Grapes, Queen Pine, Sea Eagle Peaches, Elong Nectarines, Moor Park Apricot, Lockinge Hero Melon, and Brown Turkey Figs—a good all round lot. Mr. Ingfield, gr. to Sir John Kelk, Bart., Tedworth House, Marlborough, was a good 2nd, his Black Hamburgh and Muscat Grapes and Waburton Admirable Peaches being extra fine. Mr. Ward had the best Pine-apple, and Mr. Budd, gr. to F. G. Dalgely, Esq., Lockerly Hall, Romsey, had the 2nd best, both staging bright fruits of the Queen variety. Grapes.—Out of seven good stands of three bunches of Muscat of Alexandria, Mr. Ingfield dealt with handsomely well-coloured bunches, being followed by Mr. Watson, gr. to Ashley Dodd, Esq., Seaton House, Coddford, and Mr. Budd.

In the corresponding class for Black Hamburgs, Mr. Ingfield was to the front again in a like competition, being hardly pressed by Mr. C. Warden, Clarendon Park Gardens, Salisbury, both showing well-arranged bunches of good shape and perfect finish; Mr. Holloway, Down Grange, Basingstoke, being a good 3rd. Mr. Warden was 1st in the another black Grape class, staging medium-sized bunches of Madresfield Court, in fine condition as regards shape and finish.

In the any other white than Muscat class, Mr. Brown, gr. to the Rev. Sir Tabot Baker, Bart., Blandford, had the best stand out of five, being closely followed by Mr. Warden, both staging good bunches of bright-berried Buckland Sweetwater. Mr. Holloway had the best flavoured Melon out of twelve staged in a Lockinge Hero. Messrs. Ingfield and Macarlane showed the best Peaches, staging grand fruits of Waburton Admirable and Barrington; Messrs. Budd and Ward taking 1st and 2nd honours for Nectarines. Mr. F. Smith, gr. to the Lord Bishop, was 1st for three dishes of dessert Apples, with clean even fruits of Beauty of Bath, Irish Peach, and Worcester Pearmain; Mr. Browning staging the best three dishes of culinary Apples—Alexander, Frogmore Prolific, and Lane's Prince Albert, Mr. Smith being a good 2nd. The same exhibitors occupied the same positions for four dishes of Pears.

Vegetables.—Two good collections of twelve kinds were staged by Mr. Ingfield and Mr. Wilkins, who took the prizes in the order in which their names appear.

Medals.—Two medals, offered respectively by Messrs. W. Wood & Son, Wool Green, London, and the proprietors of the *Gardeners' Magazine* for cultural skill, were awarded to Mr. H. W. Ward, for his collection of fruit; and to Mr. Finch, for his grand dozen of foliage and flowering stove and greenhouse plants.

Non-competitive Exhibits.—Messrs. Keynes, Williams & Co., made a fine show of Dahlias, Gladioli, and Roses—two acoes, about 7 feet high, and 18 inches wide, crossing each other, covered with moss in which Roses in great variety were thickly inter-d, being parished with their own foliage; this artistic arrangement of the celebrated Castle Street firm being in the centre of one of the large tents was greatly admired.

The well-known Exeter firm of Messrs. Robert Veitch & Son made a good show with cut flowers of herbaceous plants in great variety, which, being taste fully staged, made quite a telling display, and was much admired; as also were exhibits of a similar description staged by Mr. Latham, of Salisbury; and the stands of cut blooms of tuberous-rooted Begonias of great size and variety, both double and single, most effectively staged by Mr. Davis, of Yeovil, commanded great attention from visitors.

Mr. Warden staged six handsome and well-netted Melons of the Coqueror of Europe type.

TROWBRIDGE HORTICULTURAL.

AUGUST 19.—The forty-second exhibition of this Society showed no falling off in extent, or in the

quality of the exhibits; indeed, in respect of the latter, it was higher in several respects. The fine specimen *Fuchsias* would have been better in another week; as they were grown in the open air, sunshine was required to get them fully into flower. The tents were arranged as usual in the field near the station, and, thanks to a generous donor, it has been vested in the hands of trustees as a site for the show in perpetuity.

Stove and Greenhouse Plants were well shown in nines, sixes, and threes. In the larger class, Mr. G. Tucker, gr. to Major W. P. Clark, Trowbridge, was 1st, with a very good lot, comprising a remarkably fine *Eucharis amazonica*; Mr. H. Matthews, gr. to W. H. Brown, Esq., Trowbridge, was 2nd, with very good plants. Mr. J. Hiscox, gr. to E. B. Rodway, Esq., Trowbridge, was 1st, with six; he also staged a very fine *Eucharis amazonica*; Mr. H. Pocock, gr. to J. P. Haden, Esq., Trowbridge, was 2nd. Mr. G. Pymm, gr. to Mrs. Gouldsmith, Trowbridge, had the best three; Mr. Hiscox taking 2nd place. The best specimen plant was a fine *Erica*, from Mr. J. F. Mould, nurseryman, Pewsey; Mr. Hiscox taking 2nd place with *Stephanotis floribunda*.

Orchids, shown in collections of four, were decidedly good. Mr. H. Matthews was 1st, with three forms of *Phalaenopsis*, viz., *amabilis*, *grandiflora*, and *Schilleriana*, and *Cattleya Gaskelliana delicata*; Mr. G. Pymm was 2nd, with *Cattleyas Gaskelliana*, *Loddigesii*, and *Leopoldi*, and with a nice piece of *Vanda suavis*.

Next in importance came the *Fuchsias*, and the champion grower, Mr. J. Lye, gr. to the Hon. Mrs. Hay, Clyffe Hall, Market Lavington, was placed 1st, with six plants, grown in fine condition; the varieties *Charming*, *Abundance*, *Rival*, and *Doel's Favourite*, dark; *Duchess of Fife*, a new and highly promising double white corolla variety, wonderfully free; and *Mrs. Bright*; five of the foregoing were of Mr. Lye's own raising. Mr. Thos. Edwards, gr. to J. D. Knight, Esq., Trowbridge, was 2nd, he had of dark varieties—*Charming Thomas King*, *Abundance*, and *Elegance*, all raised by Mr. Lye, and *Arabella* and *Marginata*, light. Mr. H. Pocock had the best four, staging *Abundance* and *Charming*, dark; *Mrs. Bright* and *Arabella*, light. Mr. J. Lye came 2nd with *Charming*, *Elegance*, and *Abundance*, dark; and *Wiltshire Beauty*, light. *Charming* is one of the most valuable decorative *Fuchsias* ever raised.

Begonias were another fine feature, and here Mr. C. Richman, gr. to G. L. Palmer, Esq., Trowbridge, was 1st with six single and also with six double varieties, having admirable plants in each case. Mr. G. Tucker was 2nd in both classes.

Other flowering plants included *Heaths*, well shown by Mr. J. F. Mould; *Gloxinias*, very fine indeed for the season of the year, from Mr. C. Richman; *Achimenes*, *Zonal Pelargoniums* (always finely shown at Trowbridge), *Cockscombs*, *Balsams*, *Petunias*, &c.

Foliage plants were shown in collections of nine, by Mr. J. Currey, gr. to Col. Pepper, of Salisbury, and Mr. G. Tucker. There were good *Caladiums* and *Coleus*, some plants of the latter shown by Mr. H. Matthews were grandly grown. Collections of *Ferns* and *Mosses* in groups of fifteen are another leading feature at Trowbridge, where golden and silver *Gymnogrammas* are grown as well as in any other part of the country. The best collection came from Mr. G. Tucker; Mr. H. Pocock coming a good 2nd.

There is always an excellent display of cut flowers. *Roses* were well shown in twenty-four single blooms, and twelve varieties, three trusses of each, in the open division. Dr. Budd was 1st with twenty-four varieties; Mr. W. Narroway, Oxford, was 2nd.

In the class for twelve trebles, Dr. Budd was again 1st, in both cases showing in fine form. Dr. Budd was also 1st with twelve trebles and twelve blooms in the amateurs' division. *Dahlias* are always seen in good character at Trowbridge, and this exhibition may be said to open the *Dahlia* season. Messrs. Keynes, Williams & Co., Salisbury, had the best twenty-four varieties, showing excellent flowers; and Mr. G. Humphries, florist, Chippenham, was 2nd. In the class for twelve varieties, Mr. S. Cooper, Chippenham, was 1st, and Mr. W. Smith, Kingswood Hill, Bristol, 2nd. Mr. G. Humphries had the best twelve fancies; and Messrs. Keynes, Williams & Co., 2nd. The blooms were very much better in the foregoing classes than we could have expected. Mr. Trinkle, gr. to T. Carr, Esq., Esq., Tiverton, had the best twelve bunches of single *Dahlias*—a remarkable good collection, admirably staged, and Messrs. Keynes & Co., the same number of bunches of *Pompon* varieties; Mr. G. Humphries was 2nd.

Messrs. Keynes & Co. had a fine lot of new varieties of the true *Cactus* that will be seen again

later on, and a very pretty new *Pompon* variety named *Lolian*. Bunches of cut flowers in twenty-four varieties: German and French *Asters*, hardy *Annuals*, *Carnations*, and *Picotees*, very good indeed; owing to the lateness of the season, were all very attractive features.

Fruit was shown extensively, and of good quality. The best collection of ten varieties came from Mr. A. Miller, gr. to W. Long, Esq., M.P., Rood Ashton, Trowbridge, who had good *Alicante*, *Lady Down's*, and *Foster's Seedling Grapes*; *Dymond Peach Pine-apple*, and *Stanwick Elruge Nectarines*; *Brown Turkey Figs*; *Beauty of Bath Apple*, &c.; 2nd, Mr. J. Gibson, gr. to Earl Cowley, Chippenham, who had *Madresfield Court* and *Black Hamburg Grapes*, good *Peaches*, &c. Mr. G. Pymm had the best six dishes, staging *Black Hamburg* and *Foster's Seedling Grapes*, very fine *Pineapple Nectarines*, *Royal George Peaches*, *Moor Park Apricot*, and *Countess Melon*; Mr. W. Haskell, Melksham, was 2nd.

The best *Grapes* in the class for two bunches of black were *Alicante* from Mr. W. Murch, of Bath, remarkable for size and finish, they having been taken from a pot Vine; Mr. A. Miller was 2nd. *Buckland Sweetwater* was the best white Grape. Good white *Muscats* were shown, and the black *Muscats* were *Madresfield Court*. The best *Peaches* were *Violet Hatte* and *Barrington*; the best *Nectarines*, *Pitmaston Orange* and *Stanwick Elruge*. The best *Plums*, *Kirk's Greengage* as black, and *Washington*, as white. The best *Cherries*, *Big-gareau* and *Circassian*. The best *desert Apples*, *Gladstone*, *Beauty of Bath*, and *Irish Peach*. The best *culinary*, *Lord Suffield*, *Ecklinville*, and *Lord Derby*. The best *Pear*, *Jargonelle*.

Table decorations of flowers only, also of fruit and flowers, memorial wreaths, bouquets, &c., were in strong force, and good all round. Collections of wild flowers, and bouquets of the same, were admirably staged.

Vegetables were very extensive, and a great feature. A very large number were staged, and it would not be too much to say Trowbridge could challenge any other district of the country for quality.

The *Gardeners' Magazine* Medal for special excellence was awarded to Mr. George Pymm for a dish of superb *Pine-apple Nectarine*.

THE ARBORICULTURAL SOCIETY OF ENGLAND.

The meeting at Hexham on Wednesday, August 19, was a most successful one, thanks in no small measure to the skilled tree-growers of the locality who have taken part in it. There is the president-elect, Mr. J. M. Ridley, of Walwick Hall. The excursion that was organised for the second day had in view the commercial aspects of forestry, whereas that of the preceding day was concerned with ornamental tree-growing.

The woods of Healey, as Mr. Jewitt of that place explained, are a flourishing illustration of successful afforestation. He pointed out that when the late Mr. Ormiston bought Healey there was little or no wood upon it. He, however, caused it to be planted out wherever practicable, and to the extent of about half of the land. Moreover, before he died, he saw the first growth of trees cut down and the land replanted. Of the timber sold the gross receipts amounted to £56,000. "This," as Mr. Jewitt truly observed, "might be reckoned a very large amount to be taken off an estate which had originally cost about £22,000." But the trees grow when the planter sleeps as when he wakes.

The Second Day's Excursion.—The party, after breakfasting at the Royal Hotel, Hexham, at half-past eight o'clock, set out in carriages for the Duke's House, the residence of Mrs. Backhouse, to inspect the woods on that lady's estate. The next move was to the extensive woods at Dipton, belonging to the Duke of Northumberland, after which the party drove to the estate of Mr. W. Warde-Aldane at Healey, and that of Mr. Henry T. Silvertop at Ministeracres. The next place visited was the estate of Mr. J. W. Walton-Wilson at Shotley. While yesterday's visit was very interesting, it was more an inspection of ornamental trees, &c.; but to-day's excursion was to woods and forests that would demonstrate the desirability of planting lands of small agricultural value, one of the objects of the society being to bring about the partial restoration of the woods and forests with which it is believed every "shire" in this country was at one time so well provided.

REPORTS OF THE FOLLOWING SOCIETIES HAVE BEEN RECEIVED.

Royal Horticultural of Aberdeen; Basingstoke, National Carnation and Picotee (Annual Report), North of Scotland Apiarian, Moor Park, Devon and Exeter, Trentham.

TRADE NOTICE.

MESSRS. J. & W. HERD BROTHERS have purchased the well-known nursery and seed business established in 1810 in Penrith by the late Mr. Jos. Tremble. Both brothers commenced their business career in the establishment of Messrs. Little & Ballantyne, Carlisle. Mr. J. Herd has been well known for the past six years in connection with the firm of Dicksons & Co., Edinburgh; and Mr. W. Herd has been equally well known in connection with the firms of Dicksons & Co., Chester, and W. Fell & Co., Hexham, for a number of years past.

ORCHIDS AT SHREWSBURY.—Owing to the great crush in the exhibition tents on the occasion of the show on the 19th and 20th inst., and reported in our last, a fine bank of Orchids staged by Mr. J. Cypher, Cheltenham, escaped the notice of our reporter until it was too late to rectify the omission. They consisted of admirably-grown and flowered plants of *Cattleya crispa*, *C. superba*, *C. Gaskelliana*, *C. Warnerii*, *C. speciosissima*, *C. Mossiae*, *Backhousiana*, *Odontoglossum Harryanum*, *O. Alexandra*, *O. Lindleyana*, *O. Pescatorei*, *Miltonia vexillaria*, *Masdevallia Harryana*, *M. trochilus*, *M. Schlimii*, *M. Veitchii grandiflora*, *M. Reichenbachiana*, *Ocidium cucullatum*, *O. c. giganteum*, *O. macranthum*, *O. incurvum*, *O. pretextum*, *Lælia cinnabarina*, *Cypripedium barbatum*, *C. Lawrenceanum*, *C. Stonei*, *C. Rzepli*, *C. niveum*, *C. Harrisianum*, *C. Curtisii*, *C. longifolium*, *Aerides Robaniana*, *Epidendrum vitellinum*, *E. prismatocarpum*, *Dendrobium filiforme*, *D. Dearii*, *D. formosum*, *D. giganteum*, *D. rhodostoma*, *Anguloa Ruckeri*, *Saccolabium Blumei*, *Vanda cœrulea*, *Calanthe sylvatica*, &c. These plants were tastefully arranged, and were greatly admired.

Obituary.

MR. SAMUEL BRADLEY.—We regret to record the death, on the 17th inst., after a short illness, at Littledale, Hulam, Notts. of Mr. Samuel Bradley. He was the raiser of Sir Joseph Paxton, Dr. Hogg, Amateur, Oscar, and several other good *Strawberries*, and he must be considered to have rendered great services to horticulture by raising such excellent varieties. The deceased was for many years gardener to Count de Pulley, at Elton Manor, Notts. He was a very fine man, physically, standing 6 feet 3 inches, and proportionately made, and had never required a doctor's services until his last illness.

MRS. MILES.—We regret to hear that a sad calamity has befallen Mr. Miles of the Wycombe Abbey Gardens, by the death, in her 48th year, of his wife, Sarah Clare Miles, on the 21st inst. The funeral took place at High Wycombe Cemetery on August 25.

MR. JOSEPH FYFE MESTON.—The death, on the 19th inst., at Brighton, after a long illness, of Mr. Joseph Fyfe Meston in his 65th year is announced. Mr. Meston was well known to many of our readers as a landscape gardener and contractor, and much of the work on the Victoria Embankment was conducted by him in conjunction with Mr. McKenzie. He was associated also with Mr. Marnock and Mr. Nesfield, and took up some of their work. Mr. Meston was an earnest supporter of the "Gardeners' Benevolent."

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Table with columns for Districts, Temperature (Accumulated, Daily), Rainfall, and Bright Sun. Rows list districts 1 through 12 with corresponding weather data.

The districts indicated by number in the first column are the following:— Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 22, is furnished from the Meteorological Office:—

"The weather has continued in a very unsettled condition generally. Rain has fallen almost daily over the greater part of the Kingdom, accompanied at times by thunder and lightning. The rain experienced over our southern and south-eastern counties during the evening and night of the 20th and 21st was very heavy.

"The temperature has not differed much from the mean in Scotland, but in all the English and Irish districts it has been low, the deficit ranging from 1° to 3°. The highest of the maxima were recorded during the earlier part of the period, and varied from 74° in 'England, S.,' and 72° over the Midland and eastern counties, to 68° in 'Ireland, S.' and the 'Channel Islands.' The lowest of the minima, which were registered on rather irregular dates, ranged from 42° in 'Scotland, N.,' to 45° in 'England, N.E. and N.W.,' and to 53° in the 'Channel Islands.'

"The rainfall has been a little less than the mean in 'Scotland, N.,' but more in all other districts; in all the more southern and eastern parts of England the excess has been very large.

"The bright sunshine shows a deficit in almost all districts. The proportion of the possible amount of duration which was actually registered, ranged from 51 per cent. in the 'Channel Islands,' to 38 in 'England, S.,' and to 16 in 'England, N.E.'"

MARKETS.

COVENT GARDEN, August 27.

MARKET very heavy; prices tending downwards. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table listing fruit prices: Apples, Currants, Gooseberries, Grapes, Kent Filbert, Lemons, Melons, Peaches, Pine-apples, St. Michael, Plums.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table listing cut flower prices: Asters, French, English, Bouvardia, Carnations, Chrysanthemums, Cloves, Cornflower, Eucharis, Gaillardias, Gardenia, Gladiolus, Heliotrope, Lavender, Lilium, Maiden Hair Fern, Marguerites, Mignonette, Myosotis, Orchids, Cattleya, Orlontoglossum, Pansies, Pelargoniums, Pinks, Poppies, Pyrethrum, Roses, Sweet Peas, Sweet Sultan, Tuberoses.

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing potted plant prices: Aralia Sieboldi, Aspidistra, Asters, Balsams, Bouvardia, Caladiums, Chrysanthemums, Cockscumbs, Cyperus, Dracæna terminalis, Euonymus, Evergreens, Ferns, Ficus elastica, Fuchsia, Foliage plants, Heliotrope, Hydrangea, Ivy Pelargoniums, Liliums, Marguerites, Mignonette, Myrtle, Palms, Pelargoniums, Spiræa.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing vegetable prices: Artichokes, Beans, Beet, Carrots, Cauliflowers, Celery, Cucumbers, Endive, Herbs, Lettuces, Mushrooms, Mustard and Cress, Parsley, Shallots, Spinach, Tomatoes, Turnips.

LETTUCES FOR SPRING CONSUMPTION: A Subscriber, Cabbage varieties, Stanstead Park and Hammer-smith Hardy Green; Cos, Black-seeded Bath, Hardy Winter White.

MARGUERITES: T. H. Grow in cold frame or house, protect from frost, same treatment as scarlet Pelargoniums; give as much sunlight as possible. For winter flowering strike cuttings in June, and when well rooted plant out on south border, and place in pots in October.

MARKET-NURSERY: M. L. The business certainly attracts many persons to embark in it. The best parts are those that enjoy an early spring, as the south, and south-west; but the contiguity of large markets, and freedom from injurious gases and had water are the chief points to study in selecting a locality.

MARKET-BUNDLE CELERY: A Subscriber. Twelve to twenty heads, according to the season.

NAMES OF PLANTS: T. H. E. Veronica Teucrium var. prostrata.—Walsham & Son, Cephalaria alpina; not indigenous, and it does not appear in any nurserymen's catalogues.—G. P. D. Specimens rotten and broken when unpacked. It is a white-spored species, and perhaps A. dealbatus, which comes up on Mushroom beds, displacing all others.—W. & S. Cabbage disease. Roota full of mycelium. All the upper portion full of Macrosporium Brassicæ and a Phoma; but these are saprophytic, and would not cause the mischief. We can find no definite fungus. The disease must be studied on the spot. Profuse wet has much to do with it. M. C. C.—E. W. G. Ulmus campestris var. cornubiensis.—J. W. I, Swainsona galegifolia; 2, Galega officinalis alba; 3, Tanacetum vulgare.—D. O. F. Lysimachia vulgaris.—C. G. I, Helianthus rigidus; 2, Pyrethrum uliginosum; 3, Helianthus multiflorus flore-pleno; 4, Symphoricarpos racemosus; 5, Veronica longifolia; 6, Pelargonium.—Subscriber. 1, Agave americana variegata; 2, Hæmnanthus catalensis; 3, Tradescantia zebrina; 4, Davallia canariensis; G. D. I, Davallia (Leucostegia) pulchra; 2, D. dissecta; 3, D. (Leucostegia) affinis; 4, D. Tyermanni; 5, D. Mariesii.—J. W. H. We cannot attempt to name florist varieties of Pinks. Consult a grower.—C. E. H. We cannot name florist flowers. Please send to a grower.—A. H. H. Oxycoccus Batemanianum.—G. P. Asclepias curassavica. Campanula, next week.—Voz. Bignonia ralicans.—D. M. Cannæ glauca.—C. W. D. Cratægus Crus-galli, the Cockspur Thorn.

PHYLLOXERA: Oxfordshire. Yes, certainly; but the border is otherwise in a bad state from want of drainage, judging from the sodden condition of the roots. As you will have to turn everything out and start afresh, the present will give you a good opportunity of making a new border.

PLANTING YOUNG VINES: A Lady Gardener. You will find it rather difficult to get a young Vine to establish itself amongst the older plants. Better not to try it. Replace the old Vine which you wish to destroy by taking up another young stem or two from the adjoining plot; or, if you wish to introduce another variety, do so by grafting or inarching Madresfield Court Black Muscat; if you do not grow it, it is one of the best of Grapes.

WORTLEBERRY: J. C. The plant succeeds only on high dry ground, and where the growth of Heather is very dwarf naturally, or is cut over to keep it so. It might be made to grow and fruit well, if it were planted in a fully exposed position on good-sized mounds of hard gravelly materials, faced with the kind of peat in which it is found to grow best. If this peat could be skimmed off 4 or 5 inches thick, and placed like turves are in making a lawn, filling up the interstices between them with peaty soil, and treading it all over firmly, it would answer the purpose better than loose peat. Seeds should be sown in preference to planting.

COMMUNICATIONS RECEIVED.—The Marquis of L.—F. N. W.—Dr. F. Noll, Bonn.—Pitcher & Manda, New Jersey.—J. A. C.—Rev. H. H. D'O.—A. B. R.—M. Coomins, Brussels.—C. W. D.—M. Krelage, Haarlem.—D. T. F.—T. & M.—A. Gaut.—R. D., Shrewsbury.—E. Daborn.—Protheroe & Morris (no space this week).—P. B.—D. C. P.—H. E.—T. Walters.—J. F.—E. Bonavia.—C. A. M. C.—W. Early.—E. J. Lowe.—W. C.—R. D.—J. Douglas.—T. H.—A. D.—A. H.—H. M. M.—E. M.—S. P.—Wild Rose.—J. Day.—W. Sutherland.—J. H. C.—Anti-Ants.—G. B.—D. O. C.—R. A. R.—Prof. Henriques, Coimbra.—Vicente de St. Legier, Rio Janeiro.—J. N.—H. W.—W. J. G.—O. T.—W. W.—G. B. F.—X.—Potts' Seedling and Grosvenor Apples next week.

PHOTOGRAPHS, DRAWINGS, &c., received with thanks from Rev. Robt. Dayrell.—R. L.—Monograph of Masdevallia.—The Marquis of Lothian.

NOTICES TO CORRESPONDENTS.

BEES AND SWEETMEATS: W. B. The bees being, as you state, ownerless, you have no remedy at law.

Why not keep your wares in glass jars, or in shallow wooden show cases with tightly fitting lids of glass.

BLACK CURRANTS: J. Tait. We are unable to distinguish one variety of Black Currant from another by the fruit simply.

CAMELLIAS, VINES, ROSES IN BORDERS: A. N. P. It would be optional on the part of the new tenant or the landlord to pay any sum for these.

CARBOLIC ACID TO VINES: Carbohc. In answer to the further enquiries of "A. W.," Vines are frequently attacked by species of Weevil, especially Curculio unicum, and Otiorhynchus sulcatus; the latter being known as the black Vine weevil. These insects are exceedingly hurtful by feeding on the shoots, leaves, and buds, sometimes also on the fruit and flower-buds; and in the larval state they are injurious by feeding on the roots. To prevent the insects from ascending, the plan is sometimes adopted of wrapping cloths saturated with carbohc acid around the Vine stems, but this plan unless very carefully carried out, is apt to kill the Vines as well as the insects, and, therefore, the better system is to dilute the carbohc acid with lime as previously directed (see p. 202). Some growers regard the dust of the prepared lime as more effective than the carbohc acid in driving away the weevils. J. J. Willis, Harpenden.

CLEMATIS FLOWERS: J. & Co. Quite admissible as the wording stands, but not meant, we should think, by the framers of the schedule. Hardy herbaceous perennials were doubtless intended.

GLOXINIAS DISEASED: W. M. These leaves are affected with a very common disease, the exact nature of which is not yet known. In the leaves in question, there is plenty of spawn in the leaves, but no spores; there are also traces of insects. In the absence of fruit, no guess can be made as to the relationship of the fungus. M. C. C.

HOLLYHOCK FOXGLOWS: A. B. S. W. Yes; it is common on most Malvaceous plants.

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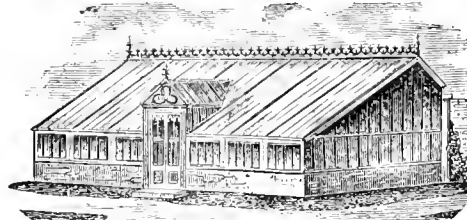
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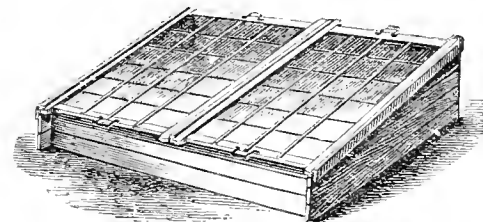
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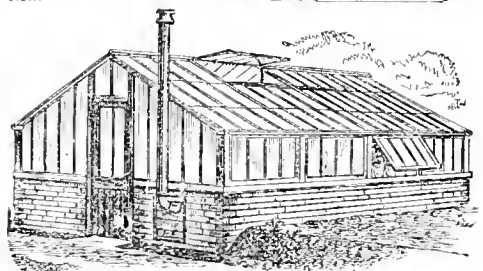
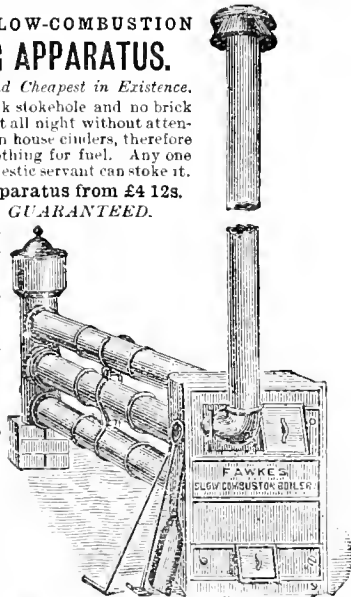
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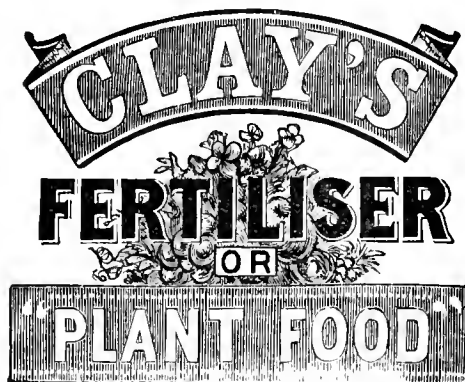
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The Gardens, Hatfield House, Herts, April 20, 1891.
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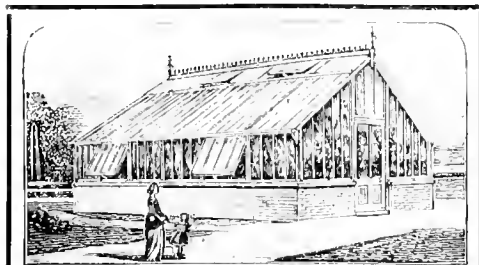
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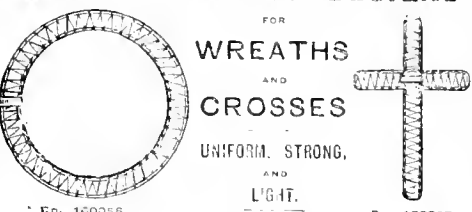
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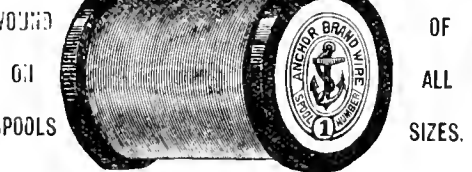


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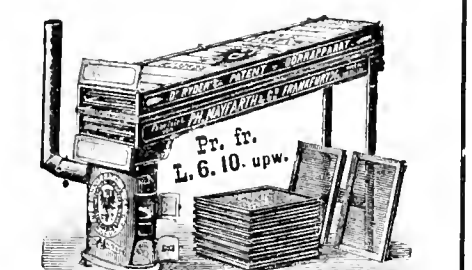
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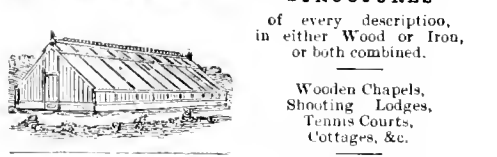
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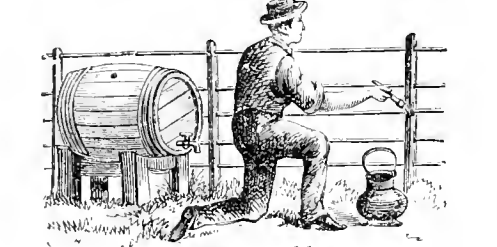
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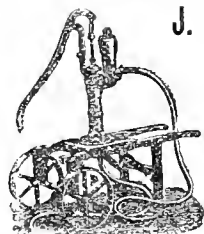
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On view morning of Sale, and Catalogues had. Croydon. Expiration of Lease Three minutes' walk from West Croydon, and ten minutes' from East Croydon Stations.

CLEARANCE SALE OF STOVE and GREENHOUSE PLANTS, by order of Mr. T. Butcher, whose Lease expires at Michaelmas next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, London Road, Croydon, on TUESDAY, September 8, at 12 o'clock precisely, 1000 PALMS, in variety; 200 ADIANTUM CUNEATUM, 50 AZALEA INDICA, well set, mostly white; 100 CAMELLIAS, chiefly white; 200 ORCHIDS, in variety; Specimen BAYS, ORANGE TREES, FERNS and PALMS, TEA ROSES, EUPHARIS, 100 CHRYSANTHEMUMS, extra fine plants, all named, and well grown; FLOWERING and DECORATIVE PLANTS, HOYAS, STEPHANOTIS, and a large assortment of other plants.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; of Mr. T. BUTCHER, the Station Road Nursery, South Norwood; and of the Auctioneers, 67 and 68, Cheap-side, London, E.C. Tatsfield, on the borders of Surrey and Kent. Two miles from Westcrim Station.

IMPORTANT TO FRUIT GROWERS and LAND SPECULATORS. Immediate possession. Free conveyances. Payment by instalments. MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, in a Marquee on the Estate on TUESDAY, September 8, at half-past 1 o'clock, 200 Plots of FREEHOLD LAND, with frontages of 30 to 150 feet, and depths of 200 to 400 feet, on the Manor House Estate, Tatsfield, Surrey, commanding most beautiful views, and specially adapted for Villa Residences and Fruit Growing. A special tram will leave Cannon Street on the morning of Sale, and Luncheon will be provided.

Particulars had of T. DURANT, Esq., Solicitor, 5, Guildhall Chambers, Basinghall Street, E.C.; and, with tickets, of R. VARTY, Esq. (the Vendor), 90, Leadenhall Street, E.C.; and of the Auctioneers and Land Agents, 67 and 68, Cheap-side, London, E.C., and Leytonstone, E. Lea Bridge Road, E. ANNUAL UNRESERVED SALE of fine WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY, September 10, at 11 o'clock precisely, in consequence of the large number of lots, a large quantity of—

- WINTER-FLOWERING AND OTHER PLANTS, including: 24,000 Erica hyemalis; 1,000 Tree Carnations; 4,000 Erica gracilis; 6,000 Genista fragrans; 6,000 Ampelopsis Veitchii, 1 foot; 1,001 Epacris; 2,000 Lapageria rosea superba; 6,000 Cyclamen persicum (Fraser's superb strain); 2,000 Passiflora Constance; 10,000 Clematis Jackmanni and other best named sorts; 1,000 Dentzia gracilis, established in pots for earliest forcing; 2,000 Variegated and other Ivies; 2,000 Margherita Niel, (Gloire de Dijon, 8 to 10 ft.); Niphetos, L'Idéal, and other Tea-scented and Noisette Roses in great variety; 6,000 Bouvardias, including a lot of "President Cleveland"; 5,000 Solanums, beautifully berried; 1,000 Ivy-leaved Geraniums, best double kinds; 1,000 Early flowering and other Chrysanthemums, fine strong stuff; 500 Grevillea robusta

And a great number of Erica ventricosa, Cavendishii, caffra, large-flowering white Jasmines, Stephanotis floribunda, Boronia megastigma, Escallonia maritima, Japanese Honey-suckles, Camothus, Aralia Sieboldii, Abutilons, Humbugs, Lapageria alba, Bignonias, Magnolias, of sorts; Figs, strong, in variety; India-rubber plants, Palms, Ferns, Ficus elastica variegata, and other plants. Also a large quantity of young Heaths and Genistas, for potting on. The whole of the Stock is in the best condition, and ready for immediate sale. Hoe Street Station, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour. May be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C., and Leytonstone, E.

East Grinstead.—Without Reserve. IMPORTANT to the TRADE and PRIVATE BUYERS.

SECOND ANNUAL SALE of WELL-GROWN STOVE and GREENHOUSE PLANTS, fit for immediate sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Roberts Bros., to SELL by AUCTION, on the Premises, the Moat Nursery, East Grinstead, close to the Railway Station, on FRIDAY, September 11, at half-past 11 o'clock precisely, the following unusually well-grown stock:— 2000 Roses in pots; 5000 Bouvardias; 800 Azaleas; 2500 Palms, in variety; 150 Specimen Eucharis, grand plants; 10 Half-specimen Eucharis; 1500 Double White Primulas; 2000 Adiantum cucuatum.

Cyclamen, Begonias, Callas, Gardenias, 2000 Lilium Harrisoni and 200 L. candidum (mlbs), &c. May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Upper Edmonton.

The Dyson's Lane Nurseries, about five minutes' walk from Angel Road, and eight minutes from Silver Street Station on the G. E. R.

SIXTH GREAT ANNUAL TRADE SALE of about 61,000 GREENHOUSE and other PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to SELL by AUCTION, on the Premises as above, on MONDAY, September 11, at 11 o'clock, punctually, owing to the large number of lots, about

- 61,000 STOVE and GREENHOUSE PLANTS, exceptionally well grown, and in the best possible condition, the principal items comprising: 10,000 Tree Carnations, including Mrs. Moore, Duke of Fife, Floram, Winter Cheer, Mrs. Keynolds Hole, and many other first-class varieties; 2,000 Tea Roses in pots, extra strong, amongst them Margherita Niel, Gloire de Dijon, W. A. Richardson, and others, with well ripened growths, 12 to 15 feet long; 20,000 Ferns, all the most marketable sorts, many novelties; 10,000 Bouvardias (including Purity (new white), President Cleveland, Mrs. Robt. Green, Candidissima, and the best double and single varieties); 5,000 young Palms; 3,000 Genistas, fine bushy plants; Kentias (good plants), Crotons, Eucharis, Arabas, Clematis, Ivies, Ampelopsis, Azaleas, Solanums, and other plants. May be viewed any day prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Lee, Kent, S.E.

GREAT ANNUAL SALE of WINTER-BLOOMING HEATHS and other PLANTS—the stock this season being unusually well grown and in splendid condition—to commence punctually at 11 o'clock, there being upwards of 150 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, S.E.R., on TUESDAY, September 15, without reserve, a grand collection of remarkably well-grown

- WINTER-BLOOMING HEATHS and STOVE and GREENHOUSE PLANTS, comprising: 20,000 Erica hyemalis; 5,000 "gracilis"; 2,000 "Cavendishii"; 1,000 "coccinea minor"; 600 "caffra"; All the Ericas being unusually well set with flower; 5,000 Genistas; 4,000 Solanums, well-berried; 1,500 Epacris to name; 2,000 Bouvardias of sorts; 1,000 Adiantum cucuatum; 1,000 Lomaria glabra; 800 Tea Roses, in pots; 1,000 Cyclamen persicum; 500 Crotons, beautifully coloured; 500 Acaea armata; 1,000 Boronia megastigma, and others; 1,000 Grevillea robusta; 1,000 Ampelopsis Veitchii

And a large quantity of young Erica hyemalis, Cavendishii, gracilis, and others; also Genistas and Epacris, all in 60-pots for growing on. The Stock may now be viewed. Catalogues obtained on the Premises; at the Seed Warehouse, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheap-side, London, E.C.

Hammersmith.—Absolutely without Reserve. SALE of the BENEFICIAL INTEREST in the LEASE and STOCK in TRADE of a well-established CUT-FLOWER and FLORIST BUSINESS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises: The Peacock Nurseries, Hammersmith, on FRIDAY, September 25, at 12 o'clock, unless previously disposed of by private contract, the BENEFICIAL INTEREST in the LEASE.

Immediately following the Sale of the Lease, the whole of the STOVE and GREENHOUSE PLANTS and other STOCK, also the UTENSILS in TRADE, will be SOLD by AUCTION in suitable lots. Particulars of the Auctioneers, 67 and 68, Cheap-side, E.C.

Enfield, Middlesex.—Preliminary Notice. MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Blundell to SELL by AUCTION, on the Premises, The Nursery, Ridgeway Oaks, Enfield, STOVE and GREENHOUSE PLANTS, comprising ROSES, BOUVARDIAS, ASPIDISTRAS, FERNS, STEPHANOTIS, CALLAS, GLADIOLUS, CARNATIONS, and other stock. Further particulars will appear next week.

Enfield Highway, N. The Brimsdown Nursery, adjoining Brimsdown Station G.E.R. TWENTY-THIRD ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

The Sale to commence punctually at 11 o'clock, there being upwards of 1500 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Maller to SELL by AUCTION, on the premises as above, on THURSDAY, SEPTEMBER 17, 1891, without reserve, upwards of 1500 lots of remarkably well-grown

- STOVE and GREENHOUSE PLANTS, mostly in 48-pots, and fit for immediate Sale, consisting of:— 15,000 winter-blooming Heaths, the best lot offered at this Nursery for many years, including hyemalis, gracilis, Cavendishii, ventricosa, in variety, &c.; 3000 Tree and other Carnations, leading varieties, including Mrs. Moore, Duke of Fife, Duke of Clarence, Winter Cheer, Germana, &c.; 5,000 Bouvardias, best vars.; 2,000 Grevillea robusta; 5,000 Genistas; 500 Double White Primulas; 1000 Ampelopsis Veitchii; 500 Crotons, beautifully coloured; Large Azaleas for cutting; Palms, Ficus; Also quantities of Epacris to name, Callas, Poinsettias, Golden Euonymus, Gardenias, Geraniums, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the premises; at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

N.B.—The whole of the Stock is in first-rate condition. The Ericas and Solanums are unquestionably the finest lot offered at this Nursery for many years. The Ericas being especially well set for flower, and the Solanums unusually well-berried.

Acton, W. IN BANKRUPTCY of JOHN REEVES. ABSOLUTE CLEARANCE SALE, without the slightest Reserve. By order of the Trustee.

IMPORTANT TO THE TRADE.—PRELIMINARY. MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Acton, W., on MONDAY, Sept. 21, and following days, the whole of the extensive STOCK, including 100,000 FERNS, 4000 EUPHARIS (large plants), a great stock of ASPARAGUS TENNISISSIMUS and PLUMOSUS, the entire stock of the new Single Pink PELLAGONIUM, ETHIEL; 3000 MISS JOLIFFE CARNATIONS, the finest in the Trade; 2000 ditto in store pots; 300 Specimen Fisher's White AZALEAS, 1000 POINSETTIAS, 5000 CYPERUS, 10,000 Golden and Green EUONYMUS, 800 White PEONIES, 3000 Irish IVIES in pots, the Erectors of 30 GREENHOUSES, thousands of feet of HOT-WATER PIPING, &c. Catalogues of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Sutton, Camden House Gardens. IMPORTANT SALE of the whole of the valuable Collection of ORCHIDS, STOVE and GREENHOUSE PLANTS, which are so well known at the local shows.—Preliminary.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Gardens, Camden House, Sutton, without reserve, on THURSDAY, September 24, the whole of the valuable Collection of STOVE and GREENHOUSE PLANTS, comprising about 500 lots, and including beautifully-grown Specimen Azaleas, large Lapagerias, choice named Begonias, many Specimen Plants, Stephanotis, Crotons, fine-trained Exhibition Fuchsias, Camellias, Palms, &c.

Messrs. PROTHEROE AND MORRIS desire to call special attention to the ORCHIDS, which include numerous fine varieties, the greater portion of them having been purchased in flower.

May be viewed. Catalogues of Mr. COOK, the Gardener, on the Premises; and of the Auctioneers, 67 and 68, Cheap-side, E.C. Derby.—The Mile Ash Nurseries.

CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, 601 CAMELLIAS, including many specimens, large PALMS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, September 29 and 30, the whole of the GREENHOUSE and STOVE PLANTS.

The outdoor NURSERY STOCK will be sold in October. Auction and Estate Offices, 67 and 68, Cheap-side, E.C.

Bagshot. HIGHLY IMPORTANT THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, which has been carefully prepared for removal, and specially selected for this Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, on WEDNESDAY, September 30, 1891, and two following days, without reserve, several acres of NURSERY STOCK, grown to the highest perfection, and exceedingly well-rooted.

There will be included very fine specimens of Gold and Silver variegated HOLLIES; 2000 named RHODODENDRONS, best and newest kinds; a large quantity of splendid specimen CONIFERAE, particularly adapted for effective planting; and other STOCK, fuller particulars of which will be duly advertised. Purchasers will be allowed until December 31, 1891, for the removal of their lots. May now be viewed. Catalogues obtained on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, E.C.

Sunningdale.—Preliminary Notice.
WITHOUT RESERVE.—SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. Charles Noble.

MESSRS. PROTHIERO AND MORRIS beg to give notice that this ANNUAL SALE is fixed for MONDAY, October 5, and five following days. Further particulars will appear in future advertisements. The Stock may now be viewed, and catalogues had, when ready, on the Premises, and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

Specimen Exhibition Plants.
HIGHLY IMPORTANT PLANT SALE at MILLBANK, EDINBURGH.

MR. DAVID MITCHELL, HORTICULTURAL AUCTIONEER, has been instructed by James Syme, Esq., of Millbank, to DISPOSE of, by PUBLIC AUCTION, on THURSDAY, September 10, 1891, at half-past 11 o'clock, the whole of the magnificent SPECIMEN AZALEAS, ERICAS, PALMS, FERNS, ORCHIDS, CHOICE GREENHOUSE PLANTS, including some fine Greenhouse Rhododendrons, &c. The Azaleas and Ericas are without exception the finest lot of Specimen Plants in the country, have often been exhibited, and always taken the leading prizes, more particularly at the Royal Caledonian Horticultural Society. They have all been grown under the eye of Mr. Paterson, who is a well-known cultivator. The whole of the Stock is in the best of health, and will be sold without Reserve.
Descriptive Catalogues, now ready, may be had from the Auctioneer, 6, Comely Bank, Edinburgh; and from Mr. Paterson, The Gardens, Millbank, Morning-side.

Great Oakley, near Harwich.
E. J. CRASKE will SELL, by AUCTION, at THE CAPTAIN'S HOTEL, Harwich, on FRIDAY, September 11, 1891, at 3 for 4 o'clock, P.M., by order of the Mortgagees, the following properties:—
LOT 1.—The Brick and Slate FREEHOLD RESIDENCE, containing ten Rooms, with paved Hall, Fruit Room, and Maogle Room; pleasantly situated in the healthy village of Great Oakley, with large Gardens with choice Fruit-Trees, FIVE LARGE GLASSHOUSES, including three Glasshouses respectively 89 feet, 30 feet, and 25 feet long; a 50 feet Vinery, and a 40-foot House, heated with hot-water pipes; Yards with Chaise-house, Double Stable, and Cow-house; the whole Property containing about ONE ACRE. In front of the house is an unusually fine Weeping Ash. Occupied by Mr. Edmund Blowers, Senr.; with early possession, if required. This excellent property is well suited for a florist.
LOT 2.—FREEHOLD COTTAGES and WAREHOUSE, in Great Oakley Street.
Particulars of Messrs JACKMAN AND SONS, Solicitors, Ipswich; and of the Auctioneer, Head Street, Colchester.

Beechfield, Doncaster.
To COLLECTORS OF ORCHIDS, NURSERYMEN, and OTHERS,
MESSRS. HEPPEL AND SONS are favoured with instructions from Richard Morris, Esq., J.P., who is leaving Beechfield, to SELL by AUCTION, on the Premises, on MONDAY, TUESDAY, and WEDNESDAY, September 14, 15, and 16, commencing at 12 o'clock each day, the magnificent COLLECTION OF ORCHIDS and STOVE and GREENHOUSE PLANTS,
Which comprises:—
IN ORCHIDS.—*Phalopsis Ludlowiana*, *Amabilis*, *Schilleriana*, *Sanderiana*, and *Grandiflora*; *Cymbidium clarinatum*, a very fine specimen with eight flowering growths and five new growths; *Cymbidium Lowianum*, *Cattleya Mendelii* delecta F. C. C. from the R. H. S.; *Cattleya Eldorado* (Wallisi), *Gigas*, *Imperialis*, *Sanderiana*, *Aurea*, *Mossie*, *Triana*, *Schilleriana*, *Amethystoglossa*; *Angreecium*, *Sesquipedale* and *Sanderiana*; *Aerides Fieldingii*, *Alliae*, and *Sanderiana*; six dozen of *Odontoglossum crispum*, and 2 dozen of *Pescatorea*, all selected, when in flower, as being of the best types, and now in vigorous health; *Odontoglossum triumphans*, *Grande*, *Harryanum*, *Cirrosum*, *Coronarum*, &c.; *Cypripedium Grande*, *Elliotianum*, *Argus*, *Heslostium*, *Spicerianum*, *Insigne*, and *Barbatum*; *Coccygia cristata*; *Bomarea Wardianum*, *Thysiflorum*, *Crassnolia*, *Aurea*, &c.; *Lycaste Skinneri*; *Oncidium*; *Masdevallia*; *Maxillaria*; *Miltonia*; *Vanda saviis*, and *Tricolor*, &c.

IN STOVE and GREENHOUSE PLANTS.—*Nepenthes Curtisii* Superb, *Dicksoniana*, *Hookeriana*, *Morganae*, *Mastersiana*, and *Rafflesiana*; *Anthurium Andreana* Sanguinea, *A. Thellusonii*, *Madame Ed. Pynaert* (best white), *Scherzerianum* Wardii and *S. Maximae*; *Anthurium Crystallinum*, 5 feet diameter, in robust health; *Alocasia Lowii*, *Sanderiana* and *Metallica*; *Poinsettia Speciosa* and *Fragrans* (the foregoing are all large specimen plants and in splendid condition); four magnificent *Lapagena*, *Alla* and *Rubrum*, each showing hundreds of flowers; *Tillandsia Lindenii*, *Medenilla Magnifica*, *Phyllotoma*, *Carolinica*, *Palmata*, *Clivias* in good varieties; twenty specimen greenhouse Rhododendrons, from 2 feet to 4 feet in diameter, in all the leading kinds; a very fine lot of *Crotons*, *Caladiums*, and *Dracenas*, *Asparagus Plumosus*, and *A. deflectus*; *Palms*; Tree and other *Ferns*; *Camellias* and *Azaleas* of the best sorts; a grand assortment of *Amaryllis*, *Liliums*; *Gloxinas* from the best strains; *New Holland* plants; upwards of 600 *Chrysanthemums*, best named varieties, and many other plants which cannot be enumerated in the space available in an advertisement.
Catalogues (1s. each), which will be ready ten days before the Sale, may be had of the Auctioneers, East Parade, Leeds, and holders thereof only will be admitted to view the collection on WEDNESDAY and THURSDAY, September 9 and 10, from 10 to 4 o'clock.
N.B.—Mr. MORRIS' valuable collection of Pictures, English and Foreign Silver, and the extensive assortment of rare Bronzes, China, Ivories, Curios, Cabinets, &c., collected by him on a tour in the East, as well as the excellent appointments of the residence, and the Horses, Carriages, Cow, and outdoor effects, will be sold on WEDNESDAY, THURSDAY, and FRIDAY, September 16, 17, and 18; and on MONDAY, TUESDAY, and WEDNESDAY, September 21, 22, and 23.
The Pictures and other art property may be inspected on SEPTEMBER 9 and 10, on presentation of address card, and Catalogues (1s. each) may be had. The public view of the whole of the contents of Beechfield will be SEPTEMBER 14 and 15.

Monday, Wednesday, and Saturday Next.
EXTENSIVE IMPORTATIONS of first-class BULBS from HOLLAND.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 28, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY and SATURDAY NEXT, September 7, 9, and 12, at half-past 12 o'clock precisely each day, extensive importations of first-class DUTCH BULBS, just received, in splendid condition, and specially lotted to suit the trade and private buyers, comprising many of the best-known sorts of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, IRIS, COLCHICUMS, SNOWDROPS, PAPER WHITE NARCISSUS, GLADIOLI (The Bride) LILIUM HARRISII, L. CANDIDUM, &c., for Forcing.
On view morning of Sale, and Catalogues had.

Saturday, September 12.
MESSRS. C. FULLER AND SON will SELL by AUCTION at Coppi's Nursery, Grove Road, Woodford (ten minutes from George Lane Station, G.E.R.), the entire stock in trade and plant of a nurseryman and florist, together with the erection of three span-roof Greenhouses, 82 feet x 11 feet, 40 x 12, and 10 x 8.
On view day previous and morning of Sale. Catalogues of the Auctioneers, Buckhurst Hill, and Loughton.
N.B.—These compact premises TO LET.

WANTED, to PURCHASE, a genuine FRUITERER'S, FLORIST'S, and GREENGROCER'S business, south or west of England preferred. Particulars to T. HAKE, Wellington, Lincoln.

By Order of the Mortgagee.
SALE by TENDER of MESSRS. ALLUMS well-known NURSERY, close to Mill Hill Park Station, Acton. This valuable property, being the Stock-in-Trade, including the large Glass-houses and several Thousands of Plants, together with the Lease of Two Cottages, will be disposed of in ONE LOT for Cash, as above.
Full Particulars may be obtained from Messrs. HODD LONG-STAFFE, SON and FENWICK, Solicitors, 10, Berners Street, W.; or of the Auctioneers, 11, Royal Crescent, near Uxbridge Road Station, W., prior to MONDAY, September 14, 1891, on which day the Tenders will be opened at 12 o'clock, noon.

FOR SALE, a genuine SEED and FLORIST BUSINESS. Over 10 years' Lease unexpired. Low rent. Main road position. Doing nearly £2000. Can be much improved with good management. Every convenience for doing a larger trade. Greenhouse and Conservatory, and Stable at rear of shop. All in excellent repair. Satisfactory reasons for leaving.
Apply to R. PECKETT, Estate Agent, Wellington Street, Woolwich; or C. N. NEWMAN, 35, Plumstead Road, Plumstead, S.E.

FOR SALE, or LET, a FREEHOLD. About 3 acres of this old-established Nursery, in good position, between Weybridge and Chertsey, Surrey. A good opening for an energetic man. Ten minutes walk from Chertsey or Addlestone station, South Western Railway; in a rapidly increasing neighbourhood. For particulars, enquire of—
W. DALE, Knockholt, Kent.

FOR SALE, a FLORIST, SEED, and BULB BUSINESS, in a first-class London Suburb. Well fitted with Greenhouse, Heated, and every convenience; with capital chance to let off part.—Apply, FERN, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FLORIST'S, FRUITERER'S and SEED-MAN'S BUSINESS for DISPOSAL. Situate in a good class West suburb. Long lease, grand position. Turnover about £300 per annum. At good profits. Working expenses very low. Price £250.
Particulars of FLORA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, 5 acres and 1 plot of FREEHOLD LAND, at Tatsfield, Surrey, near Westerham. Price £150. Apply to—
D. E. ASQUITH, South Croydon Nursery, Newark Road, Croydon.

FOR SALE, the twelve years' LEASE of a NURSERY (2 acres), seven Glasshouses, all heated. Within 10 miles of Covent Garden, and close to two stations. Apply, F. H. 5, Gladstone Villas, Fairfield Road, Edmonton, Middlesex.

TO GARDENERS WITH £100.—A good living Trade to be had for the above sum. Apply to—
INDUSTRY, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Landscape Gardening.
ARTHUR M. KITTLEWELL (Author of *The Theory and Practice of Landscape Gardening*), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons.
Address, Titeley, R.S.O., Herefordshire.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.
MESSRS. PROTHIERO AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.
Address, SECRETARY, 43, Great Tower Street, E.C.

PALMS.—For Special Low Offer of PALM SEEDS and SEEDLINGS, all the leading kinds, write to H. DAMMANN, Jun., Breslau.

EXHIBITIONS.

BRIGHTON HORTICULTURAL ASSOCIATION.
GRAND AUTUMN SHOW OF PLANTS, CUT FLOWERS, and FRUITS, September 9 and 10.
TWENTY POUNDS offered for EIGHT STOVE and GREENHOUSE PLANTS, in flower. Schedules may be had of E. CARPENTER, Secretary.
96, St. James Street, Brighton.

1892.—The Summer Show Schedule will include Classes for Stove and Greenhouse and Fine Foliaged Plants, Pelargoniums, Ericas, &c.

NATIONAL CHRYSANTHEMUM SOCIETY, ROYAL AQUARIUM, WESTMINSTER, S.W.
EXHIBITION OF EARLY CHRYSANTHEMUMS, DAHLIAS, GLADIOLI, &c.,
WEDNESDAY and THURSDAY, SEPT. 9 and 10.
Schedules of Prizes, and all information, to be had of—
RICHARD DEAN, Secretary, Ranelagh Road, Ealing, W.

FOR ORCHIDS, and GARDENERS to grow them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World. 30 minutes from St. Pancras.
Dutch, Cape, and Exotic Bulbs.
ANT. ROOZEN AND SON'S CATALOGUE for Autumn, 1891, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants (104 pages in English) is now ready, and will, as usual, be sent, post-free, on application to their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.; or themselves direct, at Overveen, near Haarlem, Holland.
N.B.—No connection with any other firm of the same name.

VISITORS TO THE CONTINENT are cordially invited to visit the Establishment of HORTICULTURE INTERNATIONALE; Directors, Messrs. J. LINDEN and LUCIEN LINDEN, Leopold Park, Brussels. This grand Establishment contains the FINEST and LARGEST STOCK OF ORCHIDS and NEW PLANTS in Europe. Large Conservatories, &c. English CATALOGUE sent gratis.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown Stock of ERICAS (*Hyemalis* and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS of sorts, ADIANTUM CUNEATUM, and other FERNS; PALMS, in variety, GARDENIAS, STEPHANOTIS, FIGUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES (in pots), BORONIA MEGASTIGMA, VINES (in pots), &c.
An Inspection is invited.
Trade CATALOGUES forwarded on application.
The ANNUAL SALE by AUCTION will be held on Tuesday, September 15.
Burnt Ash Lane Nurseries, Lee, S.E.

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LAUREL, COLCHIC, 5 to 6 feet, and 6 to 7 feet.
PICEA NORDMANNIANA, 5 to 6 feet, and 6 to 8 feet.
THUOPSIS BOREALIS, 6 to 8 feet, and 8 to 10 feet.
WELLINGTONIA GIGANTEA, 5 to 6 feet, and 6 to 8 feet.
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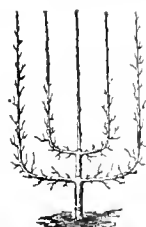
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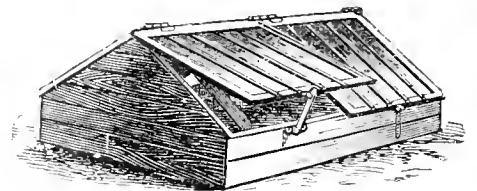
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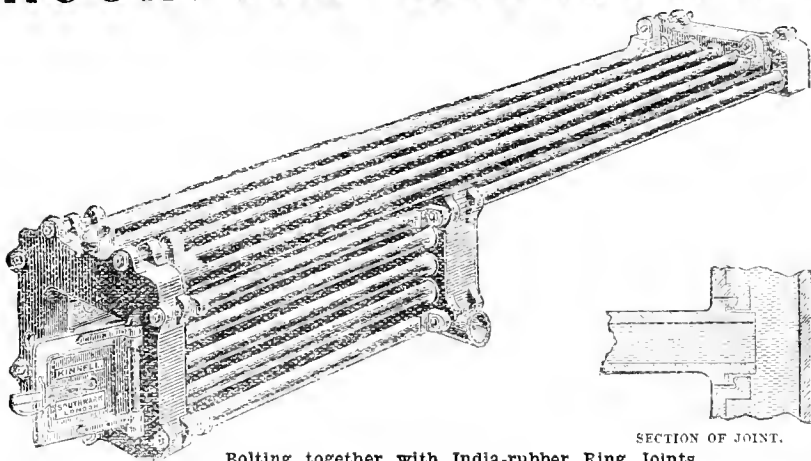
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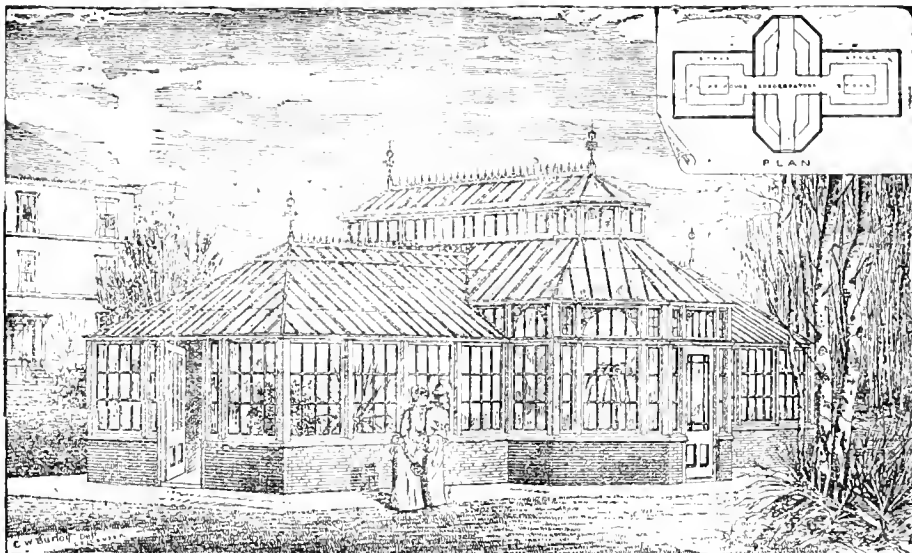
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 5, 1891.

LONGLEAT.

IN writing of great houses, the use of adjectives should not be too freely indulged in, but in the case of Longleat, I must describe it as a beautiful and magnificent place. The house was commenced in 1568 by Sir John Thynne, the founder of the family, on the site of an ancient priory, near a spot where a mill stood, and the *leat*, or trench, which conveyed water to this mill, gave the place its name. The architecture of the edifice is a mixture of English and Italian, not uncommon in great houses of its period. The four fronts of the massive building are ornamented with pilasters and cornices, and there are turrets and statues, and handsome balustrades on the roof. The three stories of the venerable building lift the roof to a dizzy height, and as the leads afford a capital bird's-eye view of the park and surroundings, I asked permission to ascend, and reached them after a steep climb up.

The park, with its wide expanse of turf, fine timber, and numerous deer, lies around the roof trees in stately beauty. Most of the surrounding country belongs to the owner of Longleat, and the Marquis of Bath might almost say in his own neighbourhood, what Alexander Selkirk said of his island, "My right there is none to dispute." Almost the whole of the sylvan country around this high roof belongs to the Marquis. Due west, however, on a clear day, one can see the distant tower of Ammerdown Park, the residence of Lord Hylton. On the south side of the house a fine avenue of Elms, a mile in length, leads to the village of Horningsham, and here and on the steep slopes which shut in the park in other directions, several groups of deer disport themselves with all the grace of their tribe beneath the trees. Everything that meets the eye is extremely characteristic of a well-kept domain.

From this lofty eyrie one can read the map below. On the west side, close to the house, we look straight down upon a newly-shaven cricket-ground, where a match, more lively than that at Lord's or the Oval, is in progress between the people of the village, the servants of the house and four young clergymen of the neighbourhood. On the north side, we overlook the formal edgings of a Dutch garden, composed of clipped Box, Yew, and Berberis Darwinii, but not then furnished with flowers, which could not have been safely put out at that date, the twenty-third day of the most cold, inclement May ever known. There is besides another garden in another style on the same side of the house, the whole space forming a large square diversified by hedge and shrub, and having the house on one side, with an orangery opposite. An ornamental strip of water, called in past times the Longleat, divides the garden from the park; and on the fourth

side of the square is a handsome block of buildings, including stables, brewery and laundry, whose architecture accords with that of the house. The margin of garden between park and house on its other three sides is a narrow one, so that the deer can approach near the windows.

It is quite a long walk from the roof to the cellar, where the hogsheads of good ale are almost innumerable. Longleat is famed for hospitality. When George III. came here, following in his century the footsteps of Queen Elizabeth and Charles II., 125 visitors slept in the house. Ten years ago, the Prince and Princess of Wales met 600 guests here at a ball, and stayed nearly a week; and at the coming of age of Lord Weymouth, 1100 friends and tenants took luncheon together. The house has a frontage of 220 feet, and the cellars are nearly as long. It is fortunate for their present owners that the builders of sixteenth-century houses usually had sound ideas of size and proportion. The rule with them, that a great house should have large rooms, was strictly observed at Longleat. If this were the proper place, I should have wished to describe the beautiful ceilings, and marble fireplaces from Italy, recently added to several of the rooms, and the baronial hall, decorated with armorial escutcheons, hunting pieces, and stags' horns.

The woods approach the house nearest on the east side, where they clothe the sides of such a hill that few persons would care, at night, to pass on wheels down the carriage road that runs through the wood, and athwart the slope of that steep hill. I came that way from Warminster. Cley Hill, with its barrows and antiquities, its smooth turf carpet on the chalk, and its long view, lay on the right as we entered the park. We were already in the wood, and I soon found that a long and steep descent lay before us. The view from this high ground, whence the panorama of the house and the park below is first seen, is very beautiful. One favoured spot on the ridge is known by the name of Heaven's Gate, and the legend runs, that a distinguished lawyer visiting Longleat, gained for this spot its name in this way. He had paused to admire the prospect, when he was asked what he thought of it, "My lord," he replied, "for a lawyer, I was never so near Heaven before."

One of the greatest early improvers of Longleat was the first lord of the family, Lord Weymouth, who made the gardens just noticed on the north front, and placed statues therein. This was at the end of the last century, and the gardens replaced a meadow which hardly occupied an appropriate site so near the house. The third Viscount Weymouth became the Marquis of Bath, and the sire of fifteen children. The second Marquis followed his lead to the extent of numbering ten in family, and although the present Lord of Longleat has only six, one may hope that these will suffice to perpetuate his name.

Visiting the gardens under the guidance of Mr. Pratt, I may preface a very short account of them by saying that they are what excellent and energetic management, with twenty-seven gardeners, can make them. There are 9 acres of kitchen garden. The vinery, in which Mr. Pratt's achievements are well known to the gardening public, is 298 feet long and 30 feet wide, in three compartments; Muscats in one, and about twenty leading sorts in the others. We took a brief look into some of the other houses, in which were ripe Melons, and long rows of ripe Strawberries, blushing in their petals, and we glanced into another house for Peaches, and another for Figs.

I was much interested in the pleasure grounds,

reaching from near the house to the kitchen garden. Here, and in the woods, were planted the first Weymouth Pines, named from their introducer, Lord Weymouth. I much admired two great silver Firs, growing near Mr. Pratt's house, and about 125 feet high. There are many others nearly as high, with proportionate girth. Probably the most remarkable specimen plants in these pleasure-grounds is a standard *Salisburia adiantifolia*, 50 feet high. A *Pinsapo*, 30 feet high occasioned a pause, and one could not pass a Cedar of Lebanon 100 feet by 13 feet without yielding it the tribute of great admiration. The Huon Pine of Tasmania, *Daerydium Franklinii*, of which a cut appeared in *Gardeners' Chronicle*, has been unfortunately much hurt by the severe winter, in spite of its sheltered position, so that Mr. Veitch, who says in *A Manual of the Conifers*, that it is not unfrequently met with in British collections, correctly describes it as only "moderately hardy." A fine specimen of *Araucaria imbricata*, in the same grounds, as well as the exotic Conifers generally, have escaped injury. I must pass many specimens without mention, but not the very handsome Purple Beech, 80 feet by 11 feet, since it is perfect in its shape; nor the *Sequoia sempervirens*, which Lord Bath planted thirty-eight years since, on his twenty-first birthday, which is now a fine tree 80 feet high.

A heronry should be named in a pond north of the house, and here my catalogue must end, and I must quit the park, returning to Warminster by a road passing through Horningsham, and through several miles of woodlands where pheasants, secure in the protection of many keepers, mustered by the roadside as if to be admired. *H. E.* [An illustration of Longleat, with a full account of the Vineries, etc., was given in our number for December 12, 1885.]

NEW OR NOTEWORTHY PLANT.

NEOBENTHAMIA GRACILIS, *Rolfe, n. gen. et sp.**

THIS singular Orchid (fig. 33) was sent to Kew from Zanzibar by Sir John Kirk in 1881. From the first its peculiar habit attracted attention, being altogether different from any other African Orchid known, and, indeed, from anything else in cultivation. In February, 1890, it flowered for the first time, and proved, as suspected, to be quite a new type. It will not fit into any existing genus, and the only course possible is to propose a new one for its reception. It belongs to the tribe Vandeeæ, as it possesses a distinct stipes and gland to the pollinia, and to the subtribe Cymbidiæ, as the lip is adnate to the base of the column, and without a spur. Apparently it must stand next to the genus *Bromheadia*, which has erect leafy stems, with distichous leaves, and two ovoid pollinia, which are sessile on

* *Neobenthamia*, n. gen.—Sepals, sub-equal, somewhat spreading, the lateral ones slightly connate at base, also slightly adnate to base of lip. Petals similar. Lip, somewhat spreading, entire, somewhat narrowed and fleshy in lower half, adnate to base of column at extreme base, immovable; the disc slightly hairy, but without keels or crest. Column short and stout, angles sub-acute, footless; pollinia 2, somewhat bilobed, attached to two slender curved stipes, which are united at extreme base, where they join the semi-circular scale-like gland.

N. gracilis, n. sp.—A tall, branching, and somewhat straggling plant, at present about 4 feet high, with slender sub-erect or spreading branches. Leaves distichous, numerous, recurving, linear, unequally bidentate, 5 to 7 inches long, 3 to 5 lines broad. Racemes terminal, short, many-flowered. Bracts linear setaceous, 1½ to 2 lines long. Pedicels 9 to 10 lines long. Sepals and petals sub-equal, oblong, 5 lines long by 2 lines broad, white. Lip obovate-oblong, truncate or minutely apiculate, unfurlate on the sides, narrowed below, white, with a yellow middle line, and a row of rosy-purple spots on either side, the disc slightly pubescent. Column white, anther-ovary dull purple, minutely puberulous. Native of East Tropical Africa.

a scale-like gland. In that genus, however, the lip is three-lobed, and the side-lobes embrace the column, which latter organ is membranous, and broadly two-winged, none of which characters are seen in the present genus—besides the well-marked difference in habit and in the stalked pollinia. All the structural details are admirably represented in the annexed figure, which has been prepared by Miss Smith. The sketch showing the habit of the plant is much reduced, as will be apparent when it is stated that the leaves are 6 inches long.

The upper branch on the right shows the short, almost capitate raceme, a portion of which with three flowers and several bracts is represented, natural size, in the left-hand bottom corner. All the other details are enlarged. The plant, which at present is about 4 feet high, is loose and straggling in habit, as if it grew naturally among bushes and availed itself of their support. It branches at intervals, and apparently may grow to a much larger size. The distichous leaves are drooping, about 6 inches long, and the short many-flowered racemes are borne at the ends of the branches. The flowers are white, except that the lip has a yellow mid-line and a row of rosy-purple spots on either side, with the anther-case dull purple. It is a very interesting addition to the somewhat meagre list of Tropical African Orchids. It is named in honour of the late Mr. G. Bentham, the well-known author of numerous classical botanical works, whose revision of the *Genera Plantarum* has well been termed "a masterpiece of research and scientific taxonomy," and is certainly a great advance on anything which preceded it. The genera previously named in his honour have been singularly unfortunate.

The *Benthamia* of A. Richard has proved to be identical with *Hermidium*; and that of Lindley is only a section of *Cornus*, characterised by its drupes being united in a fleshy syncarpium. But as this is generally known in gardens as *Benthamia*, it seems best to add the prefix "neo" (as has been done in several similar cases), in order to prevent confusion. The specific name *gracilis* refers to the slender habit of the plant. *R. A. Rolfe.*

ROSES.

MR. T. W. GIRDLESTONE AT HOME.

I AM not going to imitate that hateful institution of the Victorian era, the Society paper. I cannot really tell which foot my friend puts on the floor first, when he rises in the morning, whether he likes his egg boiled hard or soft, or any of those numerous trivialities concerning his domestic life which seems to find so much favour with those who cater for the curious craving about other people's business, which demands and obtains so much pabulum of this nature, for I think that most people will consider my friend is really at home when he is in his garden, and it is of this garden I propose to give a very imperfect sketch.

It was on a pleasant afternoon in July that I arrived at Sunningdale Station, from whence a walk of about three-quarters of a mile brings one to the charming residence which Mr. Girdlestone's father created, and which he still lives to enjoy. About fifteen years ago Mr. Girdlestone reclaimed the land arround from that barren heath-like character which forms the principal feature of this part of Berkshire, near Ascot and Bagshot, the Bagshot and peat sand, but a favourite region for what are called American plants. We have all seen and admired the wonderful *Rhododendrons*, *Azaleas*, &c., which the Waterers, the late John Standish, and Mr. Noble were and are wont to produce. Conifers also flourish in a region where seedling Firs are for ever showing themselves, where the heath has not been brought under cultivation, and for that very reason one where loam-loving Roses would not be likely to flourish. But love and labour conquer all things; and as Roses had to be grown,

the soil had to be made for them. How well this was done, we know from the success which attended Mr. Girdlestone's exhibits before he took up with the single Dahlia! Oh! what a fall was there, my countrymen! and now a good portion of the ground once occupied by them is given over to common uses.

On the front of the house there was evidence that Roses do thrive here; a fine plant of *Maréchal Niel*, from which 300 blooms had been cut this year, testified to this; nor did it, although it has been many years planted, show any signs of canker. Being specially interested in the single Roses, which Mr. Girdlestone has made a specialty, and in which he is so well up, I was, of course, anxious to see them, and especially the grand plant of single *Polyantha*, of which a photograph appeared some time ago (Nov. 26, 1887). On our way to it, we passed the rockery, which in spring must have been a beautiful sight; but as all cultivators of alpine plants know, July is not a month in which they show to advantage, the Primroses, the Gentians, and allied species are over, and it is in the herbaceous border rather than on the rockery we are to look for points of interest.

saw it, was one sheet of bloom. Truly a sheet! just as white as one, not a green leaf to be seen; and as I stood in admiring wonder before it, I could not help saying, "Well, it was worth all the journey to see this alone," and it is within the reach of everyone who has a garden. It is perfectly hardy, grows very rapidly, and while it lasts, is unsurpassed for chaste loveliness. Then Mr. Girdlestone has been experimenting on it as a stock, and he speaks hopefully of it, especially for Teas. Of this doubtless we shall hear more by-and-by. Most of the single Roses, of which Mr. Girdlestone has an excellent collection, and in which he is an adept, were past, but one *Macrantha*, one of the very finest of them all, was still in flower, this has a large pure white flower, the centre filled up with light yellow stamens. The Moss and other summer flowering Roses were also over. The principal feature of Mr. Girdlestone's Rose culture at present is, I think, the Tea Roses. Indeed, one could not help sighing as we passed up where the Hybrid Perpetuals used to be grown so well, and to find "*Dahlia Street*" taking their place, and Cabbages occupying it in

being a good exhibition Rose. He had a favourable report to give of Mr. James Wilson, but I very much fear whether the Rose which the same firm has named after him will be quite worthy of the name it bears. That Tea Roses are grown well here is evidenced by the fact that Mr. Girdlestone won the Silver Medal of the National Rose Society for probably the largest bloom of *Comtesse de Nadaillac* ever exhibited, and this in so unfavourable a season as the present, was a great feat. It would be tedious to enumerate the fine flowers we passed—the *Nermets*, *Edith Giffords*, *Pirolas*, &c.; suffice it to say, that all good kinds were to be found here, one of each against a wooden fence, and the remainder of the row planted to the border, some five or six plants in a row, thus giving an excellent opportunity for viewing and recording their doings.

Of course, many good Roses are to be found here. When Mr. Girdlestone met me at the station he had a stick in his hand which might challenge comparison with a Tipperary shillalagh. This was cut from a *William Allen Richardson*, so it will be readily imagined how that favourite Rose flourishes here. *L'Idéale* is a formidable competitor, for it has a lovely variety of tint wanting in the older flowers and seems as if it would be equally vigorous.

It would take up too much of your space to enumerate the charms of this delightful home of flowers; but it may be enough to say that there is perhaps but little of outdoor floriculture that does not find its representatives here, and that intelligence and skill of no mean order are brought to bear on their cultivation, with a success that is apparent on all hands. *Wild Rose*.

FLORISTS' FLOWERS.

THE CHRYSANTHEMUM IN SEPTEMBER.

We had fully-developed flowers of those handsome early-flowering varieties, *Madame Desgranges*, white, with a tinge of yellow at the centre; *G. Wermig*, primrose; and *Mrs. Hawkins*, golden-yellow; the two last-named being sports from *M. Desgranges*. They are right welcome additions to the greenhouse at this season, grown with three flowers on each plant, which is about 3 feet high. There are other varieties which are also welcome inmates of the greenhouse, and beautiful in the open garden for filling beds or borders. The blooms appear before the autumn-flowering *Michaelmas Daisies*, and require the same kind of treatment. From what I have observed in various public and private gardens, the *Chrysanthemum* proper promises well for flowering in November, and should fine weather set in and continue during September, we may have an early as well as a good bloom. The buds are not late; we have been "taking" our buds from the middle of August, and by the end of the first week in September all, or very nearly all, will be set. This setting of the blooms is an important matter, and requires of the cultivator a good eye and a steady hand. If you peer into the centre of the shoot, one of three at the top of each plant, there is the tiny flower-bud, less in size than a pin's head, and immediately below it, in the axil of every leaf, growths will be noticed which are pushing upwards; if these are allowed to grow, the flower-buds will perish, and as they are robbers of the buds from the first, the sooner they are removed the better. Take the shoot in the left hand, hold it firmly, and snap the leaf-buds over with the little finger nail of the right hand, and those leaf growths which are very close to the flower-bud must be removed very carefully indeed, else the bud will go too, and the work of a season will be lost so far as that particular bud is concerned.

We have had some ills to worry us during the season, the sharp frost in May caught the plants, and we now see its effects on the leaves. A little later the leaf-burrowing maggot became a source of worry, and remained for many weeks, every plant had its quota of burrowers; in some instances, a score or more on one plant, we had no alternative but



FIG. 33.—NEOBENTHAMIA GRACILIS. (SEE P. 272)

One is continually coming upon such points. Here, for instance, is a bed of *Oenothera taraxicifolia*, about which I am somewhat puzzled. I have one apparently similar in flower which I received under the name of *marginata*, but its foliage is quite different, and it has an unpleasant habit of getting away from where it was planted and appearing elsewhere. A plant of it I had has entirely gone from where I placed it, and has travelled under the walk and appeared on the border at the other side. Here again we come upon the ubiquitous *Shirley Poppies*, in their fine variety of colours; and, of course, the *Iceland* proper and another, *P. altaica*, with terra-cotta coloured flowers, which goes very well with the *Iceland*. We also came upon a fine plant of the single *Polyantha*, which in my ignorance I supposed at first to be the plant so well known by the photo which appeared in the *Gardeners' Chronicle*, and by Mr. Girdlestone's vivid description of its beauty; but I was soon convinced this was a mere baby in comparison with that which I soon came upon, and which for floral beauty it was impossible, I think, to find anything to excel. It is now from 15 feet to 20 feet high, and about 30 feet in width, and when I

other places. The Hybrids are grown out in groups of one sort, and certainly serve for decorative purposes; they do not consequently receive that individual attention they used to do, when each bloom was carefully watched. In excuse for this lamentable defection, one has to say that Mr. Girdlestone is a busy man, that his engagements have increased very considerably during the past two or three years, and that the Rose show season comes at his very busiest time.

A large number of the best varieties of Teas are grown in rows, so that they come under the careful notice and critical acumen of their owner; frauds are detected and beauties enjoyed, and as Mr. Girdlestone is well-known by raisers of flowers, they are often to be seen here before they are seen elsewhere; and, indeed, I believe some have their doom pronounced here, and never appear before the public. Of the newer Teas, *Ernest Metz*, *Cleopatra*, and *Madame Hoste*, were all considered good; the latter is, perhaps, a little deficient in fulness of flower, but its bud is, I think, the most pointed of any Tea Rose known; and although somewhat thin, not so much so as to prevent it from

to follow them in their windings and destroy every individual specimen by hand. With the advent of July, thrips came in clouds—they always do here whenever the hot weather sets in—the hundreds of Carnations all over the place seem to be a breeding-ground for them, and day by day the tobacco-powder was dusted on to them. We have tried several "patent" appliances to distribute the powder, but after a time we fall back upon the penny tin pepper-box. The thrips are not yet gone, nor will they go until the flower-buds show round, and hard well above the foliage. They lodge and board in the creases of the tender young leaves, and the fight with them must be continued until the leaves are fully developed, and too hard for their sucking apparatus. Ten days ago we saw the first traces of mildew, and the first traces of Potato disease appeared with it. Doubtless certain atmospheric conditions favour these fungoid growths, which, although they may be specifically different, are yet so nearly allied that they thrive under the same conditions of the atmosphere. We can check the mildew for the time with sulphur applied in powder, or used in a liquid state, dissolved in warm soft soapy water. The Potato disease beats us, and ever will, I fear, from the impossibility of reaching it with the disease destroyer.

We began to feed the plants with stimulants about the middle of August, powdered bones and gnan, mixed with three times their bulk of soil, as a surface-dressing, a space being left for two applications at intervals of two weeks. The second time, Thomson's Vine Manure was used. A change of diet is as necessary for plants as for men and animals. Sir Walter Scott states, I think, in *Guy Mannering*, that at one time the labourers on the farms in Scotland used to stipulate that they should not be supplied with salmon oftener than two or three times a week. They tired of the rich food, and, believe me, there is a much closer relation between the cultivator and his plants, in the matter of treatment, than most of us seem to think; at any rate, Chrysanthemums suffer if they are under or over-supplied with stimulants, and every observant cultivator will bear me out when I say that they do best with a change in their diet, and a change of air is good for Chrysanthemums as it is for Carnations. We may go further and say, that they are much more influenced at the time of the development of their flowers by the effects of light and judicious ventilation than we are. The above may seem to be but verbiage to some, but I fear we pay too little attention to the mysteries of cause and effect in their relation to plant-life.

The Editor constantly tells us that, "He that questioneth much shall learn much." I wish he would tell us why some of our plants grow 3 yards in height, while others are content with an altitude of 3 feet? We do not want the extra 2 yards of stem. Our plants of Madame Audiguier will certainly touch 12 feet in height before the flowers are developed. We want varieties like Avalanche and Edwin Molyneux, the best in quality of flowers, and displaying their blooms below the eye of the cultivator; Louis Buehner, too, is a nice dwarf variety. It cannot be a sport from Mrs. Alpheus Hardy, as it is scarcely like it in foliage, and not so tall by half.

Many of the very best new varieties grow to a convenient height, I could name a score. We cannot expect ladies to mount a step-ladder to examine our specimen blooms. We must appeal to raisers not to save seeds from the very tall varieties—we can do without them. The specimen plants are now receiving attention. To make a handsome bush of a large-flowered Chinese or Japanese variety, each individual growth requires a neat stick, those sold in bundles are too thick; we get bundles of laths, and make them of the thickness we like. Pompons, the "Chusan Daisy," as the late Mr. Fortune termed them, need no artificial supports. Some have much better habits than others in this section. They require manure-water now freely, and surface dressings also if the space on the top of the soil admits of it. *J. Douglas.*

DOES IT PAY TO GROW APPLES?

MR. DOUGLAS, in his article on the above subject, says very much of what is true on this subject; but I think he is rather hard on the farm labourers when he so unfavourably compares their work with the spade to that of either tailor or shoemaker. Were he living where I am, in the midst of a purely agricultural district, he would have just reason to apologise for the comparison. I am willing to admit that there are black sheep in every fold, but the average labourer about this part far excels the tailor or shoemaker in the use of the spade, for tailors there are none, but plenty of shoemakers, whom I never see use a spade for the reason that this tool is quite useless here, the soil is of such a character as not to admit its use, being very strong and stony—not exactly clay, but a near approach to it. The four-tined fork is the tool for digging invariably used, and in many cases if it is advisable to go deeper than 1 foot, it becomes necessary to invoke the aid of a pickaxe. Now comes the work which, I think, Mr. Douglas's article under-estimates—that of stirring the soil to a depth of 15 to 18 inches deep by a steam cultivator; in soil of a light nature this depth might be reached, but here it would be a serious task for any instrument to go down to that depth, certainly not for 15s. per acre.

Much of the land hereabouts is moved with the aid of a cultivator, but I have not seen any done deeper than 1 foot, and that certainly not for the price quoted, but just double that. In this respect, I consider the remarks on that point misleading, as would be found out on attempting to prepare an acre of land for fruit culture, where the soil is of the nature described. Still, Apples can be made to pay in this soil, but sorts must be chosen that will succeed, and there are those which will do this. The common mistake is, that of planting too many kinds, without first having proved their suitability to the existing soil.

Those persons who wish to embark on Apple growing only in such a soil as I have to deal with, would do well to follow the plan I have adopted, and which would be found to incur a small labour bill after planting is completed. It is not every person who cares about the trouble and labour which small fruits planted between the Apple trees incur, but who still wishes to make the Apple trees pay a fair return for the outlay, in preference to depending upon corn and other agricultural crops; and besides, those who have a partiality for trees, Apple or otherwise, may ride their hobby, and without a loss in expenditure. Under similar circumstances to these, I planted early last November over 1000 Apple trees in a grass-field, in soil exactly like that described. We planted only twelve varieties, it having been previously proved that Warner's King, Ecliville Seedling, Mère de Ménage, Worcester Pearmain, Cox's Orange Pippin, Irish Peach, and King of the Pippins, did succeed annually, never having for the last ten years failed of a crop.

In addition to the proved sorts named, Bramley's Seedling and Lord Grosvenor were given a trial, and these, from present appearance, justify the selection. At the present time, bush trees of the latter are bearing splendid fruit, quite ready to pick and send to the market, which, if they did not bring the prices quoted by Mr. Douglas, would fetch 5s and 6s. per bushel locally, which would soon pay a return for the outlay.

Instead of breaking up the whole 5 acres, as suggested by Mr. Douglas, we staked out rows, 30 feet wide, for standards, and the same distance apart in the rows. Between each standard was planted one bush tree, and between these rows was arranged another row of bushes, which were kept to within 15 feet of each other in the rows also, so that altogether the land is planted all over at 15 feet apart, the idea being to utilise the space with the bushes until such times that they were interfered with by

the standards as the permanent trees. The reason for retaining the grass between the trees was with the double object of saving labour and of obtaining a hay crop annually, which will pay for all the labour the trees will require, now that they are planted, for the next ten years, and by that time the space between the trees will be limited. What we did in the preparation of the soil was this: a contract was made with a labourer—not a shoemaker or tailor—to dig out the holes 4 feet square on the surface and 2 feet deep, throwing the soil out, the turf and top spit on one side, the subsoil—which in some instances was nothing more than the nearest approach to clay that it is possible to get, mingled with large and small flint stones—on the other side; the bottom of the hole was broken up another 4 inches, and left there, which provided for a quick percolation of surplus water from heavy or continuous rains. We find this a much better plan than draining such land, it not being absolutely necessary to lay drains here; the flint stones act as coveying-channels for the water, and especially when the soil has been once loosened. Although water does not actually lie in this soil, owing to its retentive character, the moisture renders it particularly cold in the winter and spring. The price paid for digging the holes was £15. In filling them in, the worst soil, of course, was put at the bottom, reserving the top spit for the surface; the trees were planted on slightly raised mounds, covering their roots with the turf, chopped about 3 inches square. A good mulching of half-rotted farmyard-manure was laid on the surface, covering the whole 4 feet square directly the trees were made fast in the soil. No manure was mixed with the soil in planting.

In planting Apple trees two very essential points towards achieving success we endeavoured to carry out—that of allowing the roots to remain uncovered the shortest possible time during planting, and staking them at once to prevent the roots being moved by wind-rocking the trees; in our case the roots were but about 3 or 4 inches covered. Many persons make an error in not staking those trees which require it at once, but put it off until all are planted. I make a point of securing all fast the same day they are planted, which I have many times proved by experience is the correct thing to do. I omitted to say that, in planting, the roots of every tree were carefully examined, and any wounded root was trimmed carefully above that part which was broken; this I consider more important than many persons imagine.

Pruning the trees was not a very long job, but required some care and thought. Various are the opinions expressed by different persons as to the right way of dealing with Apple trees the first year. Some aver that the previous year's shoots should only be shortened at the points, while others declare in favour of those pruned to within 4 inches or so of the base. To this latter plan I am inclined, and carried it out in nearly all cases of the standard trees; just a few were left longer to note the difference, which already proves the wisdom of closer pruning. Trees which are cut to within 4 inches or so break vigorously, and grow freely, leaving no bare space behind; but where the shoots were simply shortened a few inches, bare spaces are visible some distance from the base of the previous growth, and the growths made are but weakly. Next pruning-time the points of the longest shoots only will be taken off, allowing the remaining eyes to push into growth, or lay the foundation for future fruit-spurs, which they will do shortly. Many of the shoots on the standard trees are now (August 15) 2 feet long; the bushes have made growths even longer than that; on the whole, the trees look remarkably well, and are forming numerous fruit-buds.

Instead of allowing the trees to flower and bear fruit, nearly all were denuded of the blossom-buds before they had time to expand, which plan, no doubt answered in assisting the growth so much better than would have been the case if much fruit had been allowed to set. In some instances the bush trees showed over twenty trusses of bloom.

With regard to the mulching of the surface of newly-planted fruit trees, I consider it is absolutely essential, to obtain the best results; but I am convinced it can also be carried too far when dealing with soil like ours. Mulching the surface is done with the aim of keeping the roots free from frost during the winter, and maintaining them in a moist state during the summer, and for these reasons it should not be neglected; but there is an evil in this if carried out without any other consideration. Although the mulching maintains the roots warmer during the winter than they would be without it, it must not slip the memory that the same mulching renders the soil cold during the spring, when it ought to be getting warmer. Those who lay on the mulching in November, say, and never think of removing it until it is too late by its decay, do not appear to think the roots would be greatly benefited by having the little soil there is above them warmed by the sun during the early part of May.

paper on *Halophila*, and subsequently by his researches on the difficult genus *Pandanus*; whilst his travels in Rodriguez, Socotra, and elsewhere, furnished him with the means of publishing elaborate treatises on the botany of those regions. Thus in 1874 he was appointed naturalist to the "Transit of Venus Expedition" to Rodriguez, and in 1880 he explored, at the instance of the Royal Society and the British Association the Island of Socotra. *Begonia socotrana* was one of the plants obtained in the latter expedition, with which the Professor enriched our gardens. Professor Bayley Balfour is a most energetic and industrious worker, editing the translation of various German standard works on botany, published by the Clarendon Press, of which the latest has only just issued from the press, the translation of Count Solms-Laubach's *Fossil Botany*, as well as the *Annals of Botany*. In Edinburgh, of course, his services are in constant request, not only in the university class-rooms and

time of my visit they were nearly all in bloom; I counted on some of the spikes as many as thirty-five flowers of the finest quality. The number of flowers on each spike varied from twelve up to thirty-five. One plant of *C. Alexandræ* in a 14-inch pan had sixteen fine leads. This collection consists principally of *O. crispum*, *O. Stevensii*, *O. Warneri*, *O. Halli*, *O. Chestertoni*, *O. guttatum*, *O. Andersonianum*, beside many other very fine varieties; there was also a beautiful specimen of *Oncidium macranthum* in full flower along the roof. Another house is devoted to *Odontoglossums* and *Masdevallias*; of the latter there is a splendid lot of all the leading kinds of the Harryana type. In another house there are some good specimens of *Cattleyas*, including the best sorts of *Trianae*, two or three good *C. labiata*, the true autumn-flowering variety; also *C. Mossiæ*. In this house there are a number of plants of the choicest *Dendrobium*s. Mr. Boyes commenced Orchid-growing some eight or ten years ago. I did not see a single plant in the whole of this collection but what was the picture of health and vigour, showing that he has studied carefully the wants of every variety; moreover, he does not hesitate to give anyone interested in their cultivation the benefit of his experience. This collection of Orchids, although not a large one, is well worth paying a visit to by any lover of them.

A STANDARD OF BEAUTY IN VIOLAS.

Scarcely a day passes, at this time of the year, but I am called upon to express an opinion on the merits of seedling *Violas*. The young amateur sends a dozen flowers and a carefully tabulated list. The old expert sends a box of blooms all numbered or named, telling you they are all good, and saying that the world cannot do without them. This indicates a widespread interest in *Viola* culture, and a great striving after novelties. The question I should like to ask, and endeavour to answer in this short paper, is one something like the following:— Can beauty in a *Viola* be defined? To make it conform to the florist's Pansy will, I am afraid, spoil the *Violas* [Hear! Hear!]. Something altogether different must be aimed at. Certainly, *Violas* must be judged from two standpoints—as bedding-plants and as cut flowers; what is suited for the one purpose being sometimes quite unsuited for the other. For bedding, distinct colours will always be wanted, but other qualities are required, such as a good habit of growth and free continuous blooming, and good substance in the flowers to stand weather, &c. By decided colours, I do not mean white, yellow, and blue only, but all the different shades and combinations of these colours which are effective and pretty in the mass. This brings me to speak of *Violas* in another relationship—namely, as cut flowers, either for table decoration or for exhibition purposes. In trying to decide what forms, colours, and combinations are best suited for these purposes, I find the greatest difficulty. This difficulty is increased by the multitude of fairly good things which are raised from seed every year, and by the temptation to name varieties quite good enough in themselves, but differing only slightly from some in commerce. Every person has his own standard of beauty in a way, and it is difficult, nay, almost impossible, to fix a general standard by which all men may judge of the beauty of such things as the finer *Violas*. If I consult Ruskin, he tells me "that all good colour is in some degree pensive, the loveliest is melancholy." He also says:—"The sensation of beauty is not unusual on the one hand, nor is it intellectual on the other; but is dependent on a pure, right, and open state of the heart for its truth and for its intensity. . . We do indeed see constantly that men having naturally acute perceptions of the beautiful, yet not receiving it with a pure heart, nor into their hearts at all, never comprehend it nor receive good from it." If this is all true, the idea of erecting a standard of beauty must be for ever given up. I cannot help thinking, at least, that before any one becomes really able to appreciate what is lovely in *Violas*, he must enter into a sort of sympathy with his flowers. When this feeling



PROFESSOR ISAAC BAYLEY BALFOUR.

There is no comparison in the growth of trees which have the mulching taken off for a week or two, at the time stated, and returned before there has been time to dry the soil to such a depth as to injure the roots. Where persons make a mistake in this apparently small item, it is in considering that it is incurring too much labour to take off and replace the manure. *S. H.*

laboratories, but at societies and institutions, so that he maintains at the highest standard the renown of the great Edinburgh University in matters of science, and of botany in particular. To him will be referred, as supreme arbiter, any question which may arise as to the interpretation of terms in the schedule of the great show next week.

ISAAC BAYLEY BALFOUR.

THE worthy son of a worthy sire now holds the position so long held by his father, John Hutton Balfour, as Regius Professor of Botany, and Keeper of the Royal Botanic Garden, Edinburgh. He was born in 1853, and after a distinguished career at the University, studied in Germany under De Bary, and became successively Professor of Botany at Glasgow and at Oxford, from which latter university he removed to Edinburgh. Professor Balfour achieved a great reputation in botany by his

SCOTLAND.

BURN PARK, UDDINGSTON.

I HAD the pleasure the other day of seeing this collection of Orchids. There are three very nice houses exclusively devoted to this class of plants. Mr. Boyes tends to them personally, and I must say that this is really as choice and well-grown a lot of plants as one could desire to see. One house was filled with *Odontoglossum Alexandræ* alone, and at the

has been developed, we may find, as Mr. Ruskin says, that we appreciate the most delicate forms and colours, because they are the loveliest, and that we really make no effort to do so. How is it that, in wandering through a border planted perhaps with a thousand seedlings, all different in form, in hue, and in habit, the peculiarities of one or two take possession of me to the exclusion of all the others? How is it that different men, with a true love for *Violas*, would go over the same flowers, and arrive at identical conclusions without being in collusion in any way? This almost proves that there must be a standard somewhere, but how are we to find it? Some one says, take what the public wants and you will be right! This may be a very good commercial maxim, but I do not believe in it, for the reason that the public does not know what it wants. It is looking everywhere for guidance, and waiting to be educated in such matters. I would far rather say, take for a standard the varieties which, by common consent, are admittedly beautiful, whether old or new. To my mind, it will be difficult to get better and more lovely sorts than Duchess of Sutherland and Ardwell Gem; they are simple, pure and delicate selfs, the one lavender, and the other pale yellow. William Neil, Duchess of Fife, and Bridesmaid, are the gems of the last two seasons. All these five are lovely to me on account of their purity and sweetness. There is nothing vulgar in their appearance, and a spray of any one of them would charm the most refined and aesthetic taste. *Wm. Cuthbertson, of Dobbie & Co., Rothesay.*

THE SALE AT MILLBANK.

The distribution by public auction, in Edinburgh, on September 10, of the Millbank collection of exhibition plants, will be a matter of no small importance. Mr. Mitchell, horticultural auctioneer, has been entrusted to wield his hammer over one of the finest collections of specimen *Ericas*, *Azaleas*, stove and greenhouse plants, Palms, Orchids, &c., ever placed before the public in Scotland. Mr. Paterson for a number of years has taken the lead at the Royal Caledonian Societies' exhibitions, and, in spite of considerable competition, has worthily held his own; and in the annals of this society his name figures conspicuously as a prize-winner, always in the first rank. The sale has been fixed to take place on the second day of the International Show, so that visitors may have the privilege of seeing this valuable collection; and the lovers of well-grown plants will have a splendid opportunity of possessing themselves of rare and unique specimens. We especially call attention to the *Ericas*, amongst which *Maraocckiana*, insignis, retorta major, and *jubana rubra* conspicuously figure. The *Azaleas* are also models of cultivation, well set with bloom for the next season, *Duc de Nassau*, *Charmer*, *Iveryana*, *Stella*, *Mrs. Turner*, and *Deutsche Perle*, are particularly worthy of notice. The Palms are also worthy of consideration, notably *Phœnicophorum Sebellarum*, *Cocos Weddelliana*, *Phœnix rupicola*, and *Kentia australis*. Of the Orchids it would be worth while to mention the whole, but *Masdevallia Walkeriana*, *M. Lindeni*, *Cypripedium hirsutissimum* and *C. Spicerianum* may be particularly noted, they are all in good and creditable condition. *W. E. D.*

THE POLLINATION OF FLOWERS.

In the lecture-room of the Royal Botanic Garden, Edinburgh, on Saturday evening last, Professor Bayley Balfour delivered another of the course of botanical lectures to working men. He showed, in speaking of the function of the flower, that it was concerned in the production of the seed, and so in the reproduction of the plant. The act of pollination must be accomplished in the first instance. It might be self-effected in a flower, but this was prevented in many flowers by various arrangements, e.g., the relative position of anthers and stigma, as in Orchids; by the non-simultaneous ripening of anthers and stigmas in a flower, as in Plantain, where the stigmas were ripe first; and the Mallow, where the anthers ripened first; by

the stamens and carpels being placed in different flowers, as in *Campion*. The Professor also spoke of the various means by which cross-pollination was brought about by animals and the elements.

CUTHBERTSON'S NEW LEEK.

This new variety of Leek, raised by Mr. Cuthbertson, Public Park Nursery, Rothesay, Buteshire, and sent out by him this season, seems to fulfil all the conditions required of an exhibition Leek. At Sangball, Chester, Shrewsbury, and at Glasgow (Hutchistown Gardens), they were greatly remarked. At Ferdale show (Wales), these Leeks were "the feature of the show."

CHINA-GRASS IN DUNDEE.

We have before us a sample of this material made from the fibre of *Boehmeria nivea*, a kind of Nettle, and prepared by Messrs. Donald Brothers, Victoria Chambers, Dundee. The hanks are silky, soft, brightly-tinted, ready for the loom. Its success is already assured. Where the French material cost 3s. 9d. per pound, this costs but 2s. 6d.; where the former takes over twenty days to prepare, the latter is turned out all complete in eight days.

Here surely, if anywhere, "Necessity has proved to be the mother of invention." For we have to compete with the Saxons and Belgian working (by the family) at the rate of half a franc a day each member; add to this the advantage of working up a new vegetable fibre in competition with dearer materials used here, and there are good grounds for cultivating the inventive faculties. And thus we are able to hold our way in the world's markets, always retaining beauty of design, and beautiful—though necessarily much less costly—material.

TREES AND SHRUBS.

ABIES OR PICEA MAGNIFICA.

We are indebted to the Rev. Robt. Dayrell, of Lee Grange, near Shrewsbury, for a photograph of a fine plant of this species. It has attained a height of 19 feet 7 inches, and a diameter of 11 feet. This is one of the finest specimens that has come under our notice, and is a symmetrical well-grown tree. Mr. Dayrell's collection of Coniferae is very rich in species and varieties.

THE WEEK'S WORK.

THE FLOWER GARDEN.

THE FLOWER-BEDS.—The recent heavy rains have committed great havoc in the beds, flowers having been totally stripped from the stalks in many instances, and the plants themselves much knocked about; and this coming at a time when all the beds were resplendent masses of colour, has made the mishap all the more striking. Carpet-bedding also looks the worse for the deluge, and where *Dahlia*s and such-like plants were not properly secured great damage has been done. However, if we are vouchsafed fine weather, the garden will again become bright. Meanwhile clear off all the dead and damaged flower trusses and leaves as speedily as possible, and sweep lawns and walks which are greatly litter-strewn; afterwards sweeping over the green sward, and rolling the latter. Beds of *Verbenas*, *Petunias*, *Phlox Drummondii*, *Gaillardias*, and similar plants will to be cut into shape, and the shoots thinned out, otherwise they will not show to advantage. Continue to pick off the flowering shoots of *Cineraria maritima* and other foliage plants as they appear, and peg down and pinch the shoots of *Perilla nankinensis* and *Iresines* as occasion renders necessary. Trimmings of the variegated *Mesembryanthemum*, of *Alternantheras*, variegated *Alyssum*, *Gnaphaliums*, *Pelargoniums*, and *Verbenas*, may all be used as cuttings to increase the stock of these plants.

HERBACEOUS PLANTS.—These, too, show sad effects of the unpropitious weather. The removal of broken shoots, and the securing of the remainder to their supports will demand early attention. Perennial Sunflowers, *Phloxes*, *Michaelmas Daises*, and *Anemone japonica*, both rose and white varieties,

are in good condition, the rain having but little effect on them. *Hyacinthus candicans*, whose tall flower-spikes are thickly studded with beautiful white pendent flowers are still effective. This "Cape Hyacinth" is not grown so extensively as it deserves to be, the spikes of it contrast most effectively with those of *Lilium tigrinum* *Leopoldi*, *L. lancifolium*, *L. Krætzeri*, *L. auratum*, and varieties of the *Gla-diolum* generally, intermixed with herbaceous plants for giving variety to the autumn display. *H. W. Ward, Longford Castle, Salisbury.*

THE KITCHEN GARDEN.

CABBAGES.—The ground should now be prepared for the main crop of spring Cabbages, for which the recently-cleared *Oaion* beds, if previously well manured, will prove excellent spots. But if the soil of the garden is heavy and tenacious, it will be good practice to dig and manure a quarter for them. I prefer to plant Cabbages on rich land made firm by treading, or on the site of an old Strawberry bed, with no more preparation than breaking up the surface. If the land be poor, it should receive a heavy dressing of rich manure, and should be bastard trenched, which is especially necessary when the large-growing varieties are to be planted, and where the stumps are left standing for the supply of a second crop. If early and late kinds are to be planted together, keep each by itself. A distance of 1 foot apart is sufficient for the early sorts of Cabbages, and 1½ to 2 feet between the rows for large varieties. Always elect the strongest plants, and plant as soon as they are ready, and in showery weather. It is better in most gardens to plant in drills, but in heavy land planting on the flat is more desirable. Where slugs abound, lime and soot should be freely used on the soil round about the plants; and if clubbing is feared, the plants should have their roots dipped in a puddle made of soot, wood-ashes, and clay, with a handful of sulphur thrown in.

CARROTS.—Thin the late sowings of Early Horn varieties at first to about 2 inches apart, the later thinning being done as the roots are drawn for consumption. Keep the hoe in constant use between the rows.

CELERY.—Proceed with the earthing-up of the early crop, doing it at intervals of about a fortnight, first chopping down a quantity of soil from the sides of the trenches, and breaking it up finely and leaving it for fourteen days before placing it around the plants. In earthing-up, hold the leaf-stalks in their natural position close together with one hand, whilst the soil is drawn up around them with the other. This operation should only be done during dry weather. A final watering should be afforded the plants before the earthing-up is begun.

WEEDS.—During the present month, opportunity should be taken to thoroughly clean the garden of weeds, and one or two good cleanings made now will go a long way towards maintaining a clean appearance for the rest of the year. Where the hoe cannot be used, as in such cutting weeds, hand-weeding must be resorted to. The removal of all decayed vegetables, spent crops, or other unsightly objects should be attended to. Manure intended for use this autumn should be turned over during showery weather, and thoroughly mixed and otherwise prepared, and accumulations of rubbish burnt, and the residue passed through a sieve or screen. Of the finer parts of these screenings a portion should be kept in a dry state for dusting over seed beds and young crops when necessary. *C. J. Waite, Glenhurst, Esher.*

THE ORCHID HOUSES.

THE EAST INDIAN ORCHIDS.—The nights having become cold for the season, much attention must be paid to the temperatures, and during the day the warmth should be kept up by means of the fires when storms arise. The growth of a great number of the plants which are placed in shady parts of the houses is unusually soft this year, and much care will be needed to ripen them; and to this end the ventilators should not be quite closed for more than two hours, and this only when the plants are undergoing fumigation. Take the precaution to give the warmer houses a mild fumigation with tobacco once or twice a week, which will do the plants no harm, and which if neglected, no matter how careful one may be, thrips will be sure to make their appearance, and then strong measures will be required to stop the injury to the plants. Sometimes shading will not be necessary, except for those plants which are very full of

sap from the loog continued dull weather. I have for many years ceased to use shadings on Cattleyas after September 1, but in case of strong sunshine occurring after this date some amount of it will be beneficial. The Phalanopsis may for one month longer be afforded very weak liquid-manure, such as guano-water or farmyard drippings, which is what my plants receive alternately each week. Maintain a genial temperature for some time yet, the East Indian house not under 70° during the night; the Cattleya house, 68°; the intermediate house, 60°; and the cool division at 50°. *A. G. Catt, Parkfield, Hallow.*

FRUITS UNDER GLASS.

FIGS.—The trees in the earliest house must now get thorough exposure, and, if the wood is crowded, it should be thinned, as it is impossible to get well-ripened shoots unless this is done, so that early thinning is an important operation when early fruit is required; indeed, it is best to sacrifice a few late-formed fruits in the early house than to delay the ripening process. Continue to syringe the trees in the afternoon on bright days, so that the foliage may remain clean to the last, and afford water so that the roots do not suffer from want of it; and if a good mulch is applied when the second crop is swelling up, less water will be required. The top and bottom ventilators should be opened wide, and a little warmth maintained in the hot-water pipes in dull weather and on cool nights until the new wood gets thoroughly ripened. Early Figs in pots that have finished growing may be removed to an open sunny border and plunged in, but taking care to keep worms out of the pots. Plants in bearing should be afforded manure water, with free circulation of air. Any shoots not wanted may be thinned out, which will hasten the ripening of fruits and wood, as there will be no time after the fruits are gathered; mulching the surface with rich manure-water thoroughly when watering is required.

TOMATOS.—Now is the time to secure plants for winter cropping; and as is now well understood, the fruiting plants in the winter always need much care if a fair crop of fruits is to be gathered at that season, and delays now make much difference in the size of the plants. I advised preparation of the late lot of plants a month ago. These should now be freely growing, and whatever way the plants are raised, either from cuttings or seeds, no check should be given them; but they should be shifted into their fruiting pots, as the pots they stand in get full of roots. A cold frame or house is better for them than a warm pit, the temperature afforded ranging at night from 50° to 55°, giving fire-heat only if the weather be rainy and sunless, and then airing the place freely at the top by day. In potting, use well-drained pots, and good loam with a sprinkling of bone-meal, other manure is not required, and pot firmly, as a hard, stout growth is what is wanted, and pots of 9 to 10 inches in diameter are useful sizes. No difficulty will be experienced in keeping up the supply of late fruits till the end of the year from plants just coming into bearing, so that the winter fruiterers should be allowed to make free growth, allowing the fruit to set so that they will come after the autumn-fruiterers are done coming into bearing. A batch of cuttings from good kinds should be struck, putting one cutting in a 60 or three in a 48 sized pot. These plants give fruits much earlier in the spring than those from seed. *G. Wythes, Syon House, Brentford.*

PLANTS UNDER GLASS.

DUTCH BULBS.—The bulb season being at hand, no time should be lost in ordering the requisite number of bulbs for all purposes, as by procuring them at an early date better results are obtained than by buying late. Where a long succession of Hyacinth bloom is required, the bulbs should be potted at different times; those intended to bloom at Christmas being potted forthwith, and those to come later should be potted at intervals of three weeks up to the middle of the month of November. A good compost for Hyacinths consists of two parts rich turfy loam, one of leaf-mould, one of rotted manure, and sufficient sand to keep the whole porous. Mix all these ingredients together, if possible, several weeks previous to potting. For decorative purposes, 5-inch pots are large enough, but exhibition bulbs require 6 inch pots. New pots will require to be soaked in water for twelve hours, afterwards allowing them to dry before using them. One hollow crock placed carefully in the bottom of the pot and covered entirely with a rough moss, or coarse cocoa-

nut fibre, will be found ample drainage for Hyacinths. In potting, fill the pots nearly full of compost, pressing it moderately firm, and make a small hole in the centre to receive the bulb, which should be made quite firm in its bed, and being about half covered with soil, but care must be taken not to press the bulbs too hard, as to cause the soil below it to become very solid—a frequent cause of the bulbs being forced upwards and out of the soil when roots are being made. If the soil is in a properly moist state, no water will be required after potting. Stand the pots on a coal-ash bottom in an open position, and cover them with Cocoa-nut fibre, coal-ashes, or sand, to a depth of 6 inches.

ROMAN HYACINTHS.—A most useful class of bulbs for early work, which may be had in bloom in November if the roots be potted without delay. Put four roots in a 5-inch pot, and treat them like the above. By fortnightly pottings, Roman Hyacinths may be had in bloom throughout the winter.

TULIPS.—These should be treated in exactly the same manner as the Hyacinths, except that several bulbs, according to their size, and the purpose they are intended for, may be placed in a pot. The best single-flowered varieties for early forcing are the scarlet or crimson Van Tholls, which, if they are potted now, will bloom at Christmas; though not large, these varieties are very popular. Others for pot-culture are White Pottbakker, large white; Joost Van Vondel, one of the best whites; Duzzat, dark scarlet; Van der Neer, fine rich purple; Keizerskroon, scarlet, with yellow border; Cottage Maid, white, flushed with pink; and Princess Marianne, white. Should Tulips be required for filling baskets or other like receptacles, they are best when grown in shallow boxes, filled with decayed manure and leaf-mould, afterwards lifting them separately, and planting them when in flower, as by so doing, an uniform display is secured.

FREESIA REFRACTA ALBA.—This is one of the most useful flowers, and one that is gaining in estimation. The flowers, white, tinged with yellow on the lower petals, will last in good condition when cut for several days. Four or five bulbs may be planted in 5 inch pots in light rich compost, and placed in a cold frame, covering the pots with Cocoa-nut fibre until leaf-growth begins, when the covering must be removed. These bulbs want but little water until they have started well into leaf, when they may be placed near the glass in a warm greenhouse. By potting the first portion of the bulbs about the beginning of the present month, flowers may be obtained by the end of the year; and by potting a few bulbs at intervals, they may be had in bloom till late in the spring.

POLYANTHUS NARCISSUS.—These bulbs are invaluable for early forcing, especially the double Roman and the paper-white varieties, and may also be potted in a rich compost, a little deeper than Hyacinths, and as soon as received from the dealer. Jonquils should also have similar treatment to the above, covering the pots with Cocoa-nut fibre.

IXIAS.—These are beautiful little plants for the greenhouse, which may be potted at any time during this month, using 5 or 6-inch pots, with from five to seven bulbs in a pot, of 48-size. Let the pots be well drained, and make use of a rather light compost, afterwards placing the pots in a cold frame; and to prevent the soil getting too dry, plunge up to the rim in Cocoa-nut fibre. Withhold water until they have started well into growth, when a portion of them may be removed to a warm greenhouse or pit, placing them in a light position, affording more and more water as growth proceeds. *R. Milner, Penrice Castle, Swansea.*

THE HARDY FRUIT GARDEN.

PREPARATIONS FOR PLANTING.—If it is intended to plant extensively, timely preparations should forthwith be commenced, and in selecting the ground to be planted, always, when possible, choose that which slopes towards the north, and has shelter from the north-east and west. Ground which has a sloping surface requires little or no artificial drainage, and the shelter enables the trees to escape the cutting winds and frosts of spring which cause so much loss. If long-lived trees and good crops are looked for, it is well to remember that what is worth doing at all is worth doing well. See that the drainage is efficient. Trench the soil fully 2 feet where time and means will allow of its being done, or bring the steam cultivator into use, stirring the soil deeply, and thoroughly freeing it of couch grass and other deep-rooted weeds,

putting plenty of manure into it if it be light and poor soil, and road-scrappings into heavy land. Plum, Pears, and Apples, should always have ample space between the trees, or crowding will occur in a few years after planting, the fruit will be small, and the wood will not ripen well. Do not plant for variety's sake, but plant only those of good quality in their various classes. King of the Pippins, and Ribston Apples, and several others, which are said by some persons to be fast dying out, will, if planted on good soil, and worked on healthy stocks, grow and produce as good fruit as they did in years gone by.

BLACK CURRANTS, GOOSEBERRIES, NUTS, AND RASPBERRIES.—These may be planted between the rows of Apples, &c, and will quickly yield profitable crops, and I may say here that even in Kent there is yet plenty of room for new plantations of fruit trees, and much need for the uprooting of many old and unprofitable ones.

WALL TREES.—Old trees past bearing good fruit should be replaced with vigorous young ones, taking the opportunity to have the walls themselves pointed and put into good order, and the old worn-out soil replaced with good sweet pasture loam. The area under cordons should be at first 3 feet wide and 2 feet deep, and this should be extended in width in a couple of years after planting. The bottom should be broken, and the land generally well drained; but if each station be drained separately, some turves, with the grassy side downwards, should be placed over the drainage materials. The best soil for the Pear is a mellow loam, with a sprinkling of plaster or old mortar, with a moderate quantity of wood-ashes or burnt refuse added, and a few crushed bones. Cordons should be planted 15 inches apart, which will soon cover the wall with fruitful growths, and the fine fruits quickly reimburse the planter for his outlay. New walls which are to be planted this autumn should have the borders put in readiness for planting. Peaches and Nectarines should receive attention first, and afterwards, the Pears; by making a proper selection of varieties of the former two, the trees being clean, worked on healthy free stocks, and planted in good borders, we can with due care produce fruits equal to those that were grown out-of-doors a generation since. *H. Markham, Mereworth Castle, Maidstone.*

THE APIARY.

PREPARATIONS FOR WINTERING.—The sooner feeding, if necessary to get stocks up to full weight, is completed the better, so that bees can go into winter quarters, with all stores properly sealed. Some bee-keepers make the mistake of extracting all the honey from the brood-frames in the autumn, under the idea that, if it is replaced with syrup, all goes on well, and that they can get the advantage of the difference in value between the sugar used and the honey. It is not taken into account, however, what a laborious task has been imposed on the bees by so doing, and what expense to bee-life the wear and tear of taking down and sealing over 20 lb. or more of syrup entails, at a time of year when there is the smallest chance of their recouping themselves by the addition of fresh generations to their number; the consequence being, that the old bees that have had the extra labour die prematurely in the spring, and the bee-keeper wonders what has been the cause of the disease called "spring dwindling," and any extra profit that may have been made by taking the last ounce of honey is now at vanishing point. Many bee-keepers are in the habit of contracting hives for winter, so that the bees are restricted to six or seven frames, because the opinion has been that they are warmer under such conditions, and winter better. It was, however, proved not long ago, by careful experiments with the thermometer, that bees are just as warm behind frames of empty comb as they would be behind a dummy or division board, no doubt by reason of wax being a bad conductor of heat and cold. The only fear, then, in leaving combs uncovered by the bees in the hive all the winter is, that they often get mildewed and rotten, but if our ventilation is right, this is not likely to occur.

The writer is an advocate of plenty of room underneath the frames for wintering, and half-bodies previously in use for shallow frames or sections come in nicely for this purpose, if the hive, is so constructed that the brood-chamber can be raised in that manner. An air space should also be ensured between the quilts and the roof of the hive, so as to allow a free circulation of air there, as if this does not exist they get damp, and remain in that condition all the winter. *Expert.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

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

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

FRIDAY, SEPT. 11. Dundee Horticultural Association meets.

SHOWS.

TUESDAY, SEPT. 8. Royal Horticultural Society: Show of British Ferns, Verbenas, Orchids, &c., Fruit and Vegetables. Lecture at 3 P.M., by Mr. Geo. Paul, on "Hardy Water and Bog Plants," at the Drill Hall.

WEDNESDAY, SEPT. 9. Brighton and Sussex (two days). National Chrysanthemum Society (two days). York Ancient Florists. Blantyre. Royal Caledonian International Exhibition, Edinburgh (three days).

THURSDAY, SEPT. 10. East Anglian Horticultural Club. Norwich, Dahlias, Fruit, and Vegetables (two days).

SATURDAY, SEPT. 12.—Gala-dinies.

SALES.

MONDAY, SEPT. 7. Dutch Bulbs, at Protheroe & Morris' Rooms. Extensive Importations of Bulbs from Holland, Lilioms, &c., at Stevens' Rooms.

TUESDAY, SEPT. 8. Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance Sale of Stove and Greenhouse Plants, at the Nursery, London Road, Croydon, by Messrs. Protheroe & Morris. Freehold Land at Tatsfield, specially adapted for Fruit Growing, by Messrs. Protheroe & Morris.

WEDNESDAY, SEPT. 9. Dutch Bulbs, at Protheroe & Morris' Rooms. Extensive Importations of Bulbs from Holland, Lilioms, &c., at Stevens' Rooms.

THURSDAY, SEPT. 10. Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Millbank Collection of Specimen Plants at Edinburgh, by Mr. Mitchell.

FRIDAY, SEPT. 11. Imported and Established Orchids, at Protheroe & Morris' Rooms. Stove and Greenhouse Plants, at the Moat Nursery, East Grinstead, by Messrs. Protheroe & Morris.

SATURDAY, SEPT. 12. Dutch Bulbs, at Protheroe & Morris' Rooms. Extensive Importations of Bulbs from Holland, Lilioms, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—58°.8.

The Great Show in Edinburgh. For the convenience of the large contingent of gardeners who will visit the great show of the Royal Caledonian Horticultural Society next week, we

now give brief indications of the more important objects of horticultural interest in and about the city, together with directions as to the manner in which they may be most conveniently visited from the centre of the city. As to the Show itself, some idea of its magnitude may be inferred from the fact that there are already over three thousand entries. Prize money to over £1,300 will be given in addition to Veitch and Turner Memorial medals.

The Royal Botanic Gardens and Arboretum.—These are the dominant botanical and horticultural attractions in Edinburgh. Particulars of these gardens, and of the extensive collection of plants, trees and shrubs therein, will be found in our issue of July 11 of the present year, p. 41. The cable-cars from the Mound to Trinity pass the entrance to the gardens every few minutes.

The City Gardens.—Edinburgh possesses, perhaps, more public gardens and parks than any other city of equal size in Britain. Under the city gardener's superintendence, there are not fewer than thirty-six enclosures, varying in area from half an acre to 120 acres, devoted to ornamental gardening; the principal of these are the Princes Street Gardens, which occupy the valley which divides the old from the new town. These gardens are a most charming feature of the city, and have assumed their beautiful character since the appointment of Mr. Angus A. McLeod as city gardener in 1875.

NURSERIES AND OTHER COMMERCIAL ESTABLISHMENTS.

Messrs. Thomas Methven & Sons.—This firm has three separate nurseries: (1) Leith Walk Nursery, the head-quarters of the firm, and which is accessible by the Leith and Newhaven cars which leave the General Post Office and pass the nursery gates every few minutes. The stock here consists of choice Rhododendrons and other hardy ornamental evergreen and deciduous shrubs, Vines, Clematis, Tea Roses, forest trees, stove and greenhouse plants, &c. (2) Warriston Nursery; this is situated in Inverleith Row, opposite the entrance to the Botanic Gardens, and contains a collection of choice Conifers, Hollies, &c., while the houses are filled with Palms, Orchids, Ferns, and a general assortment of decorative plants. (3) The Fettes Nursery, is distant from the Warriston Nursery only about five minutes' walk, and is devoted to forest trees, fruit and ornamental trees and shrubs, Roses, &c.

Messrs. Dicksons & Co.—The nurseries of this firm are three in number: (1) Pilrig Nursery; the Leith cars, from the G.P.O. every few minutes, pass the top of Pilrig Street, alongside which the nursery lies. The stock consists of ornamental trees and shrubs, florists' flowers, herbaceous and alpine plants; the extensive glass department being occupied with a general collection of stove and greenhouse plants. (2) Near by is the Redbraes Nursery, in which Conifers and ornamental trees and shrubs are the principal stock. (3) The Liberton Nursery, near Liberton Village, is approached by the Rowburn and Newington cars, which leave the G.P.O. every few minutes; the stock here is chiefly fruit trees.

Messrs. James Dickson & Sons, Inverleith and Fettes Nurseries; cable-cars from the Mound, passing the Botanic Gardens. Ornamental trees and shrubs, forest and fruit trees, choice Conifers, Roses, &c., are comprised in the stock.

Messrs. Ireland & Thomson.—This firm has three nurseries: (1) Golden Acre, Granton Road; cable-car from the Mound; contains extensive glass department, devoted to Orchids, Ferns, Palms, and general collection of stove and greenhouse plants; outdoors, forest trees and shrubs. (2) Craighleith Nursery; cable-car from Frederick Street to Comely Bank. Outdoors, stock consists of Conifers and ornamental trees and shrubs, Roses, &c.; indoors, stock of rare hardy and half-hardy shrubs are reared. (3) Lynedoch Place, off Queensferry Street; any car to west end of Princes Street; stock, Palms and other indoors decorative plants.

Cunningham, Fraser & Co., cable-car from Frederick Street to Comely Bank. A repository for rare and interesting plants of all kinds. The stock is rich in Hollies and other evergreen and deciduous shrubs, herbaceous and alpine plants, and such *recherché* things as *Azalea procumbens*, *Cassiope fastigiata*, *Mutisia decurrens*—the latter flowering freely on the walls—and many others.

Messrs. R. B. Laird & Sons, West Coates and Pink Hill Nurseries; Rowburn and Cottbridge cars from General Post Office pass West Coates every ten minutes. Palms, Camellias, hardwooded greenhouse plants, Ferns, &c., are the principal stock in this branch of the firm. Pink Hill Nursery is about 2 miles distant westward. The Corstorphine coach from Cottbridge passes the nursery gate about every hour. Choice Conifers, ornamental trees and shrubs, fruit trees, Roses, and florists' flowers are the leading components of the stock outdoors; while indoors, the collection comprises the usual classes of stove and greenhouse plants.

Mr. John Downie, Beech Hill Nursery.—Cottbridge car from G. P. O., thence per Corstorphine coach. Ornamental trees and shrubs, fruit trees, Conifers, florists' flowers, and herbaceous plants are the leading components of the stock outdoors. Indoors, tuberous Begonias, Calceolarias, Cinerarias, &c., are specialties.

Scottish Mushroom Company.—This company carries on its operations in the disused tunnel of the North British Railway Company extending from Scotland Street Station to Waverley Station, a distance of about three-quarters of a mile. The office and entrance to the tunnel are at Scotland Street Station, which is in an almost direct line from Princes Street North, *via* St. Andrew Street.

Messrs. Wm. Thomson & Sons, Tweed Vineyard, Clovenfords.—About 30 miles by rail *via* Peebles, from Waverley Station. The world-renowned Grape production of this establishment, which is this year as splendid as ever, cannot fail to attract many of the visitors to Edinburgh on the occasion of the Caledonian Flower Show.

Messrs. MacKenzie & Moncur, horticultural builders, Upper Grove Street. Tram-car to Haymarket, from which the works are only a few minutes' distant.

Messrs. Low & Sons, horticultural builders, Gilmore Park, Merchiston. Tram cars *via* Gilmore Place.

PLACES OF HORTICULTURAL INTEREST IN AND AROUND EDINBURGH.

The Gardens, Dalkeith Park (seat of the Duke of Buccleuch; Mr. Malcolm Dunn, gardener).—From Waverley Station to Dalkeith or Eskbank, half a mile distant from the former, one mile from the latter; a place of world-wide fame. Mr. Dunn's eminence as a gardener is a guarantee that visitors will always find much to interest them. Pines, Grapes, Peaches, Figs, &c., extensively grown indoors; also plants of all kinds. Outdoors, comparative trials in vegetables will have an interest for many, and the extensive orchard, well stocked as it is with Apples, Pears, Plums, &c., will be found generally interesting and instructive (see fig. 35, p. 281).

Newbattle Abbey (seat of the Marquis of Lothian; Mr. McHattie, gardener).—From Waverley station to Eskbank, from which latter the entrance to the gardens is about ten minutes' walk. An extensive and well-appointed place in which all departments exhibit careful and skilful management. Splendid Grapes, Peaches, &c., in the fruit departments; excellent selection of Orchids, perhaps the finest seedling tuberous Begonias to be seen in Scotland; an excellent general collection of decorative plants indoors; outdoor departments all befitting a first-class establishment in extent and in keeping (see fig. 36, p. 283).

Melville Castle (Viscount Melville; Mr. George Mackinnon, gardener).—Eskbank, from which the gardens are distant about half an hour. Superb Grapes and orchard-house fruit, also splendid hardy fruit; an extensive and well-managed kitchen garden; flower-gardening excellent.



A VINEYARD IN MADEIRA.



Oxenford Castle (The Earl of Stair; Mr. Smith, gardener).—To Dalkeith, thence by coach about four miles. First-rate Grapes, Peaches, and Nectarines; a remarkable brown Turkey Fig, filling a large house by itself, now swelling up an enormous second crop; Apricots on walls, remarkable for perfect health and great crop of unusually large fruit. All stone fruits exceptionally fine; extensive place, well managed.

Easter Duddingstone Lodge (Chas. Jenner, Esq.; Mr. Chapman, gardener).—Waverley to Joppa; entrance close by station. An extensive collection of hardy herbaceous and Alpine plants, and rare trees and shrubs, hardy Ferns, &c.; good range of glass, devoted to fruit and plant culture; but the hardy plants of all classes are the feature of the place, and Mr. Jenner's special delight.

Salisbury Green (Mrs. Nelson; Mr. Laing, gardener).—Newington or Rowburn cars from General Post Office to Preston Street, whence a short walk in the direction of Arthur's Seat leads to the entrance-gates. A first-class villa residence, with beautiful grounds and some fine old trees, the whole beautifully environed on the east by the picturesque hill above named. A good collection of Orchids and miscellaneous stove and greenhouse plants, well grown.

Oswald House, Oswald Road (Jas. Buchanan, Esq.; Mr. Geo. Wood, gardener).—Morningside circular route cars from G. P. O. Extensive collection of Orchids and stove and greenhouse plants.

Millbank (W. Syme, Esq.; Mr. John Paterson, gardener).—Morningside circular route cars to Whitehouse Loan. The best collection of Ericas and other hardwooded plants in Scotland. The entire collection is to be sold on September 10, the second day of the show. The specimen Ericas, &c., are of rare size and in perfect health.

Carron House (T. D. Brodie, Esq.; Mr. Mungo Temple, gardener).—Waverley or Caledonian stations to Grahamston. About 2 miles distant therefrom. The famous Carron Ironworks lie on the way. The gardens are new, having been laid out by Mr. Temple within the last nine years. Admirable and extensive ranges of glass. Good Grapes, grand Peaches, Figs, &c., Orchids for decorative purposes, and stove and greenhouse plants.

Callendar House, Falkirk (James Forbes, Esq.; Mr. Boyd, gardener).—Same station as preceding. Grapes a specialty, but all departments well done. Mr. Boyd's unflinching success, with Muscat Hamburg and other varieties, which are difficult to colour, is notorious. In point of finish they are this year equal to anything he has ever produced. All other varieties are also well up.

Bantaskin, Falkirk (James Wilson, Esq.; Mr. Mitchell, gardener).—An extensive collection of Orchids, Ferns and other stove and greenhouse plants; some choice Conifers, and grand old Yews, growing in a Roman dyke, which runs through the beautiful grounds.

Park Hall, Polmont (Thomas Livingston Learmont, Esq.; Mr. William Murray, gardener).—From Waverley Station to Polmont Junction, 1½ mile from station. Very superior Grape and other fruit culture, including Tomatoes, Melons, Cucumbers, &c., on a very extensive scale.

Norwood House, Alloa (J. Thomson Paton, Esq.; Mr. Kirk, gardener).—From Waverley station to Alloa, *via* Forth Bridge. A charming place, in which everything is well done, and from which some of the finest Grapes that will appear in the Waverley market next week will come. Visitors anxious to see the Forth Bridge from the Firth may sail from Leith to Alloa pier, and have what is by many regarded as the finest view of the bridge, with access to Norwood House at the same time. The distance from the pier to Norwood House is about fifteen minutes, and from the railway station about ten minutes.

Gosford (The Earl of Wemyss; Mr. John Brown, gardener).—Waverley Station to Longniddery.

The first lodge entrance to the park is within five minutes' walk of the station, but visitors have a walk of somewhere about two miles through the splendid park before reaching the gardens. This is a princely place in its proportions. During the past eight years extensive improvements have been going on under the direction of Mr. Brown. On a future occasion we may have something to say in detail about these improvements; at the present time space will only admit of our saying, that visitors in quest of artistic ideas on a large scale will find some gratification in the developments which are not quite finished here.

Archerfield (Mrs. Ogilvy Nesbit Hamilton; Mr. James Morrison, gr.).—Waverley Station to Dirlleton, distant about 3 miles. The characteristics of the place are excellent flower gardening and all-round good home gardening.

ROYAL GARDENS, KEW.—We are requested to give publicity to the following announcement:—"The Director of the Royal Gardens, Kew, regrets that he cannot undertake to name ordinary garden Orchids for foreign cultivators, unless they are recognised correspondents of the establishment."

ROYAL HORTICULTURAL SOCIETY.—On Tuesday, Sept. 8, there will be an exhibition of British Ferns and their varieties. The Silver Challenge Cup, won at the Fern Conference last year by Dr. E. J. Lowe, will be again competed for, and will be awarded as the 1st prize. The 2nd prize will be £2. Amateur growers of Verbenas will have a chance of distinguishing themselves also, as a Silver Flora Medal, and various sums of money are offered as prizes. In the afternoon, Mr. Geo. PAUL will read a paper on "Hardy Water and Bog Plants."

VINE CULTURE IN MADEIRA.—We are indebted to the courtesy of one of our correspondents, Mr. HARCOURT POWELL, for the photograph, taken by himself, of a vineyard in Madeira (see Supplementary Illustration). The wines of Madeira were better known to our forefathers than to ourselves. Troubles in the shape of mildew (*oidium*) broke out in 1852, and well nigh ruined the Vine-growers. This plague was stayed by the application of sulphur, but only to be followed in 1873 by a worse pest—the Vine louse, or *Payloxera*. The application of bisulphide of carbon to the roots, and the grafting of the Vines on American stocks, have been so successful that the industry is again reviving. For climatal reasons it seems improbable that the insect will multiply with the same fecundity that it does elsewhere. The stocks of old and maturing Madeira in the hands of houses like COSSERT GORDON & CO., BLANDY BROTHERS, and LEACOCK, are very large, and are said to be fully equal in quality to the Vines produced before the *Oidium* inflicted so much mischief in 1852. The following account of the culture of the Vine in Madeira is taken from Mr. J. Y. JOHNSON'S work on Madeira (DOLAN & CO.), an excellent handbook for the visitor. "The Vine is propagated from cuttings (*bacellos*) planted at a depth of from 3 to 6 feet, and there is usually no produce for the first three years. During the second or third spring it is trained along a trellis (*latadus*) made of cane (*Arundo donax*), and this trellis is supported by stakes at 3 or 4 feet from the ground. This allows the labourer to creep underneath, and do any work that may be needed. The operation of pruning in the lower region is undertaken in February, shortly before the buds make their appearance. Little is cut away, the plant being allowed to run to great length. The flowers usually show themselves in the early part of May. As the Grapes advance towards ripening, leaves are from time to time removed, to admit the sun's rays to the fruit, and to induce the plant to throw its strength into it. The leaves are much relished by cattle and goats. The vintage commences at the end of August or beginning of September, according to the season, and terminates at the upper zone of the Vine region in October. At the north, the vintage takes place two or three weeks later. The rats, lizards, and wasps destroy a considerable part of the produce."

THE NEW GARDENER AT CHATSWORTH.—We learn that Mr. WILLIAM CHESTER, who for thirty years has filled the post of foreman of the large conservatory at that place, has been selected as Mr. O. THOMAS'S successor.

A LARGE MUSHROOM.—A very fine Mushroom, of gigantic size, was picked up in Londesborough Park by a workman. Dimensions—42 inches circumference, 13½ inches diameter, and stem 6 inches round. Weight, 2 lb. 0½ oz.

DEODAR CONING.—Reverting to this subject, we may note that the earliest record we can find of the Deodar coning in Europe is of one that fruited in 1852, at Mr. KELL BARCLAY'S, at Bury Hill, near Dorking, as recorded in our columns, September 11, 1852, p. 582. The tree was at that time 28 feet high. We should be glad to know its further history. Since then it has fruited at Dropmore, Kew, Sunninghill, and other places. Sir JOSEPH HOOKER kindly reminds us that at Kew there is a specimen tree which was a seedling raised by the late Sir THOMAS ACLAND from a cone produced at Killerton, near Exeter. The tree is more vigorous than many of the other Deodars grown at Kew, the species not thriving well in the Royal Gardens. Writing from Bicton in our columns in December 11, 1869, Mr. JAMES BARNES, says:—"I have not yet seen a tree above fifty years old, or more than 80 feet high, though I have known it to produce cones for years; and have seen perfect seed produced from home-grown plants, as well as plants raised from home-grown seed."

THE RHUBARB IN GERMANY.—A daily contemporary points out that the Rhubarb plant is likely to come into high favour on the Continent. It is no stranger in Germany nor in Switzerland; but hitherto it has been almost wholly confined to two uses—medicine and ornamentation. The size of its leaves has made it popular as a garden plant, but the English have been greatly pitted for valuing it as a substitute for fruit. The grievous failure of the fruit crop this year in central and southern Germany has converted the *Landwirthschaftliche Korrespondenz* to the opinion that the English have shown their usual practical sense in making so much of this vegetable. It recommends all families to cultivate it, gives directions for its management, and adds receipts for making Rhubarb preserve and Rhubarb wine. The latter, it says, is a far more delicate dessert-wine than can be made from any berry, and second only to the Grape. It anticipates a time when Rhubarb stalks will be as familiar a sight in the fruit markets, and as profitable an article of trade, as they are in England. It specially commends the sort known as "Queen Victoria."

THE GARDENERS' ORPHAN FUND.—What a woman can accomplish in aid of this Fund has been well exemplified by Mrs. BOWERMAN, of Blackwood Park Gardens, who, when the recent Basingstoke flower show was held in the Park, provided tea for gardeners and other visitors, and handed over the proceeds to the Orphan Fund. The weather was very wet, and most distressing for a flower show, but in spite of this difficulty, Mrs. BOWERMAN, with the kindly aid of Master HOARE, netted the sum of £2 16s., which has been forwarded to Mr. BARRON. We regret to learn that Mr. BOWERMAN is still in King's College Hospital in a condition which creates much anxiety.

STRAWBERRIES.—Fifty acres of Strawberry plants in one field alone, as shown in our recent illustration at p. 223, seems to those even familiar with fruit culture almost a staggerer. Those who would doubt should go into Kent and see for themselves, especially in the gathering time. What interesting statistics could an industrious calculator produce from out of this 50-acre breadth. How many rows of plants, how many in a row, how many per acre, and finally over the entire area? How many pounds, hundredweights, and tons of fruit annually gathered? How much of manure applied, how much the cost of labour, in fact, all sorts of

things might be added up and counted, which, though seemingly trivial, yet have great importance in Strawberry culture? How these Kentish growers fly in the face of correct teaching by sending in horse-hoes to deeply art the soil between the rows, even moulding ploughs to ridge the soil in the winter, and carts laden with manure to dress the plants also liberally. If they do not dig between the rows of plants, it is because the breadths are so large. Such course would be impracticable; to have the soil between the rows of plants well cleaned and pulverised, is one of the great essentials of successful field culture. That, the horse-hoe accomplishes most thoroughly; hand-hoes do the rest. So that, as soon as possible after the fruit is gathered, the plants are cleared of all weeds and refuse, and have ample room and air to enable them to perfect their crowns. The frequent heavy rains have rendered the ordinary routine of culture this season difficult; still, it has been got over, somehow. A breadth of Strawberry plants left all the summer to smother in a bed of weeds would cut a poor figure the following year. Only good culture, with good sorts, on good soil, will pay.

FRUIT SALES IN KENT.—The annual hardy-fruit sales in Kent have just finished, says the *Daily News*, and the results are certainly not satisfactory to growers. Plums and Pears are so plentiful that buyers decline to speculate, except in rare instances, where fancy prices were obtained. Profiting by the bitter experience of last year, when, after good prices had been accepted, the Plum crop proved a failure, buyers were exceedingly chary, and the competition was decidedly slow. Pears were similarly treated. In one case a reserve of £100 had been placed on a certain lot of William's Pears, but the highest bid only reached £56. Other nice lots of fruit shared the same fate, and, consequently, growers will be obliged to market the fruit themselves, or accept greatly reduced offers. With harvest in full swing, and the hop-picking season imminent, growers prefer to sell their hard fruit on the trees, but in this respect many of them will be disappointed. On all hands it is admitted that Plums will be very prolific, and consequently this favourite fruit should be within easy reach of the poorest classes. The jam-manufacturers in Kent—of whom there are now several—are buying up large quantities of Plums. One firm of jam-makers, who are also extensive growers, are so well off for Plums, that they have no need to buy elsewhere. One of the common sorts of Pears is also very plentiful. This special kind of fruit has been sold in the London market at the rate of a shilling for the half-sieve. After paying the carriage of the fruit, and deducting the salesman's commission, this leaves 5d. for the grower, out of which he has to pay for the picking and other incidental expenses, thus bringing the net profit down to a very low minimum. A case of one buyer is reported, in which he is said to be so disgusted at this price, that he is feeding his pigs off the Pears.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—At the Floral Committee meeting of August 8, 1891, the committee awarded First-class Certificates:—To Mr. D. Bas Backer, Jr., Apeldoorn, for Collection of *Begonia tuberosa erecta*, fl.-pl.; to Messrs. De Graaff Brothers, Leiden, for *Babiana tubiflora* Gawl. (insufficiently-known plant); *Tritonia scillaridis* (insufficiently known plant); *Watsonia aletroides*, Gawl. (insufficiently-known plant); *W. humilis*, Mill. var. *rosea* (insufficiently-known plant); to Messrs. Groeneweg & Co., Amsterdam, for Collection of *Tydaea hybrida*; to Messrs. E. H. Krelage & Son, Haarlem, for *Asclepias Fremontii* Torr. (insufficiently-known plant), *A. tuberosa* L. var. *sulphurea* (insufficiently-known plant), *Eremurus Olge Rgl.* var. *angustifolius* Hort. Petrop. (new plant), *Eucomis bicolor*, Baker, var. *robusta* (new plant), *Gladiolus purpureo-auratus*, J. D. Hook, var. *Admiration* (1888) (new plant), G. p.-a. J. D. Hook, var. *E. V. Hullock* (1889) (new plant), G. p.-a. J. D. Hook, var. *Gil Blas* (1890) (new plant), G. p.-a. J. D. Hook, var. *Gipsy* (1889) (new plant), G. p.-a. J. D. Hook, var. *Hippolyte* (new plant), G. p.-a. J. D.

Hook, var. *Rembrandt* (Hort. *Krelagei*, 1887) (new plant), G. p.-a. hybr. (No. 112) var. *Monsieur Dros* (Hort. *Krelagei*, 1891) (new plant), G. p.-a. hybr. (No. 125) var. *Géant de Haarlem* (Hort. *Krelagei*, 1891) (new plant), G. p.-a. hybr. (No. 132) var. *Jacob Maris* (Hort. *Krelagei*, 1891) (new plant), G. p.-a. hybr. (No. 133) var. *Hugo de Vriea* (Hort. *Krelagei*, 1891) (new plant), G. p.-a. hybr. (No. 134) var. *Joseph Israëls* (Hort. *Krelagei*, 1891) (new plant), *Montbretia crocosmiiflora* Hort. var. *Talisman* (new plant), M. c. Hort. var. *Tigrisidie* (new plant); to Mr. C. G. Van Tubergen Jr., Haarlem, for *Calochortus madrensis* Wats. (new plant), *Eremus Olge Rgl.* (insufficiently-known plant), *Gladiolus Saundersii*, Bkr., × *gandavensis* Hort. var. *L. Spohr* (new plant), G. S. B. × G. Hort. var. *R. Wagner* (new plant), *Lilium nepalense* var. *ochroleucum* (insufficiently-known plant), *Roscoeia akkimensis* (insufficiently-known plant).

Second-class Certificates:—To Messrs. De Graaff Brothers, Leiden, for *Gladiolus galeatus* Andr. (insufficiently-known plant), *Watsonia Meriana* Mill. (insufficiently-known plant); to Messrs. E. H. Krelage & Son, Haarlem, for *Eucomis bicolor*, Baker (insufficiently-known plant), *E. b.*, Baker, var. *maculata* (new plant); *Gladiolus purpureo-auratus*, J. D. Hook, var. *Beaurepaire* (1889), (new plant); G. p.-a. J. D. Hook, var. *Hooft* (Hort. *Krelagei*, 1887), (new plant); G. p.-a. J. D. Hook, var. *Minister von Lucius* (1889), (new plant); G. p.-a. hybr. (No. 7), var. *Arentine Arendsen* (Hort. *Krelagei*, 1891), (new plant). To Mr. C. G. Van Tubergen, jun., Haarlem, for *Gladiolus Saundersii* Bkr. × *gandavensis* Hort. var. *G. F. Handel* (new plant); G. S. Bkr. × G. Hort. var. *L. Van Beethoven* (new plant).

Botanical Certificates:—To Messrs. E. H. Krelage & Son, Haarlem, and to Messrs. De Graaff Bros., Leiden, for *Allium cyanum*, Regel (new plant).

Honourable notices:—To Messrs. E. H. Krelage & Son, Haarlem, for *Eucomis undulata*, Ait.; Messrs. Ant. Roozen & Son, Overvee, for *Griffithia hyacinthina*, Herb. Votes of thanks:—To Messrs. J. T. Van Den Berg, Jr., Jutfaas, for *Gladiolus Lemoiniei* Hort. var. *Derviche* (new plant); G. L. Hort. var. *Eiffel* (new plant); G. L. Hort. var. *M. Forcy Yannier* (new plant); G. L. Hort. var. *Oriflamme* (new plant); G. L. Hort. var. *Rabis* (new plant); to Messrs. E. H. Krelage & Son, Haarlem, for *Agapanthus umbellatus* Ait. var. *fol. aureo-vittatus*, *Bomarea oligantha*, Baker (insufficiently-known plant); *Bowiea volubilis*, Harvey (insufficiently-known plant); *Lilium Wittei*, Suringar (insufficiently-known plant); collection of *Lathyrus* in forty-three species and varieties; collection of *Montbretia* in eighteen species and varieties; collection of *Tigridia* in eleven species and varieties; *Zygadenus elegans*, Pursh. (insufficiently-known plant). To Mr. A. Rietveld Utrecht, for *Begonia semperflorens* Vernon, to Mr. C. G. Van Tubergen, Jun., at Haarlem, for Collection of *Achimenes* and *Tydaea*.

First-class Certificate:—To Mr. G. Doeve, Leiden, for Seedling Peach "Vroege Van Cronstein" (Early Cronstein). Amsterdam, August, 1891, H. C. ZWART, Secretary.

GATESHEAD HORTICULTURAL SOCIETY.—The thirty-sixth Annual Show of the above was to have been held on September 1 and 2, in Saltwell Park, but a severe gale blew down the tents, making it impossible to hold the same in its entirety. The show of cut-flowers, fruit, and vegetables only was held in a small tent, and that under circumstances of much difficulty. For the secretary and committee, who have worked so hard to make this a financial success, much sympathy is expressed.

DECAY OF PEACHES ON THE TREE.—A correspondent—a Frenchman—states, in very bad English, that the decay of Peaches whilst on the tree is due to the heat of the sun "boiling" the juices within the stone, and of necessity those contained in the surrounding pulp. It is a very odd idea, and the way of combating the evil hardly less so, which is, he says, very easy when you know it; that is, to hang a thin shading before the trees, and

4 feet away from them, between the hours of 10 A.M. and 3 P.M., and when the warmth of the wall is between 80° and 90°, and to afford the shading materials a thorough wetting by means of the syringe if 100° is reached. He says that shadings do not affect the proper colouring of the fruits. Have any of our readers experience of this method of saving their Peaches?

LOW TEMPERATURE IN WARWICKSHIRE.—On Saturday night, August 29, Mr. T. WOODFORD of Atherstone, informs us that the thermometer fell to 34°; and the weather was very wet and stormy. During the month of August, 4 inches of rain had fallen at that place.

FLOWERS IN SEASON.—Some very good Carnations and Picotees have reached us from our Birmingham correspondent, Mr. W. DEAN, Sparkhill. Two are seedlings raised by Mr. HERRERT, the manager of Messrs. THOMSON'S nursery, viz., Carnations Blushing Bride, a French white, full, with a good calyx; and A. W. Jones, a crimson-flake—a pleasing flower. Some Picotees of Mr. J. DOUGLAS' raising were Lillian, red-edged; Almira, yellow ground, rose edged; and Terra Cotta, a fancy Carnation. Several new Carnations of Mr. BENARY'S raising accompany these, viz., Sarony Unger, a purple bizarre; Stadtrath Boel, a scarlet flake; and Frederick Alexander, a purple bizarre. Two older varieties—Nellie, a light red-edged Picotee, with fine fragrance, and Companion, a heavy rose-edged, were likewise sent.

"MONOGRAPHIA PHANEROGAMARUM."—We have just received the seventh volume of this work, which is the continuation, and, in part, the revision of the famous *Prodromus*, and, like it, indispensable to botanists. The volume is devoted to a monograph of the Melastomaceae, by M. ALFRED COENIAUX. The number of species enumerated is no fewer than 2730, the greater number tropical American. The monograph appears to be produced with equal care and elaboration. As, apart from its botanical interest, many of the species are among our most ornamental stove plants, we shall take another opportunity of advertizing to what undoubtedly is one of the most noteworthy productions of the kind.

CHISWICK NOTES.—Some beds of *Hydrangea paniculata grandiflora* are just now very noticeable in the Royal Horticultural Society's Gardens. With its great pyramidal panicles, 1 foot in depth, and 2 feet in circumference, crowded with large white flowers, it is highly ornamental, and is undoubtedly one of the finest of hardy deciduous shrubs. A dwarf form of *Mimulus moschatus* (of continental origin), and of very dwarf habit of growth, combined with great freedom of flowering, may be noted as a useful plant for edging beds. Dabbias in the various sections show fancy, single, decorative, and Cactus; and the latest addition to these useful autumn flowers—the Tom Thumb section—will soon give a glow of colour, and produce features of beauty, effectiveness, and interest in the borders. *Fuchsia Danrobin* Bedder is a dwarf and beautiful form of the old *F. Riccartoni*, characterised by its profuse floweriug—a most useful and effective bedding subject. A very interesting and somewhat extensive trial of outdoor Tomatos is being made this season, and the plants on trial are bearing very freely. It is to be feared, however, that the cool weather will not permit of the fruits ripening.

THE BRITISH ASSOCIATION.—The President, Mr. FRANCIS DARWIN, M.A. (in Sect. D., Biological Section), delivered an address on "Growth-curvature in Plants." The scope of the address is indicated in the opening sentences: "A seedling plant, such as a young Sunflower, when growing in a state of Nature, grows straight up towards the open sky, while its main root grows straight down towards the centre of the earth. When it is artificially displaced, for instance, by laying the flower-pot on its side, both root and stem execute certain curvatures by which

they reach the vertical once more. Curvature, such as these, whether executed in relation to light, gravitation, or other influences may be grouped together as growth-curvatures, and is with the history of our knowledge on this subject that I shall be occupied to-day. I shall principally deal with geotropic curvatures, or those executed in relation to gravitation, but the phenomena in question form a natural group, and it will be necessary to refer to heliotropism and, indeed, to other growth-curvatures. The history of the subject divides into two branches, which it will be convenient to study separately. When a displaced apogeotropic organ curves so as to become once more vertical, two distinct questions arise,

his continued belief in the views put forward in the *Power of Movement in Plants*, that circumnutation is a widely-spread phenomenon, even though it may not be so widely-spread as he and his father had supposed. In conclusion he said:—"The relation between rectipetality and circumnutation may be exemplified by an illustration which I have sometimes made use of in lecturing on this point. A skilful bicycle-rider runs very straight; the deviations from the desired course are comparatively small; whereas a beginner 'wobbles' or deviates much. But the deviations are of the same nature; both are symptoms of the regulating power of the rider. We may carry the

to order and made subservient to rectilinear growth. Circumnutation would be the outward and visible sign of the process. I feel that some apology is due from me to my hearers for the introduction of so much speculative matter. It may, however, have one good result, for it shows how difficult is the problem of growth-curvature, and how much room there still is for work in this field of research."

HARPENDEN HORTICULTURAL SOCIETY.—The thirteenth annual exhibition was held in Rothamsted Park on August 26. There were about 800 entries. The special feature was the large collection of herbaceous plants, annual and perennial;

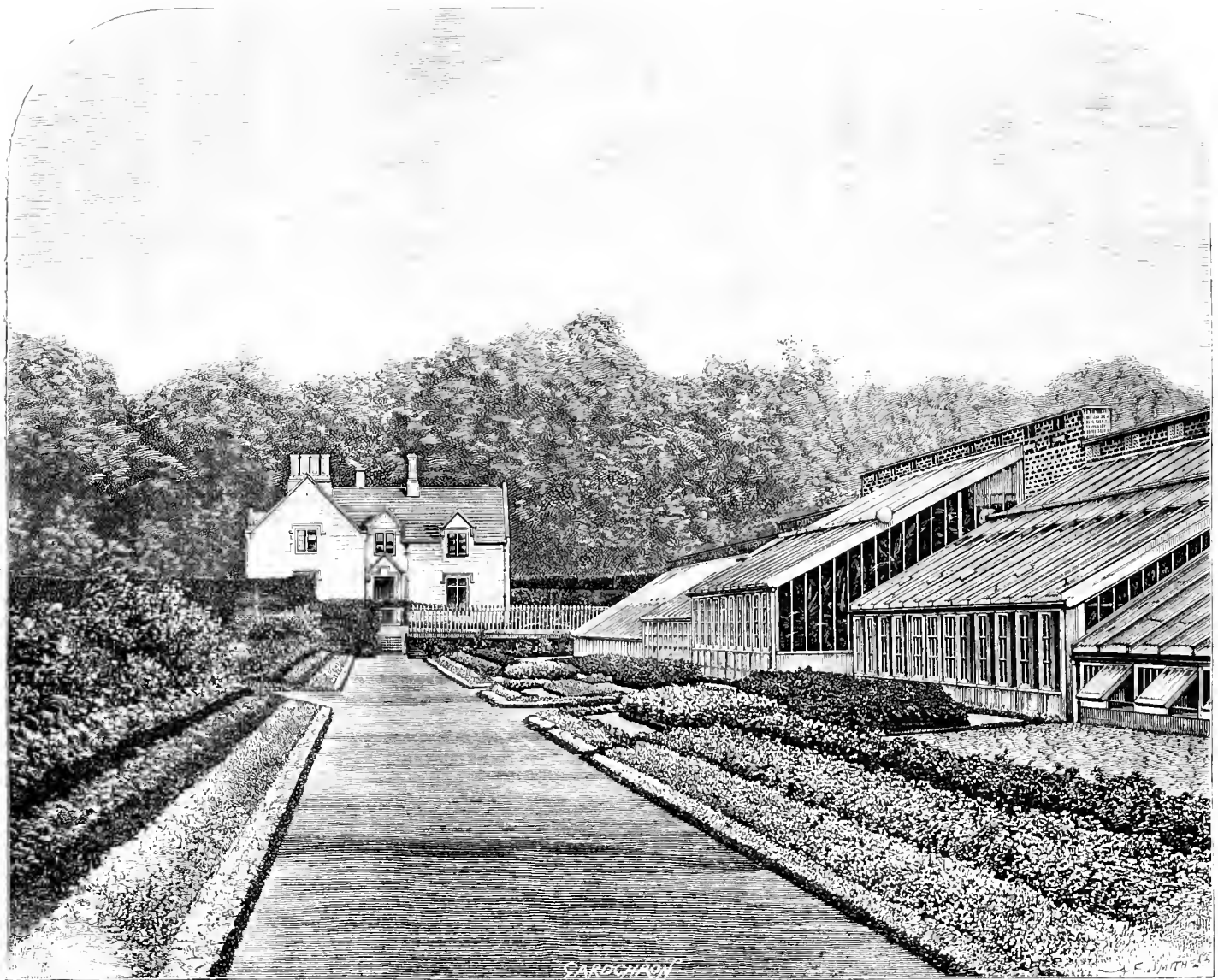


FIG. 35.—VIEW IN DALKEITH GARDEN, WITH GARDENER'S HOUSE IN THE DISTANCE. (SEE P. 278)

which may be briefly expressed thus:—(1) How does the plant recognise the vertical line; how does it know where the centre of the earth is? (2) In what way are the curvatures which bring it into the vertical line executed? The first is a question of irritability, the second of the mechanism of movement. Sachs has well pointed out that these two very different questions have been confused together. They should be kept as distinct as the kindred questions how, by what nervous apparatus, does an animal perceive changes in the external world; and how, by what muscular machinery, does it move in relation to such changes? The president dealt separately with "irritability" and "mechanism," and then treated of "circumnutation," expressing

analogy one step further: just as growth-curvature is the continuance or exaggeration of a nutation in a definite direction, so when the rider curves in his course he does so by wilful exaggeration of a 'wobble.' It may be said that circumnutation is here reduced to the rank of an accidental deviation from a right line. But this does not seem necessarily the case. A bicycle cannot be ridden at all unless it can 'wobble,' as every rider knows who has allowed his wheel to run into a frozen rut. In the same way it is possible that some degree of circumnutation is correlated with growth in the manner suggested above, owing to the need of regular pauses in growth. Rectipetality would thus be a power by which irregularities, inherent in growth are reduced

Roses, Dahlias, and Stove and Greenhouse plants, made up an attractive and successful show.

NOTICES OF BOOKS.

GRAPE GROWING FOR AMATEURS. By E. Molyneux. (L. Upcott Gill, 170, Strand, W.C.)

It might be supposed that nothing new was left to be said on the subject of Grape-growing in this country. In the above well-written little work, by an excellent gardener and champion Chrysanthemum grower, we have related the cultivation of the Vine in all its varieties. The writer begins at the

beginning, and insists on the careful making of the border, truly observing that on this, the first operation, depends the future success of the Grape-cultivator. The directions for border construction, and generally, are stated in plain language, tolerably free from technical phraseology, as befits a book intended for the amateur, and they are about as good as any that we have seen. The chapter on vineries is a useful one; and that dealing with the propagation of the Vine will be of great service to those who are usually not too well provided with suitable appliances.

The sub-division of the seasons' culture, of the Vine into early, late, Muscat, vinery, and greenhouse treatment, is particularly happy. The subjects of dealing with the shoots during growth, thinning the bunches, with examples (not enough) of unthinned and thinned, properly and improperly, are treated at considerable length. Shankling is dealt with as usual—that is, unsatisfactorily, guesses, more or less near the truth, as to its cause being made. Over-cropping is the commoner cause given; but how is it that, however much a plant in a vineyard may carry, and it will carry as much as twenty-five pounds weight, the next year's crop does not shank? We have yet much to learn as to the causes of this disorder in glasshouse Grapes. A descriptive list of varieties is given, together with their various merits, faults, and uses, and this chapter is supplemented by one on the peculiarities of certain varieties.

The chapter on pruning would have been better understood had there been more illustrations.

PLACES OF INTEREST GOING NORTH.

Messrs. W. Fell & Co., Hexham.—Among the many persons whose interests or fancies will take them northward to the Edinburgh Exhibition, will doubtless be found some to whom forestry in some of its phases, as practised in this country, will appeal strongly. Those of our readers residing in cold or exposed localities, or who intend planting in such aspects, know the value of clean, healthy stocks of timber trees, and the advantages which are derived by planting such as have been raised in cold exposed nurseries, yet in good soil, should not fail to visit the nurseries of W. Fell & Co., Hexham, Northumberland. The firm has rapidly become famous, by reason of its Whinham's Industry Gooseberry, and is fast becoming widely known as among the foremost possessors of the hardiest forest stuff to be met with in England. The town nursery is close to the Hexham station of the Carlisle and Newcastle Railway, and it is here that the few plant-houses are found, as well as ornamental park and garden trees, acres of the celebrated Gooseberry above named, and the finest collection of herbaceous plants to be found in the North of England. The rest of the nursery is to be found in isolated patches of many acres in extent on the hills that skirt the town on the south, and these fields, being entirely on the northern face or on the top, are fully exposed to the colder winds, and the subjects they are planted with endure all the rigours of none too gentle climate. Here were noted enormous quantities of Larch, Scots Pine, *Pinus austriaca*, *Abies septentrionalis*, a variety of Spruce likely to take the place of the common Spruce in the future. It is sparse of habit and a deep rooter, which the latter is not, as planters have often learnt to their cost. Great numbers of *Abies Menziesii* are being grown, as it is believed that it will take the place of *A. Douglasii*, a species that does not do well everywhere. *A. Menziesii* makes as good timber, and is moreover an even more rapid grower. Much of the coniferous stuff is of planting age, vigorous, stocky, and well-rooted, and which may be accounted for by the annual or biennial transplantation to which all the stock, of whatever description it may be, is subjected. Some of the Scots Pine—that which came, we believe, from primitive forests at Braemar, and which is kept separate from other stock—is of a lively green, instead of blue-green, the commoner tint of this species of Pine.

Beyond the colour difference, no other point seems to distinguish this from the common one. On the high ground, large breadths of deciduous timber trees are raised, as Ash, *Populus canadensis*, a fine street tree, and one that has been so employed at Glasgow; Sycamore, &c. The Larch seemed to us to look particularly happy, as did also the Quicks, of which very large quantities are grown for railway supply particularly. This plant is sometimes a sufferer from mildew, but this season, so peculiarly favourable to mildew attacks, it has not appreciably affected the Hexham stock of the plant. Of ornamental Conifers in the town nursery, mention should be made of the very fine lot of *Cupressus Lawsoniana*. A golden variegated Weeping Ash, was remarked, whose variegation is very fine, and constant. Of the Whinham Gooseberry the available stock is about 400,000 in one, two, and three-year-old plants. The astonishing quantity of fruit gathered from this variety and its earliness are fast making it the Gooseberry for market purposes, and especially for gathering in the green state, as there is a clear gain of three weeks over any other known Gooseberry. A Hexham fruit-grower is stated to have picked from $3\frac{1}{2}$ acres of bushes 26 tons of fruit, realising a gross sum of £280. The fruit of a dark, dusky-red colour when ripe, and of fairly good quality.

The herbaceous perennials and dwarf-growing shrubs form very complete collections of such species and varieties as are found to succeed in the North. We noted among little-known things, *Helenium doricoides*, very free-flowering; a double-flowered Sweet William, only 4 inches, of a rich velvety crimson, coming in September with heads as dense as a Cockscomb; Carnation Raby Castle, raised by Mr. Westcott, of Raby Castle Gardens, with fine salmon-pink flowers, very free and robust; *Heli-anthus rigidus*, about 5000 fine healthy plants; *Saponaria officinalis*, good for spring and autumn display, flowers lilac-coloured; *Pyrethrum White-Queen*, like *P. parthenifolium*, but better, with white, button-like blooms, and excellent for cutting; *Aster alpinus altaicus*, 6 inches in height, with purplish-lilac flowers—a free and continuous bloomer; *Spiraea Nobleana*, an improvement on *S. Douglasii*, having a large corymb of rose-pink blooms; *S. opulifolia aurea*, a good plant for smoky towns—it has yellow leafage; *Genista tinctoria* is a species with bright yellow blossoms, and it is full of flower at the present time; *Cornus sibirica argentea elegantissima*—Heaven save the name!—is a much better subject to plant than *C. s. elegantissima*, the variegation being far clearer. A selection from the English Bramble was observed, which is going to be put under the treatment usually accorded the Raspberry; it has a dwarf habit, and it fruits freely. The New Zealand species of *Veronicas* were found in large numbers, but all much mutilated by frost, with the one exception of *V. Traversii*, which is undoubtedly the best for the rough North. The bushes of *Viburnum Lantana* were observed to be full of berries; this is one of the hardiest of shrubs, and pretty either in flower or berry. *Daphne Cneorum*, *Hippophae rhamnoides*, and Ploughman's Spikenard, *Inula Conyza*, were observed in good condition. The latter gets cut down in some winters. Large numbers of fruit trees, of kinds suitable for the district, are grown, and the crops of Messrs. and Green Chisel Pears were enormous. This is a most interesting nursery, and a fact may be mentioned that will be well understood and appreciated by all planters, that there was an entire absence of old stock.

ALNWICK CASTLE.

The gardens at Alnwick Castle, the best in the county of Northumberland for fruit growing under glass, and a certain style of bedding-out pursued there, that is well adapted for the cool climate, should not be omitted from the list of places worthy of being visited by gardeners going North. The place is best reached from Bilton Junction of the North-eastern Railway, and is distant from the station of Alnwick about a quarter

of a mile. As befits a modern garden and its glass erections, it is removed some distance from the hoary old stronghold of Alnwick Castle, whose flagstaff on the keep is about all that one can see of it from the area round the glasshouses. The arrangement of these glass-houses in groups running east and west, with a flower garden around them, the beds being on turf, and of simple form, is worthy of imitation in such places as demand it for the sake of avoiding incongruousness. One cannot say too much for the fine style of keeping the beauty of the turf and walks, and the general air of tidiness and cleanliness prevailing, not only in this part of the garden, but everywhere else. Peach trees are well grown, and have been by Mr. Harris put into perfectly healthy condition as regards soil and drainage of the borders, &c. In one of the first Peach-houses entered were found two trees, each seventy years old; these were the old Galande and Royal Hâtive, and another tree of the same great age yields fine crops every year of pale-coloured fruits—its name was not learned. The great age of these trees is very evident, from their enormous stems and rugged main branches, but one would scarcely have expected to find so much excellent young wood in them as was the case. One of the best of all late Peaches—Princess of Wales, was observed in the next house entered; it was also in fine bearing, the crop being, of course, not yet ripe. A tree of *Violette Hâtive* in the same house was a good companion to the former. We entered three of the iron-ribbed vineries, of an old-fashioned style of workmanship, in which there were splendid crops of Black Hamburgh, Alicante, Mrs. Pince, Muscat, &c. It was remarked that Mrs. Pince, a notoriously shy setter, was hung all over with perfect bunches—a result which has followed artificial fertilisation. The other Grapes were excellent, good bunches, high finish, and large, hard foliage; the youth of the Vines is renewed by the method of cutting out the old, and laying in new wood. One of the vineries planted with Muscat of Alexandria had its Vines lifted in the autumn of 1890, and in another the Vines had not been transplanted. The untransplanted Vines carried a very fine lot of large bunches, and the Vines in the other house, which had not had its crop sacrificed in any way, because of having been removed, bore a crop that was but little behind it in the size of the bunches and the berries. Pines have always been well managed at Alnwick, and fine fruits, ripe, and approaching ripeness, were noticed; these were mostly Queens. The winter varieties consist of Charlotte Rothschild and Smooth Cayenne; the majority are of the latter variety, and a few Black Jamaicas. The Pine stoves are not quite all that a gardener could wish, most of them being too lofty; and then the iron construction and small panes of glass tend to make artificial heat in excessive amount a necessity in cold weather. The handsome conservatory was gay with plants in bloom, and in it were noticed a magnificent *Luculia gratissima*, which Mr. Harris said is pruned in February, and the shoots never stopped, and it flowers beautifully in its season. A large *Bougainvillea glabra*, yellow Abutilon, and an immense specimen of *Fuchsia Carolina* were noted on the roof and its supporting pillars. The wall trees are really fine examples of what good soil and management, with careful summer treatment of the young wood, and clever training can do in not the best of climates. Plums and Pears and Morello Cherries were heavily laden, as were most of the Apricot and Peach trees. A Noblesse Peach, planted so long ago as 1828, was full of nice fruits. A good many useful species of Orchids are grown, amongst them a grand piece of *Cymbidium Lowianum*. The stock of Ferns and other plants used in the decoration of apartments is a very large one, as is the number of plants of *Eucharis amazonica*, which it may be remarked are in fine condition. There are other plant-houses than those containing the plants mentioned above.

Dwarf Apples on the paradise stock are planted at the sides of the vegetable quarters, and the varieties

which almost invariably crop well are Ecklinville, Lane's Prince Albert, Bismarck, Red Calville, a famous dark crimson, and very prolific early fruit; The Queen, Manx Codling, Grenadier, and Lord Suffield. These are varieties which are found as well suited to the climate as the old Cockpit and Fulwood, once thought to be indispensable in that part.

HOME CORRESPONDENCE.

THE "NEWER AND LITTLE KNOWN STRAW-BERRIES.—The following notes may be of interest to some of your readers. The past Strawberry season

Nicaise—not established enough to test—is a great bearer; Brown's Goliath is an enormous bearer, but it is quite flavourless; Commander, a market fruit, being promising; Competitor, whose early flowers got frozen, has large fruits of good flavour, robust grower, promising; Georges Lesirer, is a very fine late large sort; Harris' A1, was spoilt by the rain—a bearer; John Ruskin, a remarkably early, but destitute of good flavour; Latest of All, a very large and fine fruit, a grand novelty; Prince Tick, instead of being better than Paxton, it is inferior to it; Sharpless' No. 1, very large and early, a good market sort; Souvenir de Kieff, a large heavy late variety of refreshing and fine flavour; Unser Fritz, large, and of fine flavour, a late variety; Victory House, same as Brown's Goliath. Among the older kinds Elton Pine, Dr. Hogg, Countess and

season. Very few blanks occurred in the quarters. I think White Knight will be good in a dry season; it is very pretty in the dish. *George Bunyard, Maidstone.*

GARDENERS' ORPHAN FUND SUGGESTIONS.—In noting in your last issue the splendid receipts at the late great show at Srewsbury, a thought occurred to me. I notice that this spirited Society has done much good with its surplus in the past. A really grand opportunity presents itself now to the Society for recognising the claims of this most deserving charity. As is now well known, the fund has a large number of orphans to maintain, and the unavoidable abandonment of the Covent Garden *site*, a good source of annual revenue, has compelled the executive to seek for the much-needed support in fresh

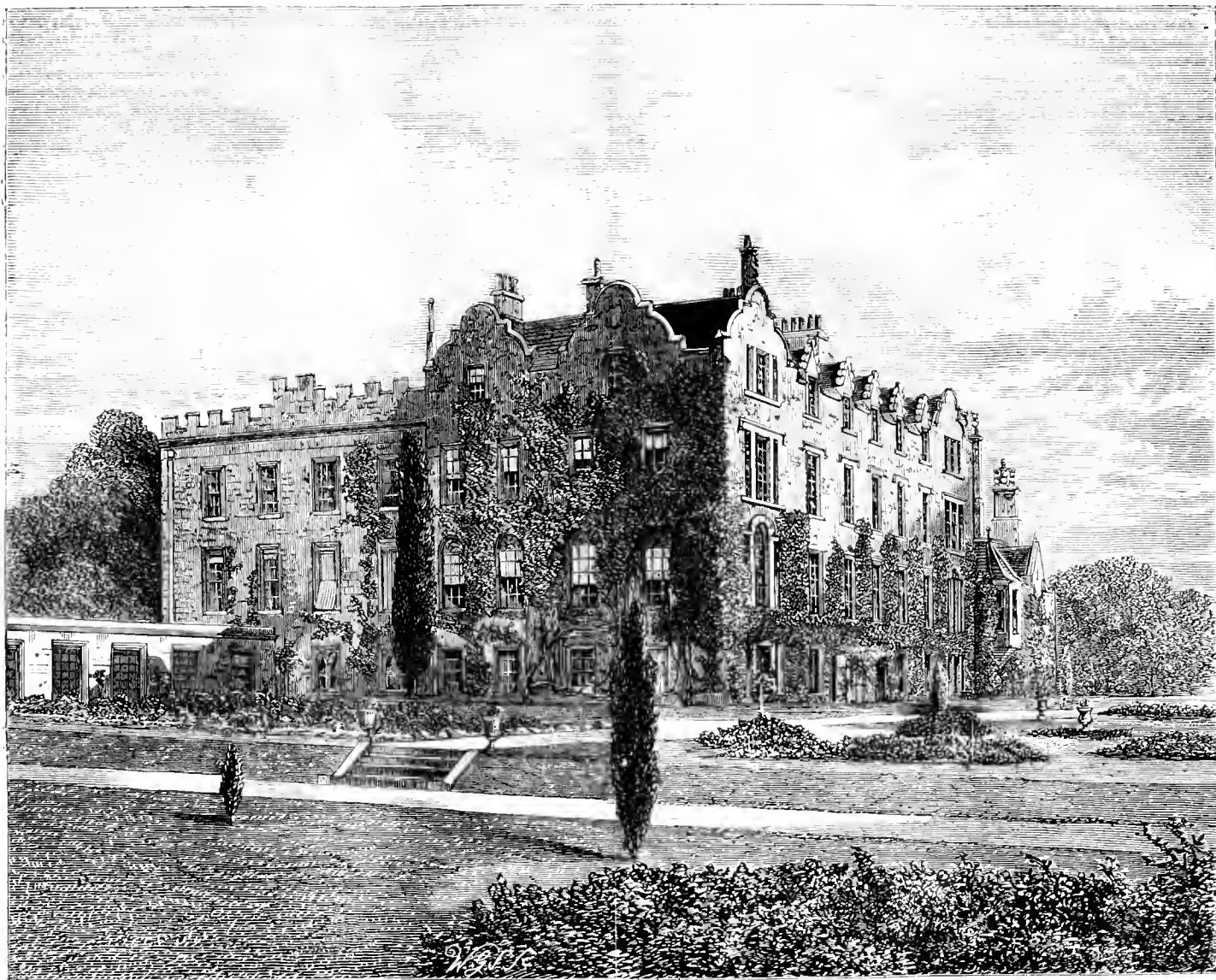


FIG. 36.—NEWBATTLE ABBEY. (SEE P. 278.)

has given us a great quantity of fruit, but owing to the continued wet, much of it has been inferior in quality, and the small or sparse-foliaged kinds have done better than those having an abundant leaf growth, as the former did not root so much; and the smooth, shiny kinds as Vicomtesse Héricart du Thury, Lucas, Victoria, &c., have naturally come out best. President, Sir J. Paxton, Sir C. Napier, and others like them, very much spoiled; in fact, such strong sorts should be quite 4 feet between the rows. To take my notes alphabetically, I find Albert very large, globular, and of fine Hautbois flavour; Aberdeen Favourite, a very free bearer, shiny red, and although a strong grower, it has done well—it is rather late; A. F. Barron will, I think, be a good market Strawberry; Auguste

Filbert Pine have been very good. As far as earliness is concerned in the open, the frost of Whit-Sunday cut all the King flowers, and they came in together—King of Earlies, Alice Maude, Hooper's Seedling, Noble, Grosse Sucrée (very fine this year), and Viscomtesse H. de Thury being in the earliest pickings; as usual, the new beds were a week the earliest. Those who are making new beds cannot take too much pains to manure the land freely and to cultivate deeply, the quarters so prepared show the generous treatment until the last. Waterloo has been extra fine, and proves a good wet weather berry. Monsieur Tournier is quite distinct, and not such a good bearer. We consider the long frost and snow gave the Strawberries a rest, and they never started more freely, and looked better than in the past

quarters. Other horticultural societies with a surplus this season should come to the rescue also, and that without delay. One or two other ideas suggest themselves in connection with eliciting aid for this charity. For some unexplained reason, the Fund has not hitherto derived much support from Scotland. Now our Scotch brethren of the craft have a grand opportunity for making amends for their apparent lukewarmness—and that soon. On the occasion of the forthcoming International Fruit and Flower Show in Edinburgh on September 9, 10, and 11, let the powers that be organise themselves into a collecting committee in aid of the Fund, by scattering boxes about the show, and advocating its claims upon the charitable in every possible way. The various gardeners' mutual improvement associations will soon

be commencing their sessions. Would it not be a good plan to have a collecting-box on the table at each meeting, so that those who felt so inclined to afford a small sum might do so. *J. B.*

IS HYDRANGEA PANICULATA A HARDY PLANT?—At a flower show recently held at Bridgewater, there was a class for "eighteen bunches of hardy perennial and bulbous plants," and the judges disqualified one stand containing a bunch of *Hydrangea paniculata*, it is stated, on the grounds that it was not a perennial, and not hardy. I think they were quite right in objecting to *Hydrangea paniculata*, on the ground that it is not what is generally accepted as a perennial, it being very properly classed in catalogues with hardy shrubs, and not with hardy perennials. But as *H. paniculata* finds a place in lists of hardy shrubs—that of Messrs. Veitch & Sons, for instance—I do not think it should have been objected to on the ground it is not hardy. Indeed, Mr. George Nicholson, of Kew, a trusted authority, holds this species to be hardier than *H. hortensis*, which other good authorities hold to be by no means hardy, except at or near the sea-side, and as requiring some protection during winter, where the conditions of climate are not favourable. But it is further stated, the judges somewhat complicated matters by accepting *H. hortensis* and *H. otaksa* as admissible; at any rate, they were not objected to. *E. W.*

NEW GRAPES.—Being in the neighbourhood of Appley Towers, Isle of Wight, on August 1, I called to see these new *protégés* of Mr. Myles, viz., Appley Towers, black—and Lady Hutt, white, which have already gained First-class Certificates from the Royal Horticultural Society, as new and distinct kinds, and likely to prove standard late varieties, especially in the hands of good Grape growers. It cannot be said they have any special treatment at Appley Towers, for they are grown in a mixed house, inarched on to indifferent stocks, which had hitherto failed to give satisfactory Grapes. The canes thus made were afterwards bent down and layered on to the surface of the border. The bunches are not extraordinarily large; but the size and shape of the berries are so prominent as to at once arrest the attention of the most casual observer, unless the unusually bad weather all through August has prevented or hindered the ripening process. I understood it is Mr. Myles' intention to submit them for public criticism before the International Fruit Exhibition at Edinburgh on September 9, 10, 11, when gardeners and others interested may inspect them. It would be unfair to expect to find such late kinds in best condition so early in September unless specially forced for that early date, and which, I understand, these have not been. Nevertheless, I am of opinion sufficient merit will show itself, under such adverse circumstances to justify the exhibit. The origin of these splendid Grapes has been before given in the columns of the *Gardeners' Chronicle*. Mr. Myles has, I observed, planted entire houses of each kind, and judging from appearances, even better results may confidently be expected next year; moreover, he has also worked up a large stock of strong planting canes, in readiness for commercial purposes. *W. Crump, Madresfield Court, Malvern.*

"SIMPLES."—An old subscriber begs the favour of the name of a herb which she has had sent to her, from Derbyshire, where it seems to be much used by villagers for curing lumbago, as it acts favourably on the liver, &c. It grows in arable fields and other places, but is not a rock plant, so far as she can ascertain. Some people called it Pellitory, but this does not resemble Pellitory of the wall in any way. It is most successful in removing lumbago—2 oz. of the herb with a pint of boiling water poured over it, and left till it is cold, a wineglassful being taken twice a day, fasting. *Leamington.* [The plant sent was *Alchemilla arvensis*, and given faith would no doubt be proportionately useful. *Ed.*]

FERN NOMENCLATURE.—Your correspondent Mr. W. Napper (p. 246), is not the only lover of Ferns who has been perplexed by the confusion in their nomenclature. As far as the genera are concerned, it would be an excellent plan if those of the *Synopsis Filicum* were adopted, raising the sub-genera to the rank of genera. But as regards species, the question is infinitely more complicated. Here, in many groups, an entire revision is required, and a double arrangement will be necessary—a botanical and a horticultural. For instance, *Lomaria procerca*, a Fern of soft, herbaceous texture, is as different as possible in a gardener's eye to the cast-iron-looking *Lomaria chilensis*; yet there are connecting forms, and both are held by Mr. J. G. Baker to be varieties

of the former species. So again with *Hypolepis distans*, and several other species of this genus, which cannot be satisfactorily separated from *Polypodium* (*Phegopteris*) *punctatum*, though in the *Synopsis* the first-named genus is placed in the one great division of *Involucratae* (sori furnished with an involucre), and the second in the other division of *Exinvolucratae* (sori without an involucre), and they are separated by four tribes, and heaven knows how many genera from each other! On asking Mr. Baker to which genus *Phegopteris punctata* ought to be referred, *Hypolepis* or *Phegopteris*, he replied, "Both!" And no doubt he was right, for some of its forms approach nearer to one, and others to the other genus. *Alfred O. Walker.*

DINARD.—This pretty French watering place, with its lovely deeply-indented coast-line, offers many attractions to the horticulturist. The climate seems very mild, and numbers of the half-hardy and tender shrubs and plants can be grown; this fact has been largely taken advantage of by English villa owners, of whom there is a numerous colony. The Bamboos particularly seem to flourish near the sea; in fact, quite rival the Tamarisk. Fruit-culture can be carried on here under most favourable auspices, and I never remember to have seen such an un-failing crop of Pears as there is in every garden and orchard one sees. The different varieties all attain to an unusual size; this is best exemplified by the huge specimens of Williams and Beurré d'Amanlis, now exhibited in the fruiterers' windows. The Golf course at St. Briac will be soon one of the best in Europe, it runs parallel with a bold coast-line, and is a rare hunting ground for wild flowers. One often has to play one's ball on a carpet of Autumn Squills. In fact, the ground is as thick with the Squills as an English meadow with Buttercups. In the dry hollows *Solanum nigrum* grows abundantly, and the *Eupatorium* in those that are damp. *Vagabond.*

SEED PODS ON ORCHIDS.—I enclose herewith two seed pods, half developed, of the *Dendrobium Brymerianum*, with the flowers on them unopened. This is the second time this plant, which is the short-bulbed species, has attempted to flower with me, and on each occasion instead of the flower opening it has shrivelled, and seed pods have developed. It seems difficult to understand how the flower buds could have become fertilised—yet there it is. On the last occasion, I let the seed ripen, being curious to see if they would germinate, but none of them did. Can you explain the cause of this phenomenon? I have tried the plant both in the intermediate and East Indian houses. *Richard S. Bond.* [The flowers are closed and imperfectly developed. At first, we thought it a case of close fertilisation (cleistogamy), but, on examination, we find no trace of pollen. The ovules are not properly developed. The swelling of the ovary, and the formation of imperfect ovules, is not an uncommon result of irritation, unconnected with the action of the pollen. *Ed.*]

NOTES ON SOME VARIETIES OF APPLES.—I was much obliged for the trouble you so kindly took to report on the fungus on the Apple leaves I sent you, and intend to try the remedy you suggest. The curious thing is, that among lully sixty different varieties only two, the Melon Apple and Lord Suffield, are affected. These are in different parts of the orchard, and all the trees of these varieties are affected, the neighbouring trees being free from the fungus. I take it that these two varieties are peculiarly liable to this particular pest, and it might be interesting to know if this proves to be the case in other places. Whilst on the subject of Apples, I may perhaps be permitted to mention, as one who has taken up the cultivation of these fruits experimentally with a great deal of interest, that with my experience thus far of a large number of sorts—more than I should plant again had I, with my now gained experience, to start a'resh—I have found the sub-joined the most satisfactory as regards the combined desiderata of reliability, quality, and beauty in my soil: Eckhville Seedling, a grand fruit; Duchess of Odenburg, most prolific and beautiful; Lord Grosvenor, a splendid codlin; Lord Derby, of immense size, and a good keeper; Peasgood's Nonsuch, worth growing, if only for its size and beauty, but with me it is also an excellent cooking Apple; Warner's King, immense fruit, and of excellent quality; Cox's Orange Pippin, early and abundant, and of exquisite flavour; Blenheim Orange, bears well on young trees if on the paradise; Loddington, very large and handsome; Lane's Prince Albert,

most prolific; Bramley's Seedling, a trustworthy variety; Mère de Ménage, an immense fruit, very handsome and unique in appearance; Landsberger Reinetten, a little known variety, but a beauty. *George Benington.*

CARNATIONS AND PICOTEEES.—Mr. Douglas points out the difficulty in saving seed of the finer sorts in such seasons, especially, as we are having. Some years ago, Mr. J. P. Sharp, when living at Perry Barr, Birmingham, pointed out to me some plants, in 48-pots, removed to a greenhouse when blooming, and impregnated, and he had a good supply of pods of seeds, remarking at the time on the advisability of keeping plants in small pots for seed-bearing purposes. Such a season as this, especially in the Midlands and the North, very little seed will be harvested, I fear. Amateurs should get layering finished at once, so as to have the layers well-rooted early; then the plants can get through the winter in a healthy state. Many delay layering, and ill-rooted plants are the consequence. Mr. Douglas has raised and introduced some very fine varieties, especially yellow ground sorts, and there is a superb variety of his named Lillian, which adds materially to his list of honours. The stock of this very fine variety he sold to Mr. R. Sydenham, who let a few of his Birmingham friends have plants. It is a yellow ground, heavily edged and rayed with very bright scarlet, contrasting so well with the clear bright yellow ground colour, of very fine form, and having a well-formed pod. It is a very beautiful, distinct, and bright variety. *W. D.*

THE VARIEGATED ENGLISH ELM.—Your correspondent, Mr. R. Dean, in your last week's impression, wrote of a fine variegated English Elm at Ealing, and thinks there is reason to believe it to be an accidental seedling. There were two large silver variegated Elms at this place (Thornham Hall, Ealing), one of which was cut down to give the other more room. The one that is left cannot be less than one hundred years old, as it was a large tree when I first knew it, forty-three years ago. I enclose a piece for inspection. There may not be a great many specimens of it in England, but Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, have, I believe, a large stock of it. It is very conspicuous amongst Oaks and other green-leaf trees, and is a noble companion to the variegated Acers, &c., especially the *Negundo albo variegata*. The variegation in the Elm is not generally so good in a wet summer as in a dry one. *John Perkins.*

ECKFORD'S SWEET PEAS.—Every gardener knows well the value of a good strain of Sweet Peas, and where there is a large and constant demand for cut flowers, usually prepares two or more sowings from which basketfuls of flowers may frequently be gathered. In Mr. Eckford's novelties we have been favoured with something good and very far ahead of what was at one time thought excellent. Of the whites, Mrs. Sankey might well be termed the queen, for it is a handsome thing. The individual flowers are large, with standards pure white, and borne on strong stalks, and the plant is exceedingly robust. I know of no white to equal it. Lemon Queen is very pretty, and Her Majesty a beautiful pink, with a white eye; Purple Prince, rich purple; Ignea, deep crimson; Countess of Radnor, Gaiety, Orange Prince, Princess of Wales, very peculiar; Primrose, Apple Blossom are all good. Empress of India must not be forgotten, for it is exceedingly pretty, the standards being rosy-pink, and the wings white. These in their separate colours are very useful, and help, not only to beautify the borders, but when planted at intervals they may be kept to their colours better, taking care, should a "rogue" appear, to remove it at once. To give praise where it is due, I am sure there is ample room to congratulate Mr. Eckford on his success. *H. Markham.*

BROADWAY.—To any one who loves Mr. Alfred Parson's pictures, this quaint old English village must be very dear. Most of your readers will now be thinking of holidays; there are few places that offer more attractions to those that love Nature in her quiet moods than this. The cottage gardens are gay and bright with all manner of sweet-smelling flowers, and the linteils and perchways are wreathed with Roses and other creepers. As an additional inducement, I may say how favourite a place it is for Americans. Many of them have taken houses there, and the visitors' book of the "Lygon Arms," the old-fashioned hostel, is full of well-known transatlantic names. One sweet garden, with grass walks

and a long arcade of Roses, and a stone quadrangle with Musk growing up from the crannies, has as yet escaped Mr. Parson's pencil. It is also a paradise of wild flowers, and one hill-side was more vividly painted by Nature than any hill-side I had ever seen. The prevailing flowers were the giant Campanula and the Sunflower-like Elecampane; this latter flower, sacred to "Sweet Helen," by whose kiss Faustus prayed to be made immortal, grows most luxuriantly. A garden of Sunflowers is brilliant indeed; I must leave to the imagination a description of a hill-side clad with them. *Fagobond.*

PHORMIUM TENAX COLENSOL.—Last year this plant threw up two flower-spikes 15 feet high, and bore a full crop of seed, some of which was harvested and sown early in April of this year, the consequence is, that we now have dozens of nice little plants, and fortunate it is, for the late severe winter killed the plant entirely. This variety is one of the best of the family for outdoor use, the glaucous tint of the underneath side of its broad leaves give a nice contrast in colour to the upper side, which have a tendency to a brown tint. The flowers are quite insignificant. As a water-side plant this Phormium is capital. *M.*

VERBASCUMS.—*Verbascum phlomoides* is well worthy of cultivation in herbaceous and shrubby borders, but is not often seen. A few plants of it in a garden near here are very effective at the present time, far more so than any other member of the genus that I have seen. *V. Blattaria*—a somewhat rare native plant—is the nearest approach to the above for showiness, and is by no means to be despised when it can be obtained; *V. thapsus* and *V. nigrum* are only fit for the wild garden, and for naturalising in conspicuous places in woods and parks. They all prefer a limestone or sandy soil, and seed abundantly. *V. thapsus* has lately been mentioned by some writers as a plant not often seen, and likely to be lost; but, judging from its behaviour in this neighbourhood, and also on the limestone hills of Kent, I consider we shall be a very long time before we lose it. *W. H. Divers, Ketton Hall Gardens, Stamford.*

STRAWBERRY WATERLOO—This variety has cropped much better in this neighbourhood the past season than it has previously done; it would be interesting to know if growers in other parts of the country have found any improvement in this respect, and if so, whether it is to be attributed to any peculiarities of the season, or to a recovery of vigour that had been lost through over-propagation. It is one of the finest-looking late Strawberries we have, and is also of excellent flavour if allowed to get thoroughly ripe before it is gathered; but mistakes may easily be made here, as this variety is longer than most kinds of Strawberries in reaching maturity after colouring commences. *W. H. Divers, Ketton Hall Gardens, Stamford.*

DANIELS' "CONTINUITY" CABBAGE LETTUCE.—I sowed a row of this Lettuce in the spring at the same time as Paris Cos, and am very pleased with it. It fully merits the name of Continuity; it came in early and is as good now in the middle of August from the one sowing as it was at first. The Paris Cos and the ordinary Cabbage variety have both bolted long ago, but this does not seem to get any more advanced in that direction at present. It is a brown Lettuce of good flavour, and it grows to a fair size. Ours is a heavy soil, and any Lettuce that shows no disposition to go to seed is an acquisition. The row was thinned, and those that were transplanted at that time have turned out as well as the ones that were left. *W. J. S.*

POTATO DISEASE.—I was much gratified by the universal good account of the Potato crop, and absence of all disease, as reported in the *Gardeners' Chronicle*, up to August 8; but on that day, I noticed some spots on leaves of Potato haulm. I was certain on Monday (10th) that it was the old story. A day or two after I was quite certain—the Myatt's Prolific patch was much infected. To-day I perceive a large patch in the middle of my Gloucestershire kidneys, and leaves spotted all round it; so I can confidently report that the plague has begun. [In too many other places also. Ed]. I do not like the look of my Mona's Pride, but the later Potatos as yet seem very clean. I have not yet heard of the disease in any other garden hereabouts, but I have no doubt the *Gardeners' Chronicle* will have plenty of same report as mine. The prospect of the small

crop of Apples and Pears on the trees is a poor one. Apples and Pears black spotted and falling down, the leaves also of some sorts falling withered to the ground. Of course all attributable to the cold nights. Bees have stopped work altogether, after doing so well for a fortnight. *Salop.*

SOCIETIES.

ROYAL HORTICULTURAL.

FLORAL COMMITTEE AWARDS, Tuesday, August 25.

First-class Certificate.

- To *Hypericum Muscariatum*, from Mr. A. Waterer.
- To *Cupressus Arizona*, from Messrs. J. Veitch & Sons.

Awards of Merit.

- To *Dahlia John Walker*, from Mr. J. Walker.
- To *Gladiolus Thalid*, from Messrs. Kelway & Sons.
- To *Gladiolus Bias*, from Messrs. Kelway & Sons.
- To *Gladiolus James O'Brien*, from Messrs. Kelway & Sons.
- To *Cactus Dahlia Delicata*, from Mr. T. S. Ware.
- To *Border Carnation La Neige*, from Mr. T. S. Ware.
- To *Carnation Mr. C. R. Humbert*, from Messrs. Dicksons Limited.
- To *Cactus Dahlia Kyrerith*, from Messrs. Keynes, Williams & Co.
- To *Cactus Dahlia St. Catherine*, from Messrs. Keynes, Williams & Co.
- To *Cactus Dahlia Baron Schroder*, from Messrs. Keynes, Williams & Co.
- To *Single Dahlia Miss Glasscock*, from Messrs. J. Cheal & Sons.
- To *Cactus Dahlia R. Cannell*, from Messrs. H. Cannell & Sons.
- To *Cactus Dahlia Swanley Castle*, from Messrs. H. Cannell & Sons.
- To *Dahlia Arthur Ocock*, from Mr. A. Rawlings.
- To *Dahlia Mrs. L. Stambidge*, from Mr. A. Rawlings.
- To *Dahlia John Rawlings*, from Mr. A. Rawlings.
- To *Dahlia Mrs. McIntosh*, from Mr. A. Rawlings.

MEALS.

- Silver gilt Flora.*
- To Messrs. Kelway & Sons, for collection of Gladioli.
- Silver Flora*
- To Mr. G. Phippen, for collection of Dahlias.
- Silver Bursian.*
- To Messrs. H. Low & Co., for collection of Lilies.
- To Messrs. Keynes, Williams & Co., for collection of Dahlias.
- To Messrs. J. Cheal & Sons, for collection of Dahlias.

Bronze Bursian

- To Messrs. H. Cannell & Sons, for collection of Dahlias.
- To Messrs. Wallace & Co., for collection of Lilies.
- To Mr. W. H. Divers, for collection of border Carnations.
- To Mr. S. Mortimer, for collection of Dahlias.
- To Mr. J. Quarterman, for collection of Oaks (cut specimens).

ORCHID COMMITTEE AWARDS.

Botanical Certificate.

- To *Zygopetalum grandiflorum*, shown by Messrs. Charlesworth & Shuttleworth.

Cultural Commendation.

- To J. Douglas, gr. to Mrs. Whitbourne, Ilford, for *Cypripedium Lowianum*.

Awards of Merit.

- To *L. elegans Blenheimensis*, shown by T. Statter, Esq., Manchester (gr. R. Johnson).
- To *Cattleya Behrensiana*, shown by F. Sanler & Co.
- To *Sobralia leucantha*, shown by Seeger & Tropp.

BASINGSTOKE.

The Basingstoke Horticultural Society held its annual show at Hackwood Park on Thursday, August 20, near the town, but unfortunately the heavy rain that fell during the afternoon caused a thin attendance of visitors, and the exhibits were likewise not quite so numerous, at least, in the plant classes, as on former occasions.

The principal plant class was one for twelve specimens, in or out of bloom, and in this competition Mr. Bowerman, gr. to C. Hoare, Esq., Hackwood Park, was easily 1st, the high quality of his flowering plants eclipsing all others—a *Cero-dendron fallax* was especially well flowered; Mr. Russell, gr. to Rev. S. Saville, Audley's, Basingstoke, was 2nd.

Mr. T. Weaver, gr. to W. C. Gilchrist, Esq., Oakley Park, Basingstoke, exhibited the best foliage plants in the show—six species, well grown; he also showed a like number of exotic Ferns, in perfect health; Mr. G. Southcott, gr. to Captain Oldfield, South Warnboro', being 2nd in this class.

Mr. Kneller, gr. to U. S. Portal, Esq., Malshanger Park, Basingstoke, was the most successful exhibitor with hardy Ferns, eight species, distinct; and Mr. Tripp, gr. to Mrs. Field, Goldings, Basingstoke, was 2nd.

In the specimen foliage-plant class, Mr. Bowerman staged a well-grown and coloured *Croton Queen Victoria*, and secured the 1st prize; Mr. Weaver depended upon *Cycas revoluta*, and was put 2nd.

Fuchsias formed notable exhibits, Mr. Russell's, which gained premium honours, being finely grown and flowered, from 7 to 8 feet high.

In the class for *Coleus*, all exhibits were pyramidal in shape, Mr. Southcott taking 1st with plants about 6 feet high.

Tuberous *Begonias* were more remarkable for the good quality of their flowers than for the size of the plants. Mr. Norris, gr. to J. Porter, Esq., Kingsclere, was 1st for six.

Table plants were a very superior lot, and Mr. Bowerman just won the 1st prize.

There was but one class for a group of miscellaneous plants, arranged for effect, one of which came from Mr. Weaver; and if it had not won the 1st prize in a large competition, the quality of the others must have been very high indeed, so suitable were the plants for the purpose, and very skillfully arranged.

Cut flowers made a great display. For twenty-four blooms of Roses, Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was 1st with even-sized, well-coloured blooms. The Rev. C. Eddy, Bramley, 2nd. For twelve blooms, Mr. Neville was again successful. The premier bloom—A. K. Williams—was found in his stand of twenty-four. Messrs. Weaver and Norris took 1st and 2nd places for twelve distinct flowers with good collections neatly staged. The blooms of herbaceous perennials made a nice display, Mrs. Kneller having the best.

Bouquets, devices of various kinds in flower, and table decorations were numerous and pleasing in the arrangement of their constituent materials. The winners—all ladies of the neighbourhood—were Miss M. Owen, Miss M. Lowe, Mrs. Osman, Mrs. Rowe, Miss Milsom, and Mrs. Wadmore.

Fruit was numerous, and likewise of good quality. For six dishes, Mr. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, was 1st, and Mr. Best, gr. to — Chute, Esq., Old Vigne, Basingstoke, was 2nd. Black Hamburg Grapes were staged by five competitors, Mr. Holloway, gr. to F. W. C. Reade, Esq., Down Grange, was 1st, with bunches which were excellent in every way, and Mr. Osman was 2nd. For any other Black variety, Mr. Holloway staged good *Alicante*, Mr. Osman coming next with *Madresfield Court*. Mr. Osman had the best *Muscad of Alexandria*.

Melons were numerous and of average quality. A variety named *Countess*, a green-fleshed fruit, from Mr. Norris was the best, as *Blenheim Orange* from Mr. Bowerman, among *Scarlet-fleshed* varieties, *Violette Hative Peaches* and *Lord Napier Nectarine* from Mr. Bowerman, were the finest in the Single-dish Class. Apples were a strong class. *Cherries* from Mr. J. Wasley, gr. to C. Lethbridge, Esq., Sheffield Manor, were very fine. *Apricots* from Mr. Bowerman equally so.

Vegetables, always good at Basingstoke, were well shown for Messrs. Suttons' and Messrs. Webbs' prizes for six dishes, 1st honours being secured by Mr. Lye, gr. to W. H. Kingsmill, Esq., Lydmonton, in both classes; Mr. Kneller following. Messrs. Lye, Kneller, and Bowerman shared the principal prizes in the classes for separate dishes, all competing strongly.

Messrs. Sutton & Sons exhibited an attractive stand, consisting of cut flowers in varieties, and *Gloxinias* in pots. The latter, a choice lot, were from seed sown in February last, and they had several large blooms on each plant.

NORTH OF SCOTLAND APIARIAN.

The annual show of this society was held in Dathie Public Park, Aberdeen, close to the Floral Fete of the Royal Horticultural Society of Aberdeen, on the 20th, 21st, and 22nd ult. The number of entries, as compared with those of last year, showed a slight decrease—a fact attributable to the unpropitious weather that has prevailed of late. The show was opened by Baillie Lyon. He congratulated the promoters on the splendid turn-out of material. "Bee culture," he said, "was one of those recreations that ought to be encouraged, and that the Aberdeenshire County Council, following on the lines of some of the English county councils, should make grants to societies such as that, in order to encourage them in their work."

The Rev. William Jones, Skene, President of the Society, thanked Baillie Lyon for opening the show, and the magistrates present for their presence, and concluded by presenting each of them with a box of honey. The judges of the show were Mr. Stewart, Arbroath, and Mr. Carnegie, Marykirk.

In the course of the day an exhibition of bee driving was given, the prize for which was gained by Mr. Macfarlane, Old Aberdeen.

Special attention was bestowed by visitors on the observatory hive of Mr. William Smart, Apiary Cottage, Torry, which was awarded the 1st prize.

A speciality of the show was an assortment of honey-flavoured cakes made by Mrs. Murray. For the neatest and best display of honey extracted and in comb, Mr. James Shearer, Aberdeen, got the 1st place, the same gentleman securing premier honours for the best collection of honey in sections. Mr. Munro, Crathes, took 1st and 2nd places for sections of comb honey (not heather). He was also 1st for the best sample of wax, and topped the list for the best six 1-lb. jars of run honey. For the best sample shown in glass jar, Mr. Ross, Aberdeen, was 1st; Mr. Craih, Echt, securing the place of honour for the best super of honey. The Society's Silver Medal, for the best collection of hives and bee furniture, was carried off by Miss Mary C. Innes, Free Church Manse, Skene, as also the 1st prize for the most interesting exhibit in the show, in connection with bee culture. Miss Rennie, Aberdeen, was 1st for meal, and also for honey-flavoured cakes, with recipe attached. The arrangements of the secretary, Mr. William Murray, were most complete. The show was visited by a large number of persons.

ROYAL HORTICULTURAL OF ABERDEEN.

THE annual floral *file* of this Society was opened on Thursday, the 20th ult., in the Dathie Public Park, and continued until Saturday, 22nd. As compared with last year's show, there was an increase of entries of 124—the total in the 232 classes being 1731, as against 1607.

Considering the lateness of the season, the exhibits were excellent, and the centre of attraction was the marquee set aside for the gardeners, where four tables, each 18 feet by 6 feet, were filled with stove and greenhouse plants. Mr. Proctor, gr., Devanha House, Aberdeen, took the highest award—the Silver Cup—with a magnificent table, which included *Gleichenia flabellata*, *Erythrina crista-galli*, and two specimens of *Clorodendron Balfourianum*.

Mr. Proctor was 1st for the most tastefully arranged collection of cut flowers. The 2nd prize-table was that shown by Mr. Grigor, gr. at Fairfield; the plants were second in point of size, but perhaps equal so far as the taste displayed, and in cultivation. Mr. Grigor, among other fine plants, showed a flowering specimen of the *Statico Rattreynana*, several very fine *Crotons*, and *Cocos Weddelliana*. Mr. Strachan, gr. to Mr. Fyfe, Beechgrove House, was placed 3rd with a pretty table, which displayed the results of considerable care and skill.

Cut Flowers.—The display of these was a highly creditable one. In the professional division, Mr. J. Proctor was again to the front, securing 1st honours for the best collection of cut flowers arranged on a table 8 feet by 3½ feet. It contained a magnificent lot of *Roses*, and was undoubtedly the best table shown. *Roses* in all the divisions were in splendid condition, and the show of *Pansies* was a very fine one.

The amateur and working-men's sections were almost equal in quality to the professionals. The cut *Roses* were a beautiful show of themselves, and the Duke and Duchess of Fife *Roses*, shown by Messrs. Cocker & Sons, Aberdeen, came in for a large share of attention.

Fruit.—Undoubtedly one of the principal exhibitions in the show was the display of fruit, which has not been surpassed. In the professional section, Mr. A. Reid, gr. to Mr. H. B. Baird, Durris, was awarded the Silver Cup for the best collection of fruit; and Mr. A. Milne, Queen's Road West, was 1st for the best collection of hardy fruit. Mr. Milne's collection contained grand dishes of *Strawberries* and *Currants*. *Strawberries* were shown in all classes in large numbers, the specimens forward being very large and well-flavoured. Mr. Strachan was to the fore with four bunches of *Grapes*, white and black; and Mr. Reid, Durris, was a good 2nd. For *Peaches* and *Apples*, R. K'oh, J. B. Middleton, and J. Grant, received premier honours. These were excellent, and the amateurs ran the professionals very close.

Mr. T. B. Middleton, gr. to Sir Arthur Grant, Bart., of Mynusk, took the premier place for the best collection of vegetables, and Mr. William Anderson, Lower Cornhill, secured a similar position for the best collection open to market gardeners only. Mr. W. D. Brownie, Ellon, carried off similar honours amongst the amateurs, while Mr. W. D.

Kirkton, Ellon, had the finest working-man's display. *Potatoes* were not so good as last year, but the rainy weather is to blame for that. In almost all the prize plates a *Potato* known as the "Maggie" was found. It has been found to be an excellent *Potato*, and a good cropper.

Mr. Taylor, Raeden, carried off the Silver Medal in the professional class for the best four varieties of *Potatoes*.

Reference may here be made to the wild flower competition, open to boys and girls, under sixteen years of age. It was quite refreshing to see the number of whom neglected plants that had been garnered—the *Hairball*, the *Thistle*, the *Erica vulgaris*, the *Meadow Sweet*, the common *Tansy*, and the pretty but neglected *Ox-eyed Daisy*. Miss Robina Paul, Woodside, took the 1st award with a lovely bouquet.

The opening ceremony was performed by Baillie Lyon, and there was a large and distinguished company present.

DEVON AND EXETER HORTICULTURAL.

AUGUST 21.—The Annual Summer Exhibition was held in Exeter, in the lovely grounds of Northernhay. The number of competitors was unusually large, and the quality of exhibits was excellent.

Cut Flowers, Open.—Twenty-four *Roses*, distinct: 1st, Mr. Geo. Humphreys. Forty-eight *Dahlias*, double, distinct: 1st, Mr. Geo. Humphreys, who had a capital stand, including *Ovid*, R. T. Rawlings, Crimson King, Mr. Saunders, J. T. West, H. K'oth, D. Saunders, R. v. J. D. Goody, Major Clarke, J. Cooper, J. Forbes, Maude Fellows, Seeding, Mrs. Humphreys, Peacock, Vice-President, Salamander, Nellie Grand, J. B. Camm, Earl of Ravensworth, Mr. N. Halls, J. T. Saltmarsh, S. Barnett, J. W. Lord, J. Ashby, Duke of Albany, Mr. Giascock, Battercup, Hugh Austin, Gaiety, W. Rawlings, Major Bartlett, Mr. Gladstone, Prince Bismarck, Agnes, Mr. L. Large, Queen of Belgians, Clara, Mr. Campbell, Burgundy, Mr. Harris, Mr. G. Rawlings, J. Stephens, Mrs. Langtry, H. Walton, Countess of Ravensworth, William Garratt, Horid. Forty-eight *Gладиoli*: 1st, Mr. B. James, gr. to Sir W. Lethbridge.

Plant and Flowers in Pots.—Nine stove and greenhouse plants in flower, distinct: 1st, Mr. W. Rowland, gr. to W. Brock, Esq., with well-grown specimens of *Allamanda nobilis* and *A. Hendersonii*, *Platadenia amabilis* and *D. Brearleyana*, *Stephanotis floribunda*, splendidly flowered; *Ixora Williamsii*, very good; *Erica amula*, and *Rondeletia spiciis*.

Nine stove and greenhouse foliage plants, distinct: 1st, Mr. Rowland, with excellent specimens of *Lytania barbonica*, *Cycas revoluta*, *Croton Andreanus*, *C. Johannis*, *C. Prince of Wales*, and *C. Disraeli*, *Anthurium Waroceanum*, *Thrinax elegans*, and *Kentia Belmoreana*.

Six stove and greenhouse foliage plants, distinct: 1st, Mr. Currey, with capital specimens of *Cycas revoluta*, *Lytania barbonica*, *Croton Disraeli* and *C. Countess*, *Kentia australis*, and *Thrinax elegans*.

Nine stove and greenhouse Ferns, distinct.—Mr. Ebbut was to the front with a capital lot of well-grown specimens, fresh and of good colour, including *Davallia*, *fiijensis*, *plumosa*, and *Mooreana*, *Goniophlebium subauriculatum*, *Adiantum Cardiochlamna*, *Microlepia hirta cristata*, *Neottopteris australasiae*, *Neprolepis Davallioides furcans*, *Adiantum grandiceps*, and *Gleichenia nepalensis*.

Miscellaneous collection of plants arranged for effect in an oval, with a diameter of 12 feet by 16 feet. Silver cup, value £5.—Mr. Rowland was deservedly placed first with a superb arrangement, being perhaps the best that has ever been staged at this exhibition; 2nd, Mr. Ebbut, whose collection was excellent, and showed a new departure in arrangement, which will no doubt create a new departure in this class in the future.

Six *Fuchsias*, distinct.—1st, Mr. R. Staddon, gr. to Lord Conchenay, with wonderfully fine and well-grown specimens.

Six *Dracenas*, distinct.—1st, Mr. Rowland, with fine species of *Goldiana*, *Baptisti*, *Cooperi*, *alba marginata*, and *Lindenii Ferrae*.

Six double zonal *Pelargoniums*.—1st, Mr. Prothero.

Six single zonal *Pelargoniums*.—1st, Mr. Prothero.

Fruit.—Collection of Fruit, ten dishes, distinct.—1st, Mr. James Lloyd, gr. to V. Stuckey, Esq., with

good dishes of *Gros Colmar* and *Muscat of Alexandria* *Grapes*; *Brown Turkey Figs*, *Dymond Peach*, good; *Melon* (cross between *Hers of Lockinge* and *Long-leat Perfection*), *Moor Park Apricot*, Mr. Gladstone *Apple*, *Florence Cherry*, *Pine-apple Nectarine*, and *Jargonelle Pear*. 2nd, Mr. A. Crossman, gr. to J. Bruton, Esq., who had splendid dishes of *Dymond Peaches* and *Pine-apple Nectarines*.

Collection of Fruit, six dishes.—1st, Mr. R. Mann, gr. to Sir J. Shelley, Bart., with capital dishes of *Black Hamburg Grapes*, *Crawford's Early Peach*, *Pine-apple Nectarine*, *Moor Park Apricots*, *Melons*, *Plums*.

Vegetables.—*Vegetables* were never staged in better condition. The collection shown by Mr. G. Copp excelled anything ever seen here before—it was simply perfect.

Collections of vegetables, twelve kinds, distinct.—Silver Cup, value £5, and Gold Medal given by *Gardeners' Magazine*: 1st, Mr. G. Copp, with *Celery Wright's Grove White*, *Carrot Sutton's Intermediate*, *Cauliflower Veitch's Autumn Giant*, *Bet Pragnell's*, *Onion Veitch's Main Crop*, fine; *Runner Bean Ne Plus Ultra*, *Tomato Sutton's Perfection*, *Potato Sutton's Seeding*, *Parsnip The Student*, *Leek The Lyons*, *Pea Duke of Albany*, *Cucumber Sutton's Prizewinner*. Mr. Inglefield was an excellent 2nd; and Mr. T. Wilkins, gr. to Lady Theodora Guest, a good 3rd. There were eight competitions. Mr. Copp was 1st for *Pears*, *Spring-sown Onions*, *Tomatoes*, *Ma 10 vs. Co'oured Kidney Potatoes*, *Leeks*, and *Turnips*. Mr. Wilkins was 1st for *Cauliflowers* and *White Kidney Potatoes*.

Messrs. R. Veitch & Son, of Exeter, staged a large collection of plants, including many choice novelties; the *Lilium auratum* and *rubro vittatum* were there in abundance, and were very attractive. They also exhibited a large collection of superb *Carnations*, cut blooms, the following varieties being especially good:—*Souvenir le Grand*, *Lady Middleton*, *Countess of Jersey*, *Victory*, *Lord Rendlesham*, *Mrs. Walford*, *Romulus*, *Golden Beece*, *Old Coin*, and *Mrs. Kerwood*. Also cut blooms of single, double, *Pompone*, and *Cactus Dahlias*, in great variety, with *Phloxes*, *Hollyhocks*, *Begonias*, *Asters*, &c. They staged dishes of their new *Potatoes* *Edgecote Early* and *Prodigious*, both excellent varieties, and altogether a very fine exhibit.

MOOR PARK FLOWER SHOW.

The pleasure-grounds at this place were laid out by the famous Capability Brown, in accordance with the wishes of Commodore Anson, and are delightfully varied with the splendour of the *Conifers*, several of which are unique in size and beauty. The centre of the large marquee was occupied by groups of plants, and the stages around by an excellent array of cottagers' garden produce, among them being about seventy dishes of the best varieties of *Potatoes*. We regret the omission of names in shows of the kind, so necessary as a guide to cottagers in securing the better kinds. The fruit tent was occupied by a splendid display from the home gardens. In this tent was also a very beautiful collection of *pompone Cactus Dahlias*. A large collection of wild flowers, arranged in baskets, was shown, one class competing for effect, and another for number of named species. The beautiful Italian garden was at its best.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

POTT'S SEEDLING AND GROSVENOR APPLES.—Will any of our readers who have trees of either Pott's Seedling, Yorks, or Lord Grosvenor (syn. Jolly Beggar), kindly give their experience of the fruit-bearing qualities of these kinds, stating the age of trees, and the district in which they grow. I wish to know if they are good growers, free from canker; if the trees commence early to bear fruit; if the blossoms are liable to get caught by frosts; and what is the size of the fruit of Lord Grosvenor. A.

Obituary.

MR. JAMES BOLTON, steward and head gardener to — Crookshank, Esq., of Saint Hill, near East Grinstead, Kent, died on Friday, Aug. 28, age fifty-three years, after two days' illness, of congestion of the liver and chronic heart disease. He was for

seventeen years head gardener and bailiff at Combe Bank, Sundridge, and for several years held the same position at Birstall Hall, Leicester. He was a very successful exhibitor at many of the leading shows, and he was greatly respected by all who knew him for his uprightness of character. He leaves a widow, with three young children.

HELEN PORTEOUS KNIGHT.—We regret to have to announce the death of Helen Porteous Knight, the wife of Mr. Knight, the head gardener to the King of the Belgians, at Laeken, and formerly of Floors Castle Gardens. By her estimable qualities, Mrs. Knight endeared herself to a large circle of friends, by whom the greatest sympathy is expressed towards Mr. Knight in his bereavement.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Table with columns for DISTRICTS, TEMPERATURE (Day-deg., Night-deg., Accumulated), RAINFALL (Inch., No. of Rainy Days), and BRIGHT SUN. Rows 1-12 represent different districts.

The districts indicated by number in the first column are the following:— Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. Principal Gravelly, Ac., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 29, is furnished from the Meteorological Office:—

"The weather has been extremely rough, wet, and unseasonable in all parts of the kingdom. Thunder and lightning were experienced from time to time; rain fell almost daily, but towards the close of the period, the conditions were improving considerably.

"The temperature has continued below the mean for the time of year, the deficit having ranged from about 1° in the N. and E. to 3° in the West. The highest of the daily maxima were recorded either on the 26th or 27th, and ranged from 70° in 'England, S.' to 65° in 'Scotland, W.', 'England, N.W.', and 'Ireland, S.' The lowest of the minima were generally registered on the last day of the period, when the sheltered thermometer fell to 36° in 'Ireland, N.', and 37° or 38° in Scotland. Elsewhere they ranged from 40° in 'England, S.W.' to 45° in 'England, S.', and to 52° in the 'Channel Islands.'

"The rainfall has been more than the mean in all districts, but especially in the W. and S. parts of the kingdom, where the fall has been more than double the average.

"The bright sunshine has been below the mean in almost all districts. The percentage of the possible amount of duration has ranged from 39 in the

'Channel Islands,' 36 in 'Scotland, W.', and 35 in 'England, S.W.', to 21 in 'England, N.W.', and 20 in 'England, N.E.'

MARKETS.

COVENT GARDEN, September 3.

LARGE quantities of goods continue to arrive, and are being sold at prices which leave only a small margin for the grower. James Webber, Wholesale Apple Market.

Table of FRUIT—AVERAGE WHOLESALE PRICES. Lists items like Apples, Damsons, Grapes, Kent Cob, Filbert, Lemons, Melons, Peaches, Pineapples, St. Michael, Plums.

Table of CUT FLOWERS—AVERAGE WHOLESALE PRICES. Lists items like Asters, French, English, Bouvardia, Carnations, Geraniums, Chrysanthemums, Cloves, Coriander, Eucharis, Gaillardias, Gardenia, Gladioli, Heliotrope, Lavender, Lilium, Lisianthus, Maiden Hair Fern, Marguerites, Mignonette, Myosotis, Orchids, Catleya, Odontoglossum, Pansies, Pelargoniums, Poppies, Pyrethrum, Roses, Tea, Coloured, Yellow, Heliotrope, Sweet Peas, Sweet Sultan, Tuberoses.

Table of PLANTS IN POTS—AVERAGE WHOLESALE PRICES. Lists items like Aralia Sieboldi, Aspidistra, Ferns, Ficus, Fuchsia, Fuchsia plants, Heliotrope, Hydrangea, Lilium, Marguerites, Mignonette, Myrtle, Palms, Pelargoniums.

Table of VEGETABLES—AVERAGE RETAIL PRICES. Lists items like Artichokes, Beans, Beet, Carrots, Cauliflowers, Celery, Cucumbers, Endive, Herbs, Lettuce, Mushrooms, Mustard and Cress, Parsley, Shallots, Spinach, Tomatoes, Turnips.

POTATOS.—Supply not so heavy, prices consequently rule higher. J. B. Thomas.

SEEDS.

LONDON, Sept. 2.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., report all descriptions of Clover seed as strongly held. American red meets with especial favour. Cable quotations come higher to-day, values across the Atlantic being pushed up by heavy German buying. The recent terrible weather has naturally hardened prices for all seeds. Winter Tares and Rye are in brisk request, but short supply. Available stocks of Trifolium are meagre, but the demand is as yet small. For Mustard and Rape seed the tendency is upwards. Fine blue Peas are wanted. Hemp seed is considerably dearer.

POTATOS.

BOROUGH: Sept. 1.—Quotations:—Regents, 70s. to 80s.; Hebrons, 55s. to 70s.; Kidneys, 65s. to 70s.; Imperators, 60s. to 70s. per ton.

SPITALFIELDS: Sept. 1.—Quotations:—Magnums, 60s. to 70s.; Myatt's Kidneys, 60s. to 70s.; Regents, 60s. to 55s.; Imperators, 60s. to 75s.; Hebrons, 60s. to 70s.; Snowdrops, 60s. to 80s. per ton.

STRATFORD: Sept. 1.—Quotations:—Magnums, 55s. to 70s.; Hebrons, 55s. to 70s.; White Elephants, 55s. to 70s.; Regents, 60s. to 70s.; Snowdrops, 70s. to 105s.; Imperators, 60s. to 70s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Aug. 29, and for the corresponding period last year.—1891. Wheat, 40s. 11d.; Barley, 27s. 7d.; Oats, 21s. 9d. 1890. Wheat, 55s. 9d.; Barley, 31s. 3d.; Oats, 19s. 2d. Difference Wheat, +4s. 4d.; Barley, -3s. 8d.; Oats, +2s. 7d.

FRUITS AND VEGETABLES.

BOROUGH: Sept. 1.—Quotations:—Cabbages, 2s. to 3s. per tally; Onions, 1s. 6d. to 2s. 6d. per dozen bunches, and 5s. per cwt.; Carrots, 1s. 6d. to 2s.; and Turnips, 1s. 6d. to 2s. per dozen bunches; Marrows, 5d. to 7d. per dozen; Peas, 2s. to 3s. per bushel, and 3s. to 4s. per bag; Scarlet Beans, 1s. 6d. to 2s.; French Beans, 1s. 6d. to 1s. 9d.; and Broad Beans, 1s. per bushel.

SPITALFIELDS: Sept. 1.—Quotations:—Cabbages, 1s. 6d. to 3s. per tally; Marrows, 9d. to 1s. 3d. per dozen; Spinach, 1s. to 1s. 6d. per bushel; French Beans, 1s. 6d. to 2s. do.; Scarlet do., 1s. 6d. to 2s. do.; do., 2s. to 3s. per sack; Peas, 2s. to 4s. 6d. per sack; Radishes, 2s. to 3s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 2s. to 2s. 6d. per cwt.; Carrots, 2s. to 2s. 6d. per dozen bunches, and 30s. to 50s. per ton; Parsley, 1s. to 2s. per dozen bunches; Horseradish, 12s. to 13s. per dozen bunches; Celery, 6d. to 1s. per bundle; Cos Lettuce, 4d. to 6d. per score; Cabbage do., 3d. to 4d. per dozen; Mustard and Cress, 1s. 6d. per dozen baskets; English Apples, 2s. to 4s. 6d. per bushel; Peas, 2s. to 2s. 6d. per half-sieve; Victoria Plums, 1s. 6d. to 2s. do.; Orleans Plums, 2s. to 3s. do.; Greengages, 3s. to 3s. 6d. do.; and 2s. to 3s. per flat; English Tomatoes, 4s. to 7s. per 12 lb.; foreign do., 1s. to 2s. per box.

STRATFORD: Sept. 1.—There has been a good supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 2s. to 3s. 6d. per tally; Cauliflowers, 1s. 6d. to 2s. 6d. per dozen; do., 7s. to 10s. per tally; Carrots, household, 10s. to 50s. per ton; Mangels, 20s. to 25s. do.; Onions, English, 80s. to 100s. do.; do., Egyptian, 100s. to 105s. per bag; do., Onions, 7s. to 8s. per cwt.; Apples, English, 1s. 6d. to 6s. per bushel; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 20s. to 40s. per ton; Carrots, 1s. 6d. to 2s. 6d. per dozen bunches; Celery, 9d. to 1s. 3d. per roll; Scarlet Beans, 1s. to 2s. per sieve; do., 2s. to 3s. 6d. per sack; French Beans, 1s. to 1s. 6d. per sieve; Plums, 1s. 6d. to 2s. 9d. per half-sieve; do., 2s. 6d. to 5s. per bushel; Greengages, 2s. to 2s. 6d. per half-sieve; do., 4s. to 5s. per bushel.

NOTICES TO CORRESPONDENTS.

ANTHURUM VEITCHI: Dresden. This plant was introduced from Colombia to the nurseries of Messrs. Veitch by Mr. Wallis. First described and figured in Gardeners' Chronicle of December 16, 1876.

ANTS IN HOUSES: Anti Ants. Either chloride of lime or carbolic acid strewn in their haunts will drive the ants away.

BEETLES IN A FRUIT-ROOM: E. W. Keating's Insect Powder dusted over the shelves is very efficacious.

CARNATION: V. Cephalotaxus Fortunei. It is very common for Carnation to sport; the phenomenon is looked upon as an unmixing of previously combined characters.

DISQUALIFICATION OF EXHIBITS: Devon. According to the wording of the schedule, which must be interpreted in a gardener's, not in a botanist's sense, both of you were wrong in exhibiting Clematis, Hydrangea, and Hypericum, amongst "Hardy Perennials."

"HARDY PERENNIAL" AND BULBOUS FLOWERS: A. We are of opinion that the judges did rightly in disqualifying a stand containing a spike of Hydrangea paniculata grandiflora.

MELONS: Subscriber. The female blossoms should be set on the morning of their opening, and not when the unfertile fruit has got to "the size of a Filbert." Having so many as 200 plants, you ought to take every care to get an early set, as the fruits will be no value if they do not ripen before the end of October.

MELONS ON GALVANISED IRON BOTTOM: Gardener. It is not an uncommon experience to find vegetation injured by contact with the zinc deposited on the iron. Whether it is the zinc, or the remains of the muriatic acid, the metal receives before it leaves the workshop, that causes the injury is not known. Possibly a coat of boiled gas-tar would prevent injury in the future. Melons are not injured by tar.

NAMES OF FRUIT: A. H. 1, Malx Codlin; 2, New Hawthornden.—W. C. I, Summer Franc Real; 2, Windsor, syn. Green Windsor.—J. H. B. Pershore Plum.

NAMES OF PLANTS: Miss F. Epipactis latifolia.—E. W. G. Lysimachia clethroides, Pyrethrum uliginosum.—G. P. Campanula rapunculoides.—L. G. 1, Ooecidium micropogon; 2, Galeandra nivalis.—J. B. K. A dark variety of Aristolochia elegans.—A. B. I, Monarda didyma; 2, Caulocalis Anthiscus; 3, Salvia verticillata; 4, Fagopyrum esculentum.—F. E. I, Rudbeckia laciniata; 2, R. occidentalis; 3, Helianthus rigidus var.; 4, Rudbeckia speciosa; 5, Helianthus rigidus (type); 6, H. multiflorus fl.-pl.; 7, Chrysanthemum uliginosum; 8, C.

lacustre.—*W. W.* *Alocasia illuaria*; *Cassia corymbosa*.—*W. M.* *Scrophularia aquatica*.—*G. W.* *Saponaria officinalis*. *Begonias* next week.

NECTARINE WOOD DISEASED: *J. B.* The wood has been taken possession of by the mycelium or spawn of some fungus, which originated probably on decayed wood in the soil. This had gained entrance by means of a wound or decayed part of root or stem, and spread between the bark and the wood. Cut away and burn all parts that show signs of being attacked by the fungus.

PEACHES FALLING OFF: *A Subscriber*. Possibly drying of the soil about the roots may be the cause.

POST ON A TEA PLANTATION: *W. W.* Advertise in this Journal, or in the Indian papers.

TOMATO FUNGUS: *M. W.* Both specimens are some forms of the same disease. Try Tait's Anti-Blight Powder.

VINES, TO START IN NOVEMBER, &c.: *H. W. P.* It would be better practice to partially prune the Vines as soon as the foliage is mature, say, at the end of this month, leaving the current season's shoots about 6 inches long, and doing the final thinning a month afterwards. There is no list published of fruit-growers; but one of florists is given in the *Garden Annual*, published at the *Garden* office.

WILSON JUNIOR BLACKBERRY: *R. S. & Co.* The branch sent was well fruited. We are aware that it succeeds in many parts of this country, and fails as do most of the American varieties in others. The southern parts of England seem to suit them best.

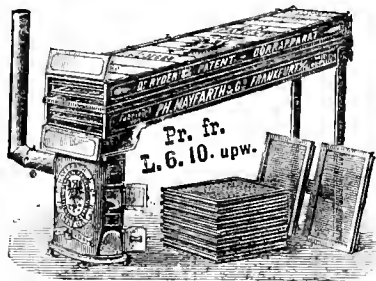
CATALOGUES RECEIVED.

- J. BACKHOUSE & SON*, York—Alpine Plants, Hardy Perennials, and Florist's Flowers.
E. H. KRELAGE & SON, Haarlem—Dutch Bulbs.
A. ROBINSON, Leadenhall Street, London—Dutch Bulbs.
FISHER, SON & SIBRAY, Handsworth Nurseries, Sheffield—Garden Tools, also Bulbs.
G. BUNYARD & Co., The Old Nurseries, Maidstone, Kent—Strawberries.
CLARK BROTHERS & Co., 65, Scotch Street, Carlisle—Spring Flower Roots.
ANDERSON & Co., Pitt Street, Sydney, N.S.W.—Australian Tree Seeds, Flowers, and Vegetable Seeds.
CLIHAN & SON, Market Street, Manchester—Bulbs.
JOHN LAING & SONS, Forest Hill, London—*Begonias*, *Roses*, *Bulbous Roots*, &c.
J. R. RHYNE, 83, St. Vincent St., Glasgow—Dutch Bulbs.
DICKSONS, Chester—Dutch Bulbs, *Narcissus*, &c.
THOMAS DAVIES & Co., Wavertree Nursery, Liverpool, *Hyacinths*, *Tulips*, &c.
W. F. GUNN & Co., Stockton Road, Sunderland—Bulbs.
OAKENHEAD & Co., 86, Patrick Street, Cork—Dutch and Cape Bulbs.
W. P. LAIRD & SINCLAIR, Dundee—Bulbs.
H. C. HARTEVELT, Lisse, Haarlem, Holland—Dutch Flower Roots.
LOUIS DE SMET, Ledeborg-lez-Gand, Belgium—*Azaleas*, *Palms*, &c.
WILLIAM FELL & Co., Hexham—Dutch Roots and Herbaceous Plants.
R. NEAL, Trinity Road, Wandsworth, S.W.—Dutch and Cape Bulbs, &c.
J. C. WHEELER & SON, Gloucester—Flower Roots.
JOHN JEFFERIES & SON, Cirencester—Select Bulbs.
ROBERT VEITCH & SON, 54, High Street, Exeter—Dutch and other Bulbs.
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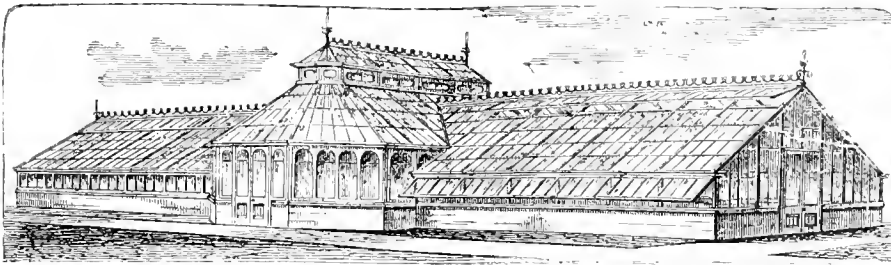
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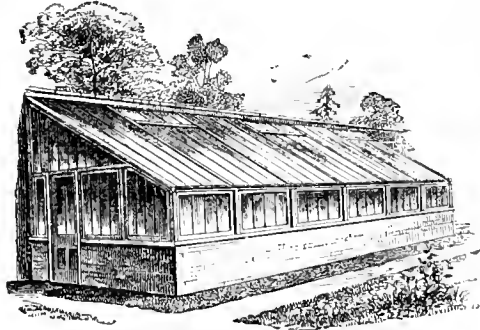
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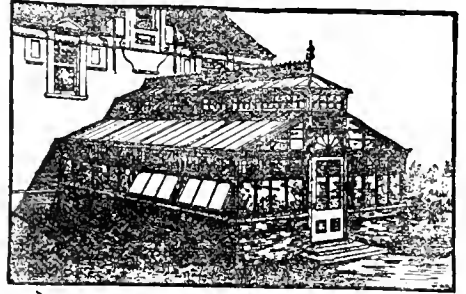
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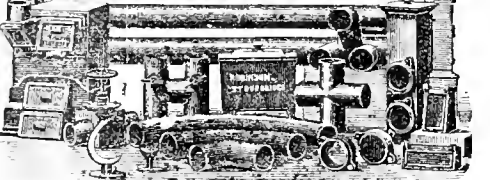
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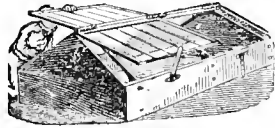
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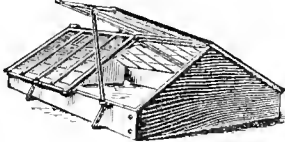
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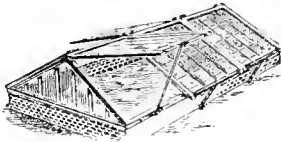
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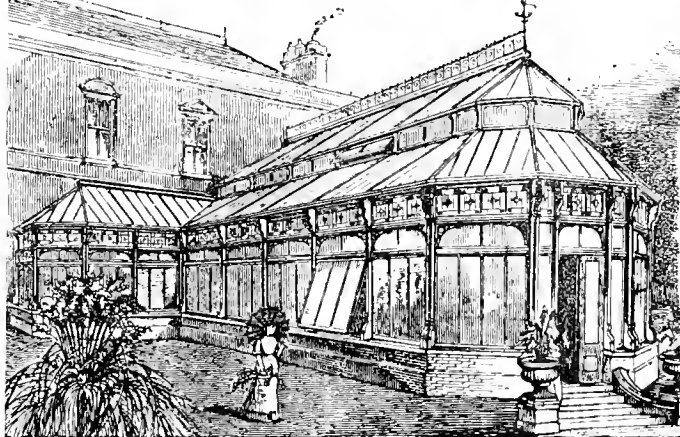
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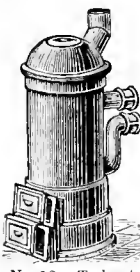


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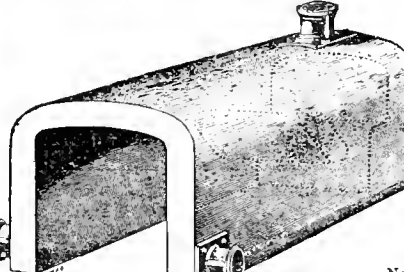
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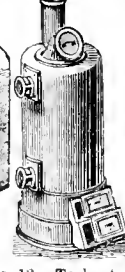
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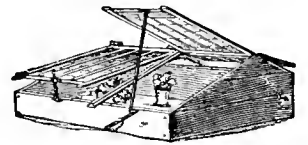


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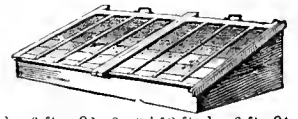
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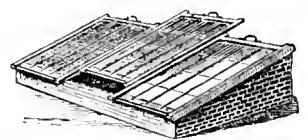


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BERLIN LILY OF THE VALLEY for Forcing, best quality only. First importation of half a million in November. Price 35s. per 1000, 4s. per 100. Order early of—
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FERNS! FERNS!! FERNS!!!—Trade. In 25 most saleable kinds, at 12s. per 100. Large Adiantum cuneatum, fine tops, in 5-inch pots, 50s. per 100. Large Ferns, in variety, 45s. per 100, in 48s. Extra large Araba Sieboldii, in 48-pots, 6s. per dozen, 45s. per 100. Packed free. Cash with Order. J. SMITH, The London Fern Nurseries, Loughboro' Junction, S.W.

To those about to Plant.
A DESCRIPTIVE CATALOGUE of Roses, Fruit Trees, Conifers, Evergreen and Flowering Shrubs, Rhododendrons, Ornamental and Forest Trees, Clematis, and other Climbing Plants, in large variety, sent free on application to—
 GEO. JACKMAN AND SON, Woking Nursery, Woking. Established 1810. Area, 150 Acres.

VISITORS TO THE CONTINENT are cordially invited to visit the Establishment of L'HORTICULTURE INTERNATIONALE; Directors, Messrs. J. LINDEN and LUCIEN LINDEN, Leopold Park, Brussels. This grand Establishment contains the FINEST and LARGEST STOCK OF ORCHIDS and NEW PLANTS in Europe. Large Conservatories, &c. English CATALOGUE sent gratis.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers.

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Dutch Bulbs.—Great Unreserved Sales, EVERY MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., FIVE DAYS WEEKLY, as above, at half-past 11 o'clock each day, LARGE consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from HOLLAND. Lotted to suit the Trade and Private Buyers. On view morning of Sale, and Catalogues had.

GREAT ANNUAL TRADE SALES. NEXT WEEK.

MESSRS. PROTHEROE AND MORRIS respectfully announce that their GREAT ANNUAL SALES take place NEXT WEEK, from MONDAY, the 14th, until FRIDAY, the 18th inclusive, as stated in the following Advertisements.

Catalogues have been posted to all customers, and any intending purchaser not having received a copy, is requested to apply immediately, when one will be sent. Auction Rooms and Estate Offices, 67 and 68, Cheapside, E.C.

Upper Edmonton.

The Dyson's Lane Nurseries, about five minutes' walk from Angel Road, and eight minutes from Silver Street Station on the G. E. R.

SIXTH GREAT ANNUAL TRADE SALE of about 61,000 GREENHOUSE and other PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. E. May to SELL by AUCTION, on the Premises as above, on MONDAY NEXT, September 14, at 11 o'clock, punctually, owing to the large number of lots, about

60,000 STOVE and GREENHOUSE PLANTS, exceptionally well grown, and in the best possible condition, the principal items comprising—

- 19,000 Tree Carnations, including Mrs. Moore, Duke of Fife, Floran, Winter Cheer, Mrs. Reynolds Hole, and many other first-class varieties.
2,000 Tea Roses in pots, extra strong, amongst them Maréchal Niel, Gloire de Dijon, W. A. Richardson, and others, with well ripened growths, 12 to 15 cent long.
Ficus elastica variegata, Cereolias, English grown in splendid lots, well set.
Lapageria alba.

May be viewed any day prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Lee, Kent, S.E.

GREAT ANNUAL SALE of WINTER BLOOMING HEATHS and other PLANTS—the stock this season being unusually well-grown and in splendid condition—to commence punctually at 11 o'clock, there being upwards of 1300 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Muller & Sons to SELL by AUCTION, on the Premises, the Barn Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, S.E.K., on THURSDAY NEXT, September 15, without reserve, a grand collection of remarkably well-grown

WINTER-BLOOMING HEATHS and STOVE and GREENHOUSE PLANTS, comprising:—

- 20,000 Erica hyemalis
5,000 " gracilis
2,000 " Cavendishii
1,000 " cocinea minor
600 " ciffra
All the Ericas being unusually well set with flower.
5,000 Gemstas
4,500 Solanums, well-berried
1,500 Eperias to name
2,000 Bouvardias of sorts

And a large quantity of young Erica hyemalis, Cavendishii, gracilis, and others; also Gemstas and Eperias, all in 60-pots for growing on.

The Stock may now be viewed. Catalogues obtained on the Premises; at the seed Warehouse, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Derby.—The Mile Ash Nurseries.

CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, 600 CAMELLIAS, including many specimens, large PALMS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, September 29 and 30, the whole of the GREENHOUSE and STOVE PLANTS.

The outdoor NURSERY STOCK will be sold in October. Auction and Estate Offices, 67 and 68, Cheapside, E.C.

The Collection of Established Orchids formed by the late H. J. Burchard, Esq., of Wilton House, Southampton. By order of the Executors.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL the above by AUCTION, at their Rooms on FRIDAY, September 25.

Lea Bridge Road, E. ANNUAL UNRESERVED SALE of fine WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY NEXT, September 15, at 11 o'clock precisely, in consequence of the large number of lots, a large quantity of—

WINTER-FLOWERING AND OTHER PLANTS, including:—

- 20,000 Erica hyemalis
1,000 Tree Carnations
4,000 Erica gracilis
6,000 Genista fragrans
6,000 Ampelopsis Veitchii, 4 feet
1,000 Eperias
2,000 Lapageria rosea superba
6,000 Cyclamen persicum (Fraser's superb strain)
2,000 Passiflora Constance Elliott and corulea
10,000 Clerodendron Jackmannii and other best named sorts
1,000 Dentaria gracilis, established in pots for earliest forcing
2,000 Variegated and other Ivies
24,000 Mirebal Niel, (Gloire de Dijon, 8 to 10 ft.; Niphotos, L'Éclair, and other Tea-scented and Noisette Roses in great variety
6,000 Bouvardias, including a lot of "President Cleveland"
5,000 Solanums, beautifully berried
1,000 Ivy-leaved Geraniums, best double kinds
1,000 Early flowering and other Chrysanthemums, fine strong stuff
500 Grevillea robusta

And a great number of Erica ventricosa, Cavendishii, caffra, large-flowering white Jasmines, Stephanotis floribunda, Boronia megastigma, Escallonia micrantha, Japanese Honey-suckles, Camellias, Aralia Sieboldii, Abutilons, Plumbagos, Lapageria alba, Ingonomas, Magdalias, of sorts; Figs, strong, in variety; India-rubber plants, Palms, Ferns, Ficus elastica variegata, and other plants. Also a large quantity of young Heath and Genistas, for potting on.

The whole of the Stock is in the best condition, and ready for immediate sale.

Hoe Street Station, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G.E.R. TWENTY-THIRD ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

The Sale to commence punctually at 11 o'clock, there being upwards of 1300 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Mallier to SELL by AUCTION, on the premises as above, on THURSDAY NEXT, SEPTEMBER 17, 1891, without reserve, upwards of 1300 lots of remarkably well-grown

STOVE and GREENHOUSE PLANTS, mostly in 18-pots, and fit for immediate Sale, consisting of:—

- 15,000 winter-blooming Heaths, the best lot offered at this Nursery for many years, including hyemalis, gracilis, Cavendishii, ventricosa, in variety, &c.
3,000 Tree and other Carnations, leading varieties, including Mrs. Moore, Duke of Fife, Duke of Clarence, Winter Cheer, Germania, &c.
5,000 Bouvardias, best vars.
2,000 Grevillea robusta
5,000 Gemstas
500 Double White Primulas
Chrysanthemums, new varieties, including Louis-Rocher
500 Ferns, Adiantums, Lomarias, Pteris, &c.
500 Euphorbia japonica-flora
1,000 Stove and Greenhouse Climbers, including Biphenanthias of sorts, Allamandas, Bouganvilleas, Stephanotis, Faxonias, &c.
1,000 Passifloras
1,000 Ampelopsis Veitchii
500 Crotosus, beautifully coloured.
Large Azaleas for cut az. Palms, Ferns

Also quantities of Eperias to name, Callas, Poinsettias, Golden Euonymus, Gardenias, Geraniums, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the premises; at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the Stock is in first-rate condition. The Ericas and Solanums are unquestionably the finest lot offered at this Nursery for many years. The Ericas being especially well set for flower, and the Solanums unusually well-berried.

East Grinstead.—Without Reserve.

SALE POSTPONED until FRIDAY, September 15, in order that it may follow the great Annual Trade Auctions.

IMPORTANT to the TRADE and PRIVATE BUYERS. SECOND ANNUAL SALE of WELL-GROWN STOVE and GREENHOUSE PLANTS, fit for immediate sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Roberts Bros., to SELL by AUCTION, on the premises, the Moat Nursery, East Grinstead, close to the Railway Station, on FRIDAY NEXT, September 15, at half-past 11 o'clock precisely, the following unusually well-grown stock:—

- 2,000 Roses in pots
5,000 Bouvardias
800 Azaleas
2500 Palms, in variety
150 Specimen Eucharis, grand plants
10 Half-specimen Eucharis
1500 Double White Primulas
2000 Adiantum cucuatum
Cyclamen, Begonias, Callas, Gardenias, 2000 Lilium Harrisii and 2000 L. candidum (bulbs), &c.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Acton, W.—In Bankruptcy, re John Reeves. ABSOLUTE CLEARANCE SALE without the SLIGHTEST RESERVE.

By Order of the Trustee. Four days Sale. IMPORTANT to the TRADE and CUT FLOWER GROWERS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nurseries, Acton, W. (adjoining the Recreation Ground, and close to either of the Acton Railway Stations), on MONDAY, September 21, and THREE FOLLOWING DAYS, at 12 o'clock precisely each day, absolutely without reserve, the extensive stock of STOVE and GREENHOUSE PLANTS, grown principally for Market purposes and Cut Flowers, comprising:—

- 100,000 FERNS, consisting of ADIANTUMS in great variety, and many other species.
4,600 Eucharis (large plants)
Asparagus tenuissimus and plumosus (a large stock)
3,000 Carnations, Miss Joliffe (splendid plants)
8,000 do., in store pots
300 Azaleas, Fielder's White (specimen plants, well-set)
The entire stock of the new pink Polargium, Ethel
Also the ERECTIONS of 30 GREENHOUSES, 12,000 feet of Hot-water PIPING, mostly 4-inch.
Fourteen BOLLERS, Slate Staging, Lights, Pits, Brick-work, Two Spring Market VANS, Bay HORSE, Harness, and sundries.

May be viewed two days prior to the Sale. Catalogues had on the Premises, of T. P. CHILD, Esq. (the Trustee), Accountant, 42, Poultry, E.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Sutton, Surrey.

IMPORTANT UNRESERVED SALE of the valuable COLLECTION of STOVE and GREENHOUSE PLANTS, ORCHIDS, &c., which are well known at the local Shows, by order of S. Fzekiel, Esq., who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the premises, The Gardens, Camden House, Sutton, Surrey, ten minutes' walk from the Sutton Railway Station, on THURSDAY, September 21, at 12 o'clock precisely, the valuable collection of exceedingly well-grown STOVE and GREENHOUSE PLANTS, comprising about 500 lots, and consisting of specimen and half specimen Geraniums of the best kinds, trained Cereus, Selaginella, Anthuriums, several fine specimen plants for exhibition, two splendid plants of Lapageria rosea and alba, specimen and half-specimen Ferns, large Palms, Cycas revoluta with thirty leaves, Asparagus Ficus, Davallia Mooreana, 5 feet through, well coloured Crotosus, choice named double and single Begonias, seedling Begonias and Gloxinias, Eucharis, splendidly-trained exhibition Fuchsias, all named, grand specimen Azaleas, large Camellias, Chrysanthemums of the best varieties, and a large Collection of well-grown established Orchids, including Cattleya trianae alba, Cologne cristata alba, Laelia anceps alba, Cattleya Skinneri oculata, Laelia elegans, Cymbidium Lowii, and many other species.

The Auctioneers desire to call special attention to this important Sale, particularly to the ORCHIDS, which include numerous fine varieties, the greater portion of them having been purchased when in flower.

May be viewed. Catalogues may be had of Mr. COOK, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The valuable FREEHOLD ESTATE, and the superior Residence, Outbuildings, and extensive Grounds of about 8 Acres, is for Sale by Private Treaty. Apply to the Auctioneers.

Southgate.

By order of Mr. W. Davies. About a mile from Oakleigh Park Station, G. N. Railway. IMPORTANT to FRUIT and PLANT GROWERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, September 25, at 2 o'clock, in one lot, a compact and valuable FREEHOLD MARKET NURSERY, known as the Oak House Nursery, Enfield Road, Southgate, comprising an area of nearly 2 Acres, with brick-built Dwelling-house, 9 Greenhouses and Vineries, 14 brick Pits, Stabling, and suitable Buildings.

The Property possesses a commanding Frontage to the High Road, which can be utilised for Building. Possession will be given on completion of the purchase.

May be viewed. Particulars had on the Premises; at the Mart, E.C.; of W. F. WATSON, Esq., Solicitor, 43, Southampton Buildings, Chancery Lane, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, E.C.

Hammersmith.—Absolutely without Reserve. SALE of the BENEFICIAL INTEREST in the LEASE and STOCK in TRADE of a well-established CUT-FLOWER and FLORIST BUSINESS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Peacock Nurseries, Hammersmith, on MONDAY, September 28 (instead of September 25, as advertised last week), at 12 o'clock, unless previously disposed of by private contract, the BENEFICIAL INTEREST in the LEASE.

Immediately following the Sale of the Lease, the whole of the STOVE and GREENHOUSE PLANTS and other STOCK, also the UTENSILS in TRADE, will be SOLD by AUCTION in suitable lots.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Friday Next.

THE TRUE OLD AUTUMN-FLOWERING CATTLEYA LABIATA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to sell by auction at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 18, at half-past 12 o'clock, a magnificent importation of the TRUE OLD AUTUMN-FLOWERING CATTLEYA LABIATA.

The whole importation is offered, and the plants are in magnificent order and condition, from 4 to 6 flower buds can be seen on the old spikes, many of which are of enormous size and thickness.

ALL THE PLANTS ARE GUARANTEED TRUE.

The genus Cattleya was founded upon the species we now offer. Dr. Lindley first described it from Swainson's plant introduced in the year 1818, and named it in honour of W. Cattley, Esq., of Barnet. This plant now re-discovered and re-introduced is absolutely the CATTLEYA LABIATA AUTUMNALIS VERA from Swainson's original hunting ground, and to the indefatigable enterprise and persistent zeal of Mr. F. Sander are we indebted for this greatest desiderata of Orchidists.

There will also be included in the above sale a NEW AND UNDESCRIBED SPECIES OF CATTLEYA, also a new STANHOPEA.

A very fine lot of the rare and beautiful

ANSELLIA AFRICANA NILOTICA

the finest of the genus, the colours being brighter and more distinctly defined than the type.

CYPRIPEDIUM INSIGNE SIAMENSE.
ODONTOGLOSSUM HASTIATUM, in fine masses.
ONCIDIUM PAPILLI MAJUS.
CYMBIDIUM EBURNUM.
CYPRIPEDIUM BOXALII and VENESTUM.

Also some choice and valuable Established Orchids, amongst which will be found:—

DENDROBIUM LEECHIANUM, strong plants.
" NOBILE SANDERIANUM,
" COCKSONII,
" HYBRIDUM VENUS.
" CASSEPOE.

LILIA ANCEPS WHITE.

" GOULDIANA.
SPATHOGLOTTIS KIMBALLIANA.
SCHOMBURGKIA SANDERIANA, new.
VANDA SANDERIANA.
CERIOGYNE SANDERIANA.

" DAYANA, and many other choice Varieties.
On view morning of sale and catalogues had.

Bagshot.

HIGHLY IMPORTANT THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, which has been carefully prepared for removal, and specially selected for this Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, close to Bagshot Station, on WEDNESDAY, September 30, and two following days, at 12 o'clock each day, without reserve, several acres of NURSERY STOCK, grown to the greatest perfection, and exceedingly well-rooted, comprising a variety of Conifers, splendid specimens, 4 to 7 ft., particularly adapted for effective planting; well-coloured Golden Retinosporas; very fine specimen Gold and Silver Variegated Hollies, 4 to 6 ft.; fine-grown examples of Waterer's Holly; Standards and Pyramis fine single specimens; 1000 Green Hollies, 3 to 5 ft.; very fine English Yews, 2½ to 3 ft.; 200 named Rhododendrons, 2 to 2½ ft., bushy plants of the best and newest kinds; Ponticum Rhododendrons in quantity; 3000 Spruce Firs, 2½ to 4 ft., and a quantity of larger plants adapted for Christmas Trees; 5000 Standard Ornamental Trees, 8 to 12 ft.; Purple Beech and Limes, 10 to 12 ft.; thousands of Flowering Shrubs; and other stock.

Purchasers will be allowed until December 31, 1891, for the removal of their lots.

May now be viewed. Catalogues can be obtained on the Premises, or on application to the Auctioneers, 67 and 68, Cheapside, E.C.

The Chilwell Nurseries, Chilwell, Notts.

Three-quarters of a mile from Boston Railway Station, Midland Railway.

IMPORTANT SALE of EVERGREENS, CONIFERÆ, &c., growing upon two branch nurseries which are required for building purposes by order of Messrs. J. R. Pearson & Sons.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises as above on THURSDAY, October 1st, at 1 o'clock precisely, 1,000 specimen GOLDEN YEWs, a fine collection of Green and Variegated HOLLIES, 900 Bushy AUCUBAS, specimen and half-specimen RHODODENDRONS, of the finest named varieties, thousands of SMALL SHRUBS for potting or growing on, 300 YUCCA FILAMENTA VARIEGATA, the largest number of this scarce plant ever offered, 4,000 LAURELS of sorts, 1,200 CUPRESSUS, including 400 C. ARGENTEA, perfect specimen Standard and Dwarf ROSES, STANDARD THORNs and other Stock.

This Sale is especially worthy of attention owing to the high-class character of the Stock, all of which has been recently transplanted and grown with plenty of room.

The Golden Yews and Yuccas, for which the Nurseries have long been famous, are the finest lot ever offered by Public Auction.

May be viewed one week prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers, Cheapside.

En eld, Middlesex

FIRST ANNUAL SALE of well-grown STOVE and GREEN-HOUSE PLANTS, by order of Mr. G. Blundell.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Ridgway Oaks, Enfield, on THURSDAY, Sept. 24, at 1 o'clock, 300 Tea and H. P. ROSES in pots, 200 LILIUM HARRISII in bud, 250 LILLIUMs of sorts, 8000 FREGESIA REFRACTA ALBA in pots, 2,000 GLADIOLUS, The Bride, FERNS, STEPHANOTIS, VIOLETS, COMTE BRAZZA, CARNATIONS, CALLAS, BOUVARDIAS, 400 CHRYSANTHEMUMS, BEGONIAS, and other STOCK.

May be viewed three days prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Sunningdale.—Preliminary Notice.

WITHOUT RESERVE.—SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. Charles Noble.

MESSRS. PROTHEROE AND MORRIS beg to give notice that this ANNUAL SALE is fixed for MONDAY, October 5, and five following days.

Further particulars will appear in future advertisements. The Stock may now be viewed, and catalogues had, when ready, on the Premises, and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

DUTCH BULBS. DUTCH BULBS.

SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

In Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half-past 12 o'clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving Weekly from well-known Farms in Holland. On view mornings of sale and catalogues had.

Thursday next.

ESTABLISHED AND IMPORTED ORCHIDS, DUTCH BULBS, LILIUMS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 17th, at half-past 12 o'clock precisely. COLLECTION of ORCHIDS in FLOWER and BUD, including many rarities, and a quantity of IMPORTED ORCHIDS received direct, 5000 g and bulbs of Liliium Harrisii and Liliium Candidum (The Bride), &c. Also a large consignment of BULBS from HOLLAND, just received in splendid condition and specially sorted to suit all buyers.

On view morning of Sale, and Catalogues had.

Preliminary Notice.—Early in October. WITHOUT RESERVE.

FIVE DAYS' absolute CLEARANCE SALE of Several Acres of beautifully-grown and thriving young NURSERY STOCK, consisting of 200,000 Rhododendrons, in variety; very large quantity of Fancy Hollies and leading Evergreens; Conifers, and Ornamental, Forest and other Trees. Large quantity of Strong Thorn Quick; also large quantity of Forest and other Trees, for Woods and Covert Plantations.

Further particulars will appear in future advertisements. The Stock may now be viewed, and Catalogues had, when ready, on application to ISAAC MATTHEWS and SON, The Nurseries, Milton, Stoke-on-Trent.

WANTED to RENT, a small NURSERY, 6 Greenhouses, and half an acre of Land. Must be doing a good business. State full particulars. Price must be low.—A. W. *Gardeners' Chronicle Office*, 41, Wellington Street, Strand, W.C.

TO LET, LARGE GARDEN, with VINERIES, &c.

The Garden at Mable, within about 4 miles of the town of Dumfriesshire, with Cottage and small Field, are TO LET for such period as may be agreed on, with entry at Martinmas first. The Garden and field extend to about 3 acres each. The Glass-houses are extensive, and consist of two Vineries, two Peach-houses, two Melon-houses, large Conservatory, and long Corridor; and the Garden is well stocked with Fruit Trees and Bashes.

The Gardener, Mr. William McMinn, will show the Premises, and further particulars may be learned from Messrs. WALKER and SHARPE, Writers, Maxwelltown, Dumfriesshire, who will receive offers till FRIDAY, the 25th September current. Maxwelltown, September 8, 1891.

TO LET, on Lease, or otherwise, a SMALL NURSERY, in good neighbourhood, 10 miles from London. South-Eastern Loop Line. Apply, C. B., *Gardeners' Chronicle Office*, 41, Wellington Street, Strand, W.C.

FOR SALE, OR LET, a FREEHOLD. About 3 acres of this old-established Nursery, in good position, between Weybridge and Chertsey, Surrey. A good opening for an energetic man. Ten minutes walk from Chertsey or Addlestone station, South-Western Railway; in a rapidly increasing neighbourhood. For particulars, enquire of—W. DALE, Knockholt, Kent.

EXETER.—In a splendid situation. A genuine FLORIST'S and FRUITERER'S BUSINESS, doing a good cash trade, which might readily be much increased. Rent of Shop, Show-Room, and Sitting ditto, £40 per annum. Price for Goodwill, Fixtures, Fittings, Stock, &c., £75. A capital business for two Ladies, or anyone desiring to acquire a lucrative concern. Apply to THOMPSON, RIPLEY and CO., Business Brokers, 22, Gandy Street, Exeter.

FOR IMMEDIATE DISPOSAL. Six miles from Bristol Market, one mile from a railway station, an Excellent MARKET GARDEN, about 7 acres in extent, comprising Dwelling House, three New Greenhouses, 91 feet long; one useful pit, 32 feet long; and a number of Frames, well stocked with flowering Plants, Ferns, Tomatos, Cucumbers, &c.; 3 acres Fruit Trees, Strawberries, Vegetables, &c.; 4 acres Grass Land, which could be broken up. Lease, 7, 14, or 21 years. Lease, Greenhouses, Stock, &c., to be sold at a fair valuation, payable by easy instalments if desired. Inspection invited. Apply, the MANAGER, 32, Nicholas Street, Bristol.

TO BE SOLD, a bargain (through a death).

The LEASE of a capital MARKET NURSERY, 8 miles from Covent Garden, with eleven good Glass-houses, all exceptionally well heated; also 200 good Pit-lights and fixtures. Capital Stabling and Dwelling-house with every convenience. Rent only £25 per annum, price low to an immediate purchaser. Apply to J. S., 2, Elm Villa, Town Road, Lower Edmonton.

EXHIBITIONS.

CRYSTAL PALACE. GREAT AUTUMN EXHIBITION OF FRUIT.

OCTOBER 8 to 10. ENTRIES CLOSE OCTOBER 1. Schedules and Entry Forms post-free, on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

LEICESTER and MIDLAND CHRYSANTHEMUM SOCIETY.

The FIFTH ANNUAL SHOW will take place on NOVEMBER 13 and 14, 1891, in the Temperance Hall, Leicester. Good Prizes offered in Open Classes. For Schedules and Particulars, apply—

WM. BELL, Knighton Road, Hou. Sec.

Landscape Gardening.

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The Gardens, Lewiston House, Sherborne, Dorset. August 31, 1891.

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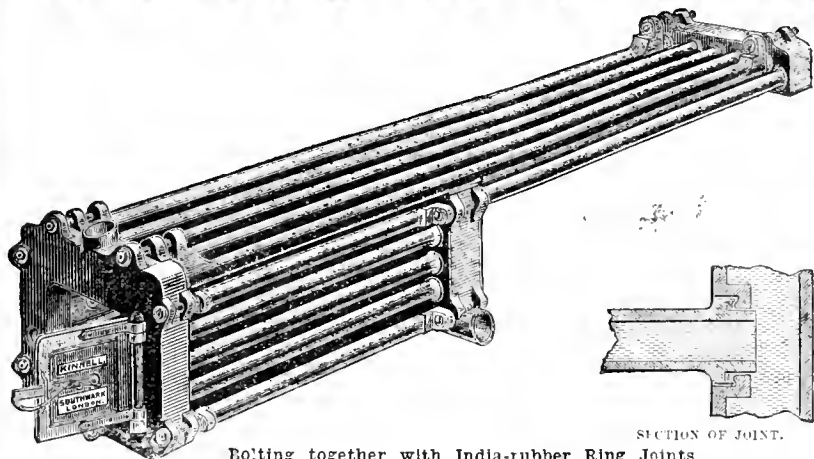
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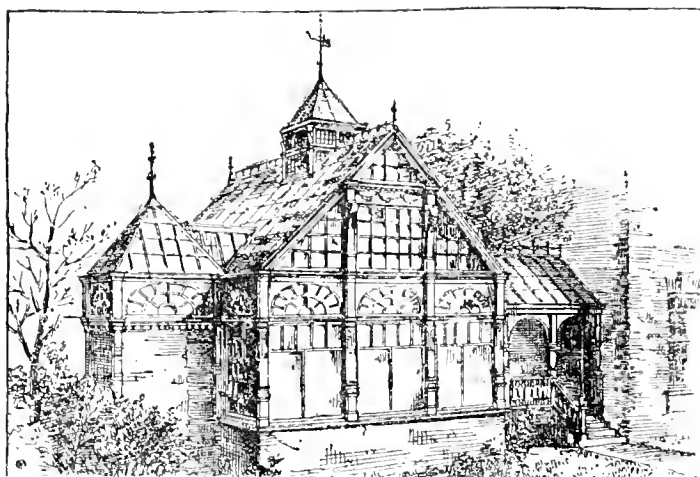
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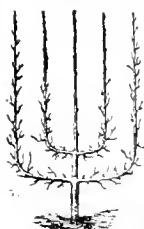
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NOTICE.

In the issue for SEPTEMBER 5 will be found Notes on the GARDENING ESTABLISHMENTS IN AND ABOUT

EDINBURGH,

VIEWS OF DALKEITH AND NEWBATTLE, and a PORTRAIT OF PROFESSOR BALFOUR.

For OTHER PORTRAITS, see the Supplementary Sheet, given with the Present Number.

THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 12, 1891.

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

[SEE SUPPLEMENTARY SHEET.]

THIS society, on which the attention of horticulturists in all parts of the kingdom is for the time concentrated, was founded in 1809, and incorporated by charter in 1824. Its objects were very similar to those of the Royal Horticultural Society, instituted about the same time. The society maintained a garden for several years, but finding the cost too onerous, after a period of much difficulty, the garden was annexed to the Royal Botanic Garden, and is now utilised as an arboretum. The first president was the Duke of Gordon, and he was succeeded by Sir James Hall, a celebrated horticulturist, two Dukes of Buccleugh, and the Earl of Dunmore; the present President being the Marquis of Lothian, K.T. The first secretary was Mr. Patrick (afterwards Dr. Neil), an enthusiastic promoter of horticulture. Professor Balfour succeeded Dr. Neil, to be followed by Mr. John Stewart, whose son, Mr. Charles Stewart, now fills the office, with Mr. William Young as assistant secretary; whilst the present treasurer is P. Neill Fraser, Esq., an ardent and talented horticulturist. In its long career the society has attracted to it the best-known Scottish horticulturists and botanists, and the names of MacNab, Anderson-Henry, Gorrie, and Sadler, not to mention many others, have cast a lustre on the society, which in its present enterprise, is out-doing all its previous efforts.

In a Supplementary Sheet we give portraits of some of the leading members of the Council, including the following:—

THE MARQUIS OF LOTHIAN, K.T., Secretary of State for Scotland—a most liberal patron of arts and sciences. Horticulture, agriculture, and forestry are especial subjects of interest to him. The excellent management and prosperous condition of the fine estates of Newbattle Abbey, in Midlothian, and Mont Teviot, in Roxburghshire, the popularity of Lord Lothian with his tenants on these estates, the splendid gardens and thrifty woodlands, all testify to his active personal interest in domestic affairs; and as President of the Arboricultural Society during the year that society held its forestry exhibition in Edinburgh, and as President of the Highland and Agricultural Society, he extended the same active sympathy to public movements for the furtherance of the objects aimed at by these bodies. As President of the Caledonian, he lends lustre to that ancient Society; and by the monograph of Masdevallias published under his auspices, and illustrated by plants from his own collection at Newbattle, he contributes to the progress of scientific botany.

MR. WILLIAM YOUNG, Assistant-Secretary to the Royal Caledonian Horticultural Society, is an amateur gardener of more than local fame. Reared in the town of Haddington, the centre of East Lothian gardening in the earlier decades of the century, he

carried with him to Edinburgh, where he eventually settled, his taste for florists' flowers, particularly Auriculas, in the culture and breeding of which he is a specialist. His knowledge of florists' flowers, and his aptitude for managing flower shows, quickly brought him into notice with all interested in gardening progress. For the past fifty years he has been a foremost figure in horticultural movements. He was fifteen years treasurer to the Scottish Pansy Society, for seven years he was Secretary to the Scottish Gardeners' Society, and for thirty years he has acted as Assistant-Secretary to the Royal Caledonian Horticultural Society—twenty years of that time *con amore*, and without salary or any pecuniary benefit whatever. In short, he is an enthusiast, whose enthusiasm increasing years in no way lessens.

MR. MALCOLM DUNN, whose name is a household word with horticulturists, both in the north and the south, is, however, best known in connection with The Gardens, Dalkeith Park, which he has managed so well during the last twenty years. Formerly, at Powerscourt, Ireland, he distinguished himself by the masterly way in which he tackled the Phylloxera and stamped it out, giving courage to Grape growers generally when panic threatened them all round. His attainments as a pomologist are widely known, and his energetic aid to and advocacy of every movement having the advancement of horticulture as its object, are warmly appreciated by every horticulturist north of the Tweed.

MR. ROBERT LINDSAY, Curator of Botanic Garden, Edinburgh, in his earlier years was some time under the late Mr. Thomas Moore in the Chelsea Botanic Garden; subsequently, he served for a number of years under the late Mr. James MacNab in the celebrated garden of which he is now curator. He was appointed to the charge in 1883. Throughout his career he has exhibited the rare combination of scientific bias and practical application in his profession. His achievements as a hybridist, particularly of *Nepenthes*, are a credit to himself and to the establishment with which he is connected, and his appointment to the presidential chair of the Botanical Society of Edinburgh, which he has held for two successive sessions, is but a just recognition of his high attainments in botanical and horticultural science.

MR. ANGUS A. McLEOD, Superintendent of the City Gardens, Edinburgh, in his earlier years acquired his experience at Burghley Park, Mitton, Wentworth, and the Royal Exotic Nurseries, Chelsea. Subsequently he served the Marquess of Lothian as head gardener at Newbattle Abbey, Midlothian, for nineteen years. He was appointed to the charge of the City Gardens in 1875. During the past twenty-seven years he has borne an active part in the management of the Royal Caledonian Horticultural Society, and for his services to the society and to horticulture generally was awarded the Neill Prize and Medal in 1890.

MR. JOHN DOWNIE, one of the fathers of the Scotch nursery trade, served his apprenticeship as a gardener at Canaan House, Edinburgh. At the early age of twenty years, at the death of his father, he was called upon to fill his place as head gardener at South Bank, Edinburgh; and where he remained ten years. At that place he was able to take a high position at the local shows, his exhibits, especially florists' flowers, being of great excellence. In 1848 he associated himself with Mr. R. B. Laird, thus establishing the firm of Downie & Laird, which obtained a world-wide celebrity in connection with the improvement of all classes of florists' flowers. Retiring from the firm of Downie & Laird in 1883, he has since been trading in his own name. During a long career Mr. Downie has had many triumphs, but space will only admit of our particularising one. He was the originator of the now popular race of "fancy" Pansies. About 1858, at a flower shower show in London, he exhibited thirty blooms in six varieties, the progeny of one named Dandie Dinmont. These were the first fancy Pansies ever exhibited, and they were commented upon in the *Times* of the

date as follows:—"Messrs. Downie & Laird of Edinburgh, exhibit some strange looking Pansies, striped and splashed in the most extraordinary manner." Mr. Downie has been an ardent supporter of every movement for the improvement of gardening and gardeners throughout his long and successful career. Among other working members of the Society are Messrs. Milne, Thomson, Clapperton, MacKinnon, D. P. Laird, Metbven, Moncur, Welsh, Stewart, Cowan, and Neill-Fraser, all eminent Scotch horticulturists.

MR. R. B. LAIRD. — We take the following details from *The Piper o' Dundee*, which also contains a pleasing portrait of a very popular man. Mr. Laird was born at Balgonie, near North Berwick, on May 16, 1823. He commenced his career with his brother, the late Mr. W. P. Laird, founder of the firm of Laird and Sinclair. In 1843, with a view of gaining wider experience, he entered into an engagement with Messrs. Dickson & Co., of Edinburgh, where he remained for five years. Mr. Laird then entered into partnership with Mr. John Downie—the firm of Downie & Laird, winning a high reputation. In 1860, Mr. John Laing, then gardener to the Earl of Roslyn, was assumed as a partner, the firm being known as Messrs. Downie, Laird, & Laing, a branch establishment being opened at Forest Hill, London, under the superintendence of Mr. Laing. The partnership continued until 1874, when Mr. Laing retired from the firm, taking over the London branch, which he still carries on. Mr. Downie and Mr. Laird continued the Edinburgh business under the original name of the firm. In 1882, the firm of Downie & Laird was dissolved, Mr. Laird taking over the entire business, which he carried on with his sons Mr. D. P. Laird and Mr. R. Laird. Owing to the death of his brother, in 1872, Mr. Laird became senior partner of the firm of Messrs. W. P. Laird & Sinclair, Dundee; and on the death of his two partners, Mr. Sinclair and Mr. Hardie, in 1885, after a lapse of over forty years, he returned to Dundee, and took over the whole business. Mr. R. B. Laird is now head of both the Edinburgh and Dundee firms. From their establishment these businesses have gone on enlarging and increasing until now, when they hold the enviable position of being classed amongst the leading nursery and seed firms of the three kingdoms, with connections extending all over the world; their nursery grounds taking in over 120 acres, a large area of which is covered with glass, and where all sorts of nursery stock are successfully raised.

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM MACFARLANEI, *n. hybr.**

This very beautiful new hybrid was raised in the nursery of Messrs. F. Sander & Co., St. Albans, and flowered in the month of August in the well-known collection of *Cypripediums* of R. H. Measures, Esq., The Woodlands, Streatham. It is, as mentioned below, the offspring of *C. calophyllum* × and *C. Spicerianum*, the latter being the pollen plant. The new plant has the size and the beautiful upper sepal of the male, but more flat, and not so revolute on the edges. The labellum, and to some extent the staminodium, look perfectly like the corresponding parts in *C. Spicerianum*. From the mother plant—

* *Cypripedium Macfarlanei*, a. hybr. (*C. calophyllum* ♀ × *C. Spicerianum* ♂).—Sepalo dorsali latissime ovato acuto carinato plicato albedo teerrime roseo superfufo basi viridi; sepalis lateralibus (septo inferiore), ovato acuto plicato pallide luteo-viridi; petalis oblongo-linearibus obtusis, margine superiore nudulatis pilosis (nec verrucosis), viridi-brunneis linea mediana crassa adjectisque utrinque tenuioribus punctulatis fuscis; labello basi viridi antice et supra brunneo margine anteriore orificii leviter emarginato margine posteriore purpureo punctulato; staminodio late cordato supra bipartito purpureo verrucis minutis atris decoro. Totus flos 4 pollices latus, 3 pol. altus, sepalum dorsale fere 2 pol. latum. Folia lineari-lanceolata acuta laete-viridia reticulata, 8–10 pol. longa, 1½–1¾ pol. lata.

C. calophyllum—the hybrid has taken the petals, which are more spreading, and the upper margin of which is less waved, and the dark reticulated leaf. The plant has been named in honour of Mr. Macfarlane, the artist. *Dr. Kränzlin, Berlin.*

CŒLOGYNE MICHOŁICZIANA, *n. sp.**

The description of this new and very beautiful *Cœlogyne* is made from a flower preserved in alcohol, with bulbs, leaves, seed-pods; and notes written at Macassar by the collector. It is to be hoped that this singular species will soon appear in this country, The flowers are snowy-white, waxy, and somewhat transparent. The labellum is on the whole of the inside, of a beautiful shade of brown, and looks as if it were lacquered. Regarding the position of this new species, it must be ranged under the tribe of *Filiferæ*, or species with very narrow thread-like petals, as for instance in *C. speciosa*, Lindley. The large, flat, smooth, cushion-like callosity laid over the whole disc of the labellum is quite peculiar. The plant may bear the name of Mr. Micholicz, the zealous collector of Messrs. Sander & Co., to whom we are indebted for the valuable material for this description. *Dr. Kränzlin, Berlin.*

SCOTLAND.

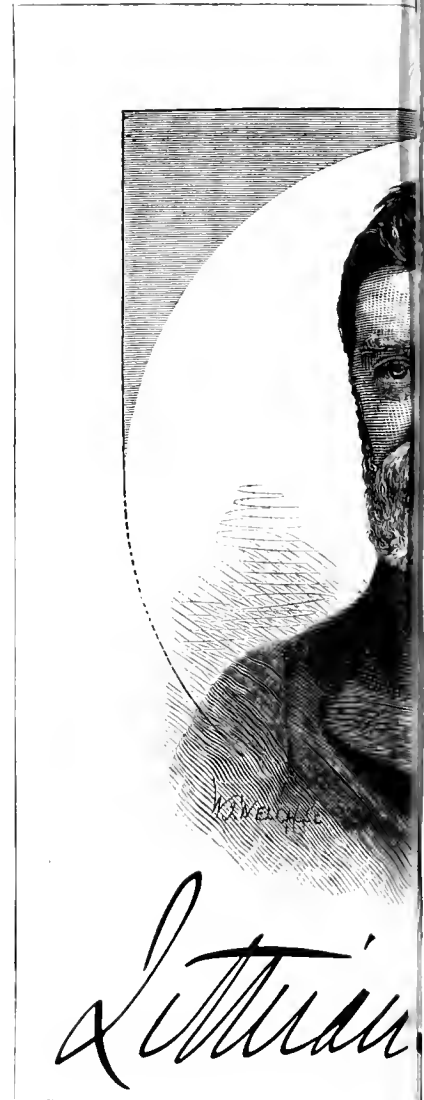
FREELAND HOUSE, FORGANDENNY.

The residence of Collingwood Lindsay Wood Esq., Freeland House, is situated about 7 miles from Perth, Forgandenny, which lies just outside the policies, being the nearest railway station. The place is a fine example of the old and the new in gardening taste, harmoniously combined. Formerly it was the property of a branch of the ancient Ruthven family, but was sold by the last resident Baron of that name to the present proprietor. The original design of the park and gardens, as is shown by an old plan still preserved, was in the Dutch style. The principal features of the original plan are still traceable within the home policies, in the form of grand old avenues of Beech and Lime trees, which are carefully preserved as ancient relics should be, even while modern improvements must of necessity be introduced. The outline of the place by the old plan appears to have been a square of about 144 acres, which was subdivided into squares of 12 acres each by avenues of trees; the intersections of the squares being worked by roundels or circles. Storms and other agencies, in the passage of time, have broken up the perfect symmetry of these features, but, as already observed, they are traceable throughout the whole of the older parts of the place, and in some cases are complete and perfect. This is particularly the case in the broad avenue, which is formed by Limes of noble proportions. The breadth of this avenue is 85 feet, and the length 165 yards. The trees average 100 feet in height, and in girth are fairly equal, one of the largest being, at 5 feet from the ground, 11 feet 1 inch. The centre of the avenue was formerly laid out as a flower garden in the Dutch style, but now forms part of the main approach to the mansion from the south. At the northern end of this fine avenue, entrance to the old kitchen garden is obtained.

* *Cœlogyne Micholucziana*, *n. sp.*—Pseudobulbis subtetragonis, 2–3 pol. altis, 1½ pol. diametro; foliis 2 obovato-lanceolatis acutis, 5 nerviis; racemo bifloro 10 pol. longo outaote; bracteis angustissimis convolutis ovarii longioribus; sepalis dorsali oblongo-ovato acuto, lateralibus acquilongis angustioribus omnibus basi cucullatis; petalis acquilongis multo angustioribus linearibus acutis, labelli lobis lateralibus erectis, ½ totius labelli aquantibus antice rotundatis obtusis intermedio latissimo lineari antice retuso apiculato per totum discum callo laevi et apicem versus lineis 3 convergentibus instructo; gynostemio sepalis dorsali fere acquilongis eique adpresso curvato supra incrassato, anthera plana, rostello latissimo; capsulae hexagonae 3 pol. longae, alis manifeste proslitentibus.—Totus flos albus, sub pellucidus, callis labelli et pars interior loborum pulcherrime brunneus verrucosus.—Qu. Nova Guinea detexit Micholicz, v.-cl. Domini, F. Sander collector sedulus. *Dr. Kränzlin, Berlin.*



ROBERT LINDSAY,
Curator, Royal Botanic Garden.



T.
The Most Noble



JOHN DOWNIE,
Member of Council.



THE ASS

In this neighbourhood are found a notable specimen of *Robinia pseudo-acacia*, about 50 feet high, the stem girthing 4 feet 5 inches at 5 feet from the ground; a massive group of Portugal Laurel of great height, open below on one side, revealing numerous stems from 2 to 3 feet in girth, which spring from the base of the decayed stumps of the original stems. Arising from the midst of this group, a remarkably well-developed tree of *Cupressus torulosa*, from 25 to 30 feet high, the stem of which at 5 feet from the ground girths 5 feet. Near by is one of the finest specimens of variegated Sycamores I have ever seen. In height it is about 80 feet, and about

Acre; a circumstance significant of the measure of appreciation of the master for the worth of his dead servant.

Passing onwards towards the present mansion, through some splendid specimens of English Yew and other well-developed trees, the way rendered still more interesting with luxuriant groups of evergreen and deciduous shrubs, we stop to drink at the Lady's Well, a refreshingly cool spring of great volume. The basin of the spring is some 9 or 10 feet by 12 feet or 13 feet, ever overflowing with pure water. It is arched overhead, and surrounded by the ruins of the old home of the Ruthvens, which was

mansion on the north, on the south by wooded slopes rising to a great height, and on the west by the avenues and groups of grand old trees which we have already passed through. To the north-east a very fine view is obtained from the lawn of the Kinnoul and Moncreiffe Hills, both of which form beautiful features in the surrounding landscape. Grouped at one side of the lawn are promising specimens of some of the more rare Conifers and choice Hollies, *Cedrus atlantica glauca*, *Sciadopitys verticillata*, *Abies lasiocarpa*, and others, though young, are full of promise of attaining good old age, and fine dimensions.

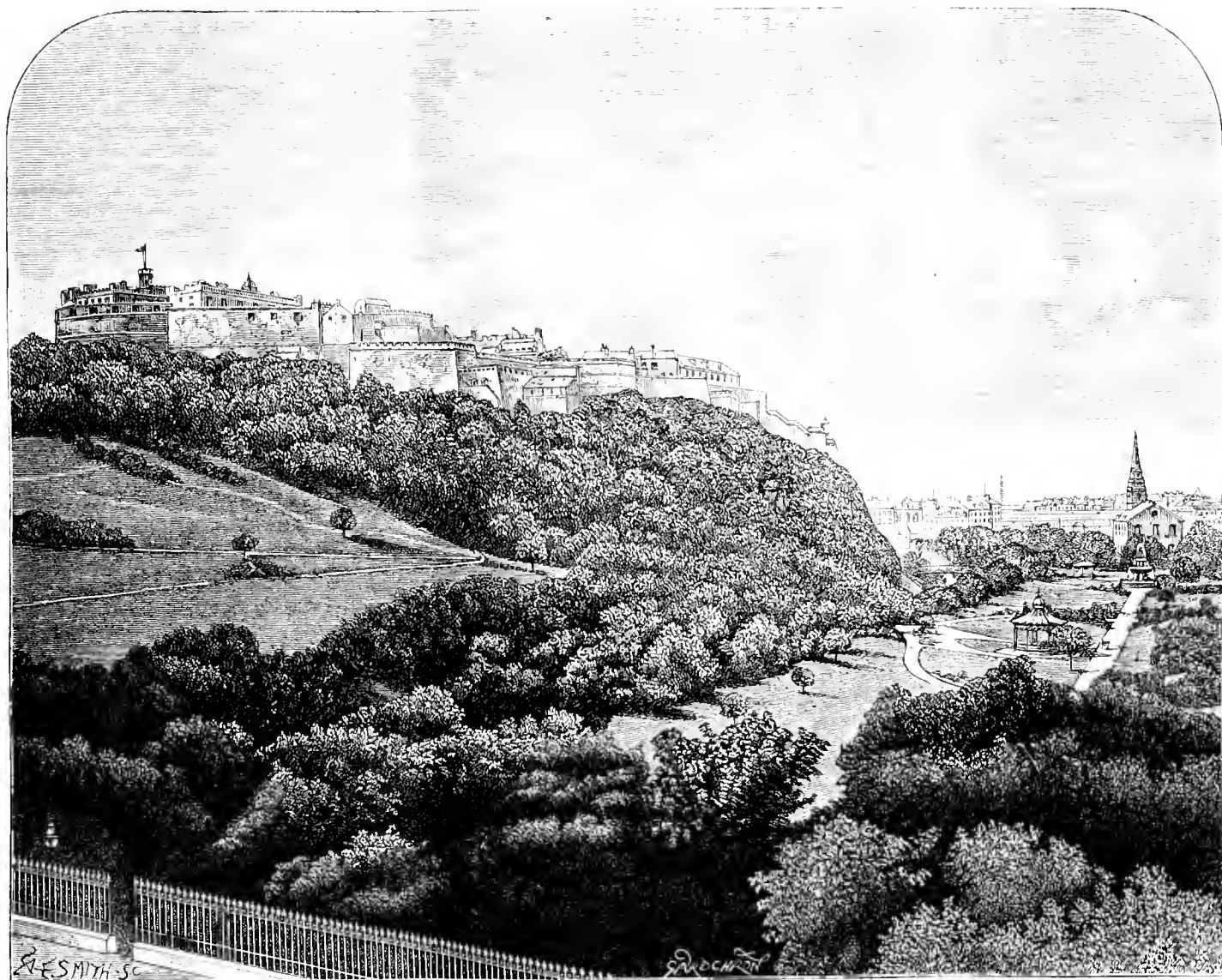


FIG. 37 — PRINCES STREET GARDENS. (SEE LEADER)

the same dimensions in the spread of the top, notwithstanding it is somewhat confined by surrounding trees. The stem girths about 9 feet.

The family burying-ground, formerly the Melon ground of the old kitchen garden, next engages attention. It is an ample rectangular space in grass, surrounded by a low wall, and embosomed among trees and shrubs. Fittingly secluded and unobtrusive, this hallowed spot has nothing of funereal gloom either in its surroundings or internal features. The remains of the late James Routledge, thirty-one years gardener to Mr. C. L. Wood, find a resting-place in one corner of this private God's

destroyed by fire in 1750. The water was formerly credited with medicinal virtues, but its chief value in troublous times in which the Ruthvens had a full share, would be its potency in enabling them to resist a long siege. If they had plenty of bread their water was sure, and within the walls of their stronghold.

Hitherto the view of the visitor has been bounded on all sides by the magnificent trees forming the various avenues, but a short walk from the ruins of the old house of Freeland ushers him on the lawn by the south-west side. The lawn is a spacious clearing of several acres in extent, bounded by the

An avenue of Beech extending from the west end of the house northward might appropriately be named the Gothic avenue, so much does it resemble the architecture of the aisle of a gigantic cathedral. The trees, which have perfect, clear, straight boles of great length, are from 110 to 120 feet in height, and the girth of one of the largest at 5 feet from the ground is 11 feet 3 inches.

The Den, a valley which separates the new kitchen-garden from the house, is a beautiful and interesting feature of the place. Grassy banks, grand old timber trees, groups of shrubs, and bold clumps of Delphiniums, Aconitums, Foxgloves,

hardy Ferns, and other strong-growing herbaceous plants are the components of the adornment of a very pretty winding glen, through which runs the overflow from the Lady's Well. Notable among the finer trees were an *Abies canadensis*, 40 feet high, with ample spread of top; grand English News; a silver Fir, girthing 11 feet 9 inches at 5 feet from the ground; a Beech which girths 15 feet at the narrowest part of the bole, swelling immediately above and breaking into eight huge limbs, the height being about 100 feet, and the spread of the branches, 106 feet; and a grand specimen of *Quercus cerris variegata*, girthing 11 feet 10 inches, 84 feet in height, and 88 feet spread of top.

THE NEW KITCHEN GARDEN

is approached by a handsome iron bridge which spans the Den. It is about $2\frac{1}{2}$ acres in extent, with a good southern exposure. The walls are well clothed with the usual kinds of hardy fruits. Plums, Cherries, and Apples were bearing fair crops. Pears do not, it appears, succeed well as a rule, and the same has to be said of Apricots. Small fruits are plentiful, but few of these, except Strawberries are grown here, the bush fruits and standard Apples being grown chiefly in the old kitchen garden, a considerable distance off. A fine range of glass, recently erected by Messrs. Low & Sons, Edinburgh and Manchester, extend the whole length of the north wall of the garden. Entering the range by a Rose-house planted eighteen months ago, we pass through two Peach-houses of considerable size; good crops, considering the comparative youth of the trees, being carried in both houses. Then follow four vineries, all bearing fine crops; one house of Black Hamburgh just finished colouring, being remarkably fine in colour and in quality. In the later houses, the crops, though heavy, gave indications of finishing up in an equally satisfactory manner.

ORCHIDS.

Of these there is an excellent selection being brought together. Mr. Sharp, under whose management this place is, is not only a thoroughly capable all-round gardener, but he is a specialist in Orchids. He is the Mr. Sharp who for twelve years prior to his entering on his present charge was gardener to Mr. Curle, at Prior Wood, Melrose, whose collection of Orchids is one of the best in Scotland at the present time.

In the warm section, *Vanda Sanderiana*, with two spikes on two growths, nine flowers on each, and two more growths showing flower, was a gem to begin with to anyone on the hunt for the cream of a collection. *Epidendrum prismatocarpum*, though an older acquaintance, was hardly less pleasing in the shape of a moderate-sized plant, with seven fine spikes in perfect condition. A small plant of a special variety of *Lælia elegans*, with one spike, was notable for the intense and brilliant colouring of the lip. The principal Cattleyas in flower were *C. Mendeli* and *C. Mossiae*. In *Cypripediums* the collection is rich in good things. A nice plant of *C. Lawrenceanum* showed nineteen scapes in perfection; *C. barbatum nigrum superbum*, a remarkably dark-lipped form, showed twenty fine scapes. A variety of *C. niveum*, as nearly pure white as may be, was showing a few flowers. Others in flower in this section were *C. Stonei*, *C. bellatulum* and *C. grande*, the latter a fine plant with seven young growths. Among notable things not in flower were good plants of *Lælia autumnalis alba*, *Cattleya Warocqueana*, *Ceologyne Sanderiana*, the latter with four fine growths; *Dendrobium Cooksonii*; *D. densiflorum*, a gigantic specimen 6 feet across, from tip to tip of growths, with two or three dozen young growths rising among the old; *Cypripedium Arthurianum*, *C. vexillarium*, and *C. cananthum superbum*.

In the cool section the principal things in flower were the rather shy *Masdevallia Davisii*, a fine plant sending up many scapes, *Oontoglossum vexillarium rubellum*, thirty scapes, very fine; many

forms of *O. Alexandræ*; *Cypripedium Veitchianum*, with twelve scapes. *Masdevallias* in fine specimen plants in flower were, *M. atrosanguinea* and *M. miniata*. Perhaps the most astonishing achievement of Mr. Sharp's cultural skill were four unsurpassable pans of *Disa grandiflora*, perfect masses of luxuriant foliage and flower-spikes from 15 to 20 inches high, each pan containing from eighteen to twenty spikes. The plants were standing in the fullest exposure to the sun in a cold frame, with the air blowing through it freely. After this I had little inclination to spend much time in viewing Cucumbers, Tomatos, and Melons in the several houses devoted to them, though it is only just to say they were all of first-rate quality. H. S.

THE STRAWBERRY SEASON OF 1891.

THE Strawberry season in this district (South Bucks) was a fairly long one, and the produce generally good, although a few fruits were spoilt by rain, and a few early blossoms perished by the frosts in May; but the crop, nevertheless, was a very heavy one.

Last autumn, with the view of testing the earliness of several varieties, I planted a number of well-rooted runners on some narrow south borders. Here I may remark that to those who do not practise the plan of planting a number of plants to be treated as annuals for the earliest crop, a loss of from ten days to a fortnight in earliness of ripening over the older plants, is the certain result. The kinds grown side by side were Noble, Marguerite, Vicomtesse de Thury, Pauline, La Grosse Sucrée, and Anguste Nicaise. The first varieties coming into flower were Noble and Marguerite; these had several blossoms fully open on April 29, Vicomtesse de Thury and La Grosse Sucrée on May 2, Pauline and Anguste Nicaise being several days later. The early flowers of Noble set well, and the embryo fruits swelled much more rapidly than the other varieties, many of them having attained a length of three-quarters of an inch before the cold weather and frosty nights of May 17 to 20, and, with the protection of the foliage, escaped harm. A few flowers of this and other varieties were destroyed, but not sufficiently to materially affect the crop. The first ripe fruit of Noble was gathered on June 8, and good dishes from the 15th and onwards. Marguerite and Vicomtesse de Thury had a few fruits ripe on the 18th, La Grosse Sucrée on the 20th, Pauline and Anguste Nicaise being several days later, ripening with Sir J. Paxton. I had no complaints from my employers respecting the flavour of Noble, but the fruits were pronounced to be "large and good," and for the first crop outdoors it is a decidedly valuable variety. For the principal or mid-season supply we rely on President and Sir Joseph Paxton, the former is one of the best Strawberries in cultivation and difficult to beat, either for flavour or cropping qualities by any other, although it is rather soft and does not pack quite so well as Sir J. Paxton. Both varieties fruited heavily this season, and the same applies to Vicomtesse de Thury, grown chiefly for preserving purposes, the largest fruits being picked out for dessert use. Sir Charles Napier is grown for following the mid-season kinds, and for the latest supply Waterloo, Oxonian, and Elton Pine. The two last-mentioned are excellent late varieties, good bearers, both have fruited remarkably well this season, and we had still a few left on August 17, covering over two months outdoor Strawberry supply.

If selecting the best six varieties, I should prefer Noble, Vicomtesse de Thury, President, Sir J. Paxton, Oxonian, and Elton Pine. Rooted runners are now being planted of Noble for early fruiting next season; they will also succeed equally well if layered into pots and planted out not later than the beginning of October, if space cannot be found earlier for them. H.

PLANT NOTES.

HYACINTHUS CANDICANS.

PRONANLY few of the newer species of poplar border flowers have been more appreciated than *Hyacinthus candicans*. The long pleasing bright green leaves, and bold spikes of pendent blooms, make it a favourite wherever grown. The plant is reputed "perfectly hardy," yet when it is seen how badly even lifted and dried bulbs ripen off their previous crowns of large succulent leaves, owners have been adverse to risking their plants out-of-doors during our often severe and trying winters. I confess to have dreaded this contingency, and should therefore be glad of information as to whether plants left in the ground last winter survived. It is not improbable the remedy is worse than the risk run. Such bulbs as are taken up, owing to the cause already mentioned, are very prone to rot when potted and placed under glass for preliminary rooting and starting into growth. In my case, I have (when so treated) lost cent. per cent., though the bulbs saved were of immense size and gave great promise. That the bulbs possess great endurance is obvious, and their capacity to increase is immense. Such examples as lost their base from decay after potting, being dried upon a shelf and again inserted in soil, have rooted free from the diseased scales, and are pushing up innumerable young growths. This explains why this grand plant is sold so cheaply; beyond doubt it can be propagated as readily, if not more readily, than ordinary florist *Hyacinths*. Should any correspondent favour us by information as to the perfect hardihood of this plant, will he also say whether any survived the past winter having their badly-ripened apices fully exposed? *William Earley*.

PLACES OF INTEREST GOING NORTH.

(Continued from p. 233.)

LAMBTON.—This magnificent estate of the Earl of Durham is reached by the traveller from Newcastle by the Leme Valley Railway, the station at Penshaw being that nearest to the gardens, if that is the object to be visited. Within the home demesne one sees but little of the surrounding score or more of collieries belonging to his lordship, and only fine timber broad-walks, thickets of *Rhododendrons*, choice *Conifers*, and the constituent materials of an English nobleman's home surroundings. We wondered on seeing them, how much longer they would remain in their present beauty unharmed by the baleful fumes of chemical works and factories of various kinds. Your colliery with its one tall chimney and smouldering waste-heap, which goes on burning the small coal and pit-rubbish for a century or longer, is not so bad in its effect on vegetation, and may be endured; but with the chemical works there is no compromise possible.

Visitors to Lambton see usually only those gardens which surround and form the setting, as it were, for the numerous ranges of glass-houses in which Mr. Hunter, the head gardener, has for so many years grown those wonderful specimens of Grapes, Pines, Melons, &c., to be met with at the first northern exhibitions. Not that fruit alone is cultivated, as several houses—and some of them very picturesquely designed ones—are filled with plants in great variety. The aforesaid evil vapours are fast driving Mr. Hunter to growing Apples, Pears, Plums, Figs, Peaches, and Nectarines under glass protection. Half-span and other houses were found filled with Apples and Pears growing in 9 and 10-inch pots mostly. The trees generally were bearing good crops of clean-skinned, handsome fruits, much out of character, of course, as glass-house culture always makes them. The quality of the fruit, we were informed, was good, the best methods of treatment having been mastered, and the season is a long one—longer, in fact, than would be attainable with trees under healthy conditions, growing in the open air. Gathering commences in July, and fruit is found in eatable condition in the fruit-room in April. It is found

that great attention must be paid to the watering of these little trees up to the finishing of their fruits, meanness or grittiness often occurring, especially in Pears, if great care be not taken to afford water when it is needed. No heat is artificially applied, but the houses are shut up about 3 p.m. at this season, and opened at 7 a.m. A very long lean-to facing south is planted with Pears, as triple cordons, and exceedingly profitable it looked, loaded as each tree was with beautiful fruits. They were trained straight across the bouse from the front towards the back, and to stout wires standing at 1 foot distant from the glass. As manures, soot, lime, and artificials of some kind, but the last not largely. After a tree has parted with its fruits, it is stood outside, and in the winter it is plunged in a bed of coal-ashes.

The unusual sight to those accustomed to south-country gardening was a very nice fan-trained Magnum Bonum Plum tree, with a heavy crop of nearly-ripe fruit upon it (August 12), trained to the walls and roof of a lofty house.

Doubtless, under those conditions of warmth and air-dryness, the fruits would acquire a richness of flavour seldom reached out-of-doors in this country. The vineries are many, and the produce of the Vines with which they are planted was of great merit. The varieties of Grapes grown are Muscat of Alexandria, Black Hamburgh, Black Alicante, Gros Maroc, Gros Colmar, both on own roots, and worked on Raisin du Calabre, the latter showing no difference either in form of berry, shape of bunch, or foliage. The bunches of most of the varieties were above ordinary size, as were the berries. Some bunches of Raisin du Calabre were of enormous proportions.

Seedling Grapes have been raised in numbers by Mr. Hunter, but although many passable novelties have been met with among them, there has been nothing that is better than our old-established varieties. The colour of the new-comers has nearly always been white, even when a black Grape has been used as the pollen-parent, the seed-bearer in most of the crosses being an early-fruited American Grape. A cross between Gros Colmar has Grapes round, of a musky flavour, and thick skin. It keeps a long time. Melons are largely grown, several varieties in a house; and Figs meet with much attention.

Peaches and Nectarines have several houses devoted to their culture, and are found as fan-trained and bush-trees. The walls of the kitchen garden are still covered with well-trained Plums, Pears, Cherries, &c., whose places will in time be given over to the Gooseberry and Currant. Cherries, which fail largely on walls, owing possibly to the impinging of the chemical vapours against the walls, do exceedingly well as low bushes in the open quarters, in so far as regards the Morello class.

The many well-planted beds and borders scattered about on the two terraces on which stand the houses, contain a very large number of the usual class of bedding plants. The Wallflower-leaved Stock finds much favour, and is largely planted in lines, as is the Carnation in named varieties.

Visitors will note the remarkable cleanliness of the gardens and the excellence of the walks, a great desideratum in a rainy climate like that of Durham. The walks are covered with about one inch of a dark-coloured gravel, or pebbles of about the size of a horse bean. It is always dry and pleasant to walk upon, and does not become readily weedy.

Lambton, we may say in conclusion, shows a good example of first-class gardening carried on under unfavourable conditions; and its teaching in the matter of fruit culture would be found of great service to those who may be similarly situated.

SOUTH SHIELDS CEMETERY.

A large cemetery exists at Westhoe, which for the peculiar character of its planting, is worthy of a visit. The area is large, and is divided into long parallelograms by means of hedges of the yellow variegated Elder, which at this season of the year are at their best. The winds from off the sea hardly allow of other shrubs being planted at present, although attempts are being made

with *Hippophae rhamnoides*, *Olearia Haastii*, *Ligustrum lucidum*, and some New Zealand Veronicas; this is done but tentatively, and where the shelter from the blast is thickest. The Elder bushes are cut back to stumps; in fact, they are pollards with a stem or stems about 18 inches high, and the annual shoots are cut back to within about two buds of the old wood; this is done in the winter. Annuals are lavishly planted at the sides of the borders of Elder which face the walks, and succeed admirably. Another novelty deserving of imitation is a boldly-designed rockery, which Mr. Cowan, the superintendent, hopes will become in a year or two an admirable feature.

CANADA.

THE SOCIETY OF AMERICAN FLORISTS.

Your readers, no doubt, will be interested in the great International Florists' Convention that was held in Toronto last week. This Convention was of some importance, because it was the first of an international character, and embraced delegates from all parts of the United States and Canada. The place of meeting was the pavilion in the horticultural gardens, which were tastefully set out for the occasion. There were some 700 delegates from the United States, and between 200 and 300 from Canada. Besides the ordinary business of the Convention, there were papers read on "The Future of Floriculture in the United States and Canada," "Sub-tropical Bedding," "Aquatic Plants," "Begonias, Flowering and Foliage, their value as Decorative Plants;" "The Twelve Best Plants for Table Decoration," "Credits," "Store Trade," "Carnations to Date," and the usual reports. From a business stand-point the Convention was a decided success.

Mr. Allison, the representative of the Horticultural Department of the great Columbian Exhibition that is going to be held in Chicago in 1893, gave a glowing description of the horticultural buildings for that occasion. Plans and elevation were shown, which, if carried out, will be something wonderful. The horticulturists and plant growers of the United States are now being put upon their mettle, and are preparing Palms and sub-tropical plants for the decoration of these buildings and grounds, and on this line they intend to "whip all creation."

These conventions are doing a great deal of good, and are of a decided advantage to the trades they represent. It seems that they have a social side as well as a business one. The Canadian delegates met their brethren from the United States on their arrival at the Union Station, and conducted them to the different hotels, and saw that each of them was comfortably taken care of. The Mayor and a number of aldermen welcomed the delegates in short, neat, pithy addresses.

The ladies of the Convention were given a drive in carriages through the principal streets of the City, thence to Mount Pleasant Cemetery, and from there to Rose Hill, Reservoir Park. The ladies had a real treat, and saw the City and its many elegant private residences to great advantage.

"Let one great day
To celebrate sports and floral play,
Be set aside."

On Wednesday a grand garden party was given by Alderman Hallam, at his summer residence, Chorley Park, Rosedale, where all the delegates, together with a number of leading citizens, were invited. There are few places so near Toronto affording as fine a view of natural Canadian scenery as Chorley Park, and no one capable of more agreeably entertaining the visiting florists than its owner. These advantages were appreciated and enjoyed to the fullest extent by the visitors. Everything was arranged in real picnic style. Hundreds of Chinese lanterns hung on the trees, and shrubs and the grounds were beautifully decorated with the Union Jack, United States, German, and French flags.

The green sward was dotted over with fine specimen Palms and foliage plants, which gave the grounds a fairy-like appearance, and which blended nicely with the beauties of Nature and the landscape gardeners' art, and gave the visitors much to admire and profit by.

The music was provided by the band of the Grenadier Guards, concluding with—"Maple Leaf," "Star Spangled Banner," "British Grenadiers," "Yankee Doodle," "God Save the Queen."

A tempting banquet was provided on the grass under a handsome marquee (decorated with flags, Smilax, and Chinese lanterns), which soothed the appetites that had been stimulated by the bracing Canadian air. The table was set out with beautiful Orchids, Pitcher Plants, and choice cut flowers, supplied by the celebrated Orchid growers, Messrs. Siebrecht & Wadley, of New York.

The business of the Convention was brought to a close on Friday, and a banquet was provided in the Exhibition Park with the usual round of toasts. The ladies gave the following cordial vote of thanks:—"Resolved that we, the ladies of this Convention, desire to tender the ladies and gentlemen of the Toronto Gardeners' and Florists' Club our most cordial thanks for the kind courtesies and social favours tendered us while in Toronto.—Signed, Mrs. M. H. Norton, Mrs. Robert Craig, Mrs. J. M. Jordan, Mrs. J. M. Gassei, Miss Brock, Miss Ella Campbell Wilson." Mr. Norton, the retiring President, was then made the recipient of a very handsome silver tea-service, subscribed for by the delegates, for which he heartily thanked them on behalf of himself and wife.

The *Toronto Globe* with commendable enterprise, gave considerable space to the proceedings of the Convention, and on Saturday issued an illustrated number, giving the portraits of the leading United States florists, with short biographical sketches of each.

The Convention for 1892 will be held in Washington, and the President for that year is James Dean, of Bay Ridge, New York; first Vice-President, W. R. Smith, of Botanical Gardens, Washington; Secretary, Wm. J. Stewart, of Boston, Massachusetts; and Treasurer, M. A. Hunt, of Terre Haute, Indiana. J. H. [The Society has no exact equivalent in this country, as it is devoted solely to the commercial side of horticulture. There are about 1600 members who devote their attention naturally to the specialties which pay best without much reference to other departments of horticulture. On the present occasion, papers were read by Mr. William Falconer on "New Plants," comprising select lists of Begonias, hardy perennials, Chrysanthemums, Roses, and other popular plants. Various essays were read on the construction and mode of heating glasshouses and other subjects. Ed.]

FLORISTS' FLOWERS.

BENARY'S NEW CARNATIONS AND PICOTEEES.

MR. BENARY, of Erfurt, Germany, fairly startled English florists with that grand flower, the yellow self Germania, a pure light yellow self, of refined form and good substance, full-size, and with a well-formed calyx. It is a beautiful variety, of free growth, and should be in every garden. Other sterling varieties came also from Mr. Benary, and one of the first of our great growers to take them in hand was Mr. Dodwell, who gave florists an opportunity of seeing a few of them in 1889 at his annual great Carnation and Picotee show at Oxford. My object now is to refer more particularly to his new varieties, some of them introduced to this country in the autumn of last year; and as they are cultivated about Birmingham, I have repeatedly seen them whilst in bloom, especially at Messrs. Thomson's Sparkhill Nurseries, where first-class cultivation of the Carnation and Picotee prevails under Mr. C.

H. Herbert's personal supervision. Here, Benary's new varieties have had every chance of being seen in their true character, and it must be admitted that they are a good all-round lot.

Von Beningsen has an orange ground colour, with broad scarlet markings; a bright fine flower, with good pod, and a free grower. This is a rich-coloured variety, not so intense in the rich carmine-crimson tint as in A. W. Jones, but is distinct and fine.

William Dreer.—Bright orange ground, flaked with crimson-lake—a bright and distinct variety of good size, but with a tendency to roughness on the edge, but will find many admirers.

Stadrath Bail.—Light yellow, with rays or small stripes of orange-red and deep scarlet—a distinct fine flower.

Esmarch.—Bright cream and yellow, heavily bordered and flushed with crimson and lake—a bright, distinct, superb flower.

Frederick Wagner.—Lemon ground, heavily margined with bronzy-tinted lilac and rose—a distinct fine flower.

Von Helnholtz.—Creamy-yellow, rayed and striped with orange and mauve—a very distinct, handsome variety.

Nora.—Primrose ground, flaked with light scarlet—a very distinct fine flower, of large size and good form.

Frederick Alexander.—Cream ground, rayed and striped with scarlet, crimson, and white—a large-sized, bright, distinct, striking flower, but rather rough in the margin.

Sarony Unger.—Dark creamy-orange, striped with rich mauve—a handsome and very distinct flower, of fine form and substance; extra fine.

Professor Virchow.—Light cream, heavily clouded with bright cerise-pink, striped with pale lilac, a distinct and charming variety of good size and form.

Alegatière.—Pale yellow-edged, and rayed with carmine. A fine flower with excellent pod.

Schleiben.—Mauve, the base of the petals of an orange colour. A very distinct flower of fine form.

The above-named have all been introduced by Mr. Benary, and independent of the qualities now ascribed to them, they all have a good constitution and give plenty of "grass," and not one having a tendency to produce flowers with a split calyx. Messrs. Thomson & Co. have their own new varieties to send out this autumn, and have been growing and again testing a large number of plants of each. In the class of Picotees, known as Fancies (of which many of Mr. Benary's are types), their new variety, A. W. Jones, holds the first place; it is a grand variety, and has received some Certificates, and has a robust constitution, giving plenty of grass, and several plants placed out on a border are blooming freely, and the colours are brighter even than from the plants in pots. It has an orange-ground colour with heavy rich scarlet and crimson stripes, a true bizarre Picotee, very distinct and bright, and very fine. It is a telling exhibition flower with a good pod, and the Clove Carnation perfume. The following are also new kinds, raised at the Sparkhill Nurseries, and to be sent out this autumn.

Annie Sophia.—White ground, barred and spotted with rosy-purple, fine stout petal, good pod, and constitution; a quite distinct fancy Picotee.

Mrs. Herbert.—Light rose, wire-edged, and snowy-white ground colour, very fine petal and form. An excellent exhibition flower, of good constitution, and well-formed pod.

Blushing Bride.—Self Carnation, is a grand flower for both exhibition and decorative work, good constitution, free bloomer, the flowers on stout foot-stalks, and an excellent variety for bouquets and decoration; colour, blush-white, of full size, broad, stout petal, excellent form, and perfect pod.

William Spinks.—Rich dark scarlet-crimson self, good pod, petal, and form, and of short, sturdy growth.

C. H. Herbert.—Scarlet bizarre Carnation; has received some Certificates. It is a very fine new variety, bright in the colours, and of large size and

fine form, with good pod, and a free grower; in fact, it is such a free grower, that richly-manured soil for this variety should be avoided.

Robert Thomson.—Rose-flake Carnation; has a very broad, stout, well-formed petal, and is bright in colour, and of good form and pod. A really fine flower.

S. S. Thomson.—Pink and purple bizarre Carnation, very fine petal, good substance, and a fine flower.

Fancy Picotee, Mrs. Thomson.—Salmon ground, heavily margined with bright rosy-crimson. A lovely flower, of fine form.

Lilian.—Yellow, heavily edged and rayed with very bright scarlet, contrasting so well with the clear light yellow ground colour, and of extra fine form, good size, and capital pod. This beautiful and distinct fancy Picotee was raised by Mr. James Douglas, who sold the stock of it to Mr. Robert Sydenham, Birmingham, and it was distributed to local growers, all of whom report very highly of this flower. I look upon it as a great acquisition. Other fine seedlings, raised by Mr. J. P. Sharp, the raiser of Mrs. Sharp and Campanini, have bloomed this year, and will make their mark anon, after another season's growing. *W. D.*

WHAT BECOMES OF THE RAINFALL?

The most recent issue from Rothamsted is a small pamphlet of observations on Rainfall, Percolation, and Evaporation, with results obtained at Rothamsted over twenty harvest years—1870-71 to 1889-90 inclusive; the main portion of which formed part of a discussion at the Institute of Civil Engineers, in March last, of a paper by Mr. J. Thornhill Harrison "On the Subterranean Water in the Chalk Formation of the Upper Thames, and its Relation to the Supply of London."

As important estimates had been founded on the Rothamsted results, Sir J. B. Lawes and Dr. J. H. Gilbert thought it might be of interest to provide further data than had been already published, hence the present issue.

The appended tables show for each of twenty years, the amount of rain in inches, the percolation in inches through 20, 40, and 60 inches of soil, and the complementary amounts which represented evaporation, also the averages for the twenty years. The results are given for harvest years, that is from September 1 to August 31. As, not only is that method of computation of interest to agriculturists and horticulturists, but the authors think it ought to be adopted by those who study the question of drainage from other points of view. The results show that the average minimum drainage is in August, and that in September the amount begins to increase. If the civil year were taken, it would be found that the end of December cut the drainage in the middle of the period of greatest activity, whilst marked decline commenced with March, not April, the point of civil year division.

The advantage of having a considerable number of years, and full details, was that they were able not only to get a better average, but to study the maxima and the minima, which were of the greatest importance, especially the latter, when they came to consider what was available over a series of years.

The data shows that in 1873-4, with a rainfall of something under 22 inches, the drainage through 20, 40, and 60 inches of soil was only 5.74, 5.40, and 3.94 inches. In 1879-80, with a rainfall also between 21 and 22 inches, the drainage was 6.89, 7.39, and 6.50; whereas, in 1878-79, with a rainfall of 41 inches, the drainage was 24.44, 26.03, and 24.38 inches. In 1880-81, with a rainfall of 36.8 inches, the drainage was 22.38, 22.84, and 21.26 inches. Thus, within the harvest year, we may have little more than 5 inches of drainage, or as much as from 22 to 25 or 26 inches. Such results were of great importance to study, when considering what would be available under any given circumstances.

The details further show that, although the rainfall obviously had a considerable influence upon it, yet the amount of drainage was by no means proportional to the rainfall, but depended to a great extent upon the distribution as well. Thus, to give a very obvious example, if they had a given amount of heavy rains during the growing period, there might be no drainage at all; whilst the same quantity during the winter, when there was no vegetation and little evaporation, might give a very large proportion of drainage. The drainage was, in fact, materially affected by the distribution of rain, and the drainage and evaporation were, of course, complementary to one another. The data showed that, taking the difference between rainfall and percolation to represent evaporation, they had in two years only 12 inches of evaporation, and in several between 19 and 20 inches; so that there was a great difference in that respect also. According to the average of twenty years, with rather heavy soil, free from vegetation, it might be said that the drain-gage gave about 14 inches.

It was difficult to estimate exactly what deduction should be made for vegetation. The authors consider that the minimum amount would average 2 inches, as in the case of downs or waste-lands, where there was very little vegetation; whereas with a heavy grain-crop or good root-crop, there might be an evaporation of 7 inches or more. Taking the average of a large area around London, partly covered with vegetation, and partly bare, over a number of seasons, they thought that between 3 and 4 inches should be deducted from the 14 inches of percolation, so leaving 10 or 11 inches. Supposing the average rainfall to be about 20 inches for the twenty years, that left about 10 or 20 inches for evaporation, both by the soil and by evaporation. *J. J. Willis, Harpenden.*

BELGIUM.

GRAND GENERAL EXHIBITION AT LEDEBERG, GHENT.

This Exhibition was remarkable, alike for the quantity and the quality of the various exhibits, and the examples of good cultivation which most of the groups afforded. Mr. Laing, of Forest Hill, represented English horticulture in the position of vice-President of the Jury; Mr. Arthur Veitch filled the post of general Secretary, and a number of English horticulturists, among whom were Messrs. Manning, Outram, and Shuttleworth, formed part of the jury, the President of which was M. Chantin, of Paris, the senior horticulturist.

General Competition.—The prize (a work of art valued at about £8), for the best miscellaneous collection, was awarded by acclamation to the Society Louis Van Houtte, *père*, of Ghent; the excellent specimens included an *Anthurium Veitchii* with twenty leaves, from over 3 to 4 feet 6 inches in length; *Dieffenbachia imperialis nobilis*, nearly 5 feet high, with six leaves about 3 feet in size; *Pandanus Van Houttei*, a single specimen of a very rare species; *Anthurium Warocqueanum*, with seven leaves about 4 feet long, deep green, and velvety; *Philodendron Schottianum*, over 6 feet through; *Anthurium Gustavi*, with five leaves, and over 3 feet through; *Alocasia Pucciana*, with five stems over 3 feet long; *Anthurium cristallinum*, 5 feet 8 inches wide, with about twenty leaves 19 inches wide; *Theophrasta macrophylla*, a remarkable plant, with a stem over 6 feet high, and with a crown measuring about 6 feet in diameter; *Phyllotanium Lindeni*, about 5 feet in diameter, with at least 200 leaves.

The 1st prize for twenty-five (miscellaneous) greenhouse plants (a first-class work of art), was awarded for a remarkable collection, sent by M. Jules De Cock, of Ledeborg. M. Edmond Van Coppenolle, of Meirelbeke, won the 1st prize, with a splendid lot of ornamental plants, including *Anthurium Leodiense*, with five flowers and seventeen leaves over

2 feet long; *Aralia Chabrieri*, 6½ feet high, furnished to the base; *Philodendron corsianum*, a fine plant with sixteen unusually large leaves; *Pothos macrocarpa*, a rare specimen; *Musa ensete*, nearly 3 feet high; *Cyathea dealbata*, with thirty large leaves; *Zamia horrida*, and *Philodendron pertusum*, very fine, with fourteen leaves measuring over 3 feet; and other plants. A very fine collection of twenty-five flowering greenhouse plants from M. Van Driessche-Leys (1st prize, a work of art, awarded by acclamation), included some very fine plants, amongst others, an *Hydrangea*, 6½ feet high, covered with bloom. The greenhouse plants with variegated foliage from Louis Van Houtte were magnificent, especially *Cyanophyllum magnificum* with a dozen leaves; *Dieffenbachia imperialis nobilis*, equally fine and taller; *Alocasia Thibauti*, *Phyllotanium magnificum*, *Schismatoglottis Rœbelini*, and *Alocasia macrorrhiza*, a peculiar plant, the foliage of which is half-white and half-green.

New Plants.—The firm, Van Houtte, showed among other plants, *Alocasia Leopoldi*, *Dianthera bullata*, *Acrostichum decoratum*, a very curious species of *Pandanus*, with leaves identical with those of *P. utilis*, but arranged in fan-like form. *Pteris Victoriae* from M. Louis Desmet, obtained the prize offered for a flowering plant which should be best for market cultivation. M. Desmet Duvivier, with his *Anthurium Duvivianum*, bore away the palm for a flowering plant.

Special Exhibits: Orchids.—A fine collection of seventy-five Orchids from M. A. A. Peeters, Brussels, won all votes. Amongst fifty-six species and varieties, the most noteworthy were *Vanda cœrulea*, with very fine flowers; *Cattleya Warszewiczii*, with twenty-two blooms; *Cattleya guttata Leopoldi*, bearing a raceme of forty-eight flowers; fine plants of *Cattleya superba splendens*, *eldorado*, *eldorado alba* and *porphyrophlebia*; *Vanda Kimballiana*, the pretty little *Oncidium præstans*, and a fine variety of *Oncidium Gardneri*; *Cypripedium regale* and *Seegerianum*, *Brassia maculata*, strong plants of *Lælia crispa* and *elegans prosiata*; other much-admired specimens were *Miltonia spectabilis* and *Mooreiana*. In addition to this fine collection, there were shown *Odontoglossums* by M. Ch. Vuylsteke, of Loochristy; *Cypripediums* by M. Jules De Cock, and also a remarkable novelty, *Cypripedium luteo-pictum*.

Palms.—Two unusually good collections of twenty-five large Palms—one from MM. Desmet Frères (1st prize), and one from the firm of Van Houtte, included specimens in full vigour and beauty. In the group from the first-named exhibitors each plant was a specimen of perfect cultivation; the following were included:—*Phoenix rupicola* (the finest and best plant), the splendid *Bismarckia nobilis*, in full health and strength; fine plants of *Kentia*, *Areca*, &c. In the collection from M. Van Houtte were included an *Areca sapida*, nearly 20 feet high, and of equal diameter, with twelve leaves—a unique and splendid specimen; *Licuala grandis*, over 6 feet high, very rare; *Phoenix tenuis*, also over 6 feet in height and breadth; *Pritchardia pacifica*, *Cocos Yatai*, *C. campestris*, &c. The twelve tall Palms from M. Edm. Van Coppenolle were most remarkable:—*Livistonia Hooqendorpii*, unusually strong and beautiful; *Cocos Gartneri*, with sixteen beautiful and smooth leaves; *Kentia rupicola*, with twelve leaves, and over 16 feet high; *Thrinax Martiana*, *Areca Baueri* and *aspida*, *Rhapis flabelliformis*, with about a hundred stems; *Glaziova insignis* and *Phoenix pumila* were noticeable. We must also mention the twelve Palms suitable for gardens during the summer from M. L. Spae-Vandermeulen, of Ghent; the new Palms, from M. Jules De Cock; and the *Washingtonia robusta*, from the same exhibitor; *Chamerops hystrix*, from M. Edm. Van Coppenolle, a rare plant of exceptional merit; the fine *Brahea dulcis*, from M. Ad. D'Haene; the fine pair of *Phoenix*, from M. Jules De Cock, a pair of *Cocos chilensis*, from Louis Van Houtte, with trunks 6½ feet in circumference, and about thirty leaves; *Cocos insignis*, from M. Van Coppenolle, and a fine pair of *Corypha australia*, from the Ghent Horticultural Society.

Ferns.—We must specially notice the fine Tree Ferns from MM. D'Haene and Desmet Frères; the herbaceous greenhouse Ferns from MM. Walleri et Fils, and M. Alb. Rigouts; *Gymnogramma chrysophylla gigantea*, over 3 feet in height and diameter; *Nephrolepis rufescens tripinnatifida*, from M. Alex. Dallièrè; six *Platyceriums*, from M. Jules De Cock; pretty *Adiantums*, from M. L. Spae-Vandermeulen; and, finally, the open-air Ferns, from MM. Walleri et Fils.

Cycads.—The collection from MM. Desmet Frères, surpassed any hitherto shown by this firm. The specimens were of unusual vigour, and all had developed close crowns of new fronds. Noteworthy were:—*Zamia caffra*, *Zamia Van Geerti*, *Macrozamia Denisoni*, *Zamia Vroomi*, and *Cycas undulata*. The Cycads from M. de Ghellinck de Walle were also very remarkable; the new *Cycas Shepherdii*, from MM. Desmet Frères, which unfolded its crown of twelve fine fronds in Europe for the first time, excited universal admiration.

Aroids.—A collection of twenty-five Aroids, from the firm Van Houtte (1st prize a work of art), was composed of specimens in full beauty. The fifteen plants of *Anthurium Scherzerianum*, in bloom, from M. Louis Desmet, was a triumph of horticulture. The 1st prize (a work of art) was awarded for this group, with the commendations and congratulations of the jury. Plants of *Lilium Harrisii* and *auratum*, of *Cocos Weddelliana*, and *Adiantum cuneatum*, veiled their bright colours with graceful foliage, the brilliant scarlet spathes producing a striking effect. The twelve specimens of *Anthurium Scherzerianum* from M. Vervsène-Verraert, of Ledeburg, and the flowering varieties of *Anthurium* from MM. Jules De Cock and Louis Desmet, were exhibits deserving the highest praise. The hybrids of *Anthurium Andreanum* from M. Louis Desmet included some unusual varieties, such as *Madame Louis Desmet*, *Président D'Haene*, and *Atrosanguineum*. *Anthurium Andreanum*, well-grown, and from the same exhibitor, bearing twenty flowers, was certainly an unusual sight. Among a number of fine spotted and marbled *Anthuriums* from M. Louis Desmet, true to the type (which is an unusual thing), we must mention *Professeur Ch. de Bosschère*, *Mme. Bertrand*, *Mme. Arthur Desmet*, *Mme. Bernard Spae*, *Secrétaire Delaruye* (a new colour), and *Modèle*. *Anthurium Veitchii* (1st prize for good cultivation by acclamation), from the firm Van Houtte, is a unique example nearly 10 feet high, and requiring a space of over 43 square feet.

Greenhouse and hardy plants and *Roses* were all well represented. The first *Prix d'Honneur* (the King's Medal), was awarded to the firm Louis Van Houtte, père; the 2nd to M. Jules De Cock; the 3rd to MM. Desmet Frères; the 4th to M. Van Coppenolle. *Ch. de B.*

NURSERY NOTES.

ANNUAL ASTERS AT EYNSFORD.

GAZING with a somewhat dreamy air at a few Asters in pots, sent up from Chiswick to the James Street Drill Hall the other day, Mr. H. Cannell sententiously remarked that he had a grand lot just then in bloom at Eynsford, and invited me to go and see them. The invitation was too tempting to be declined, and accordingly, a few days later I found myself with my energetic host, standing out on the side of the hill which slopes southwards to the Eynsford valley, looking upon what can be truly described as one of the finest shows of Asters I have seen. As under the force of the prevalent strong wind, the rich masses of coloured flowers surged to and fro, sometimes in broad sunlight, sometimes in shade, it was not possible to refuse a warm tribute of admiration for a most beautiful as well as brilliant floral spectacle. There are large breadths of Quilled, of Victoria, of Pæony-flowered, of Pompon, of Emperor, and other sections, in mixed colours, and very beautiful they are, because of the bizarre colour-

ing found in some twelve to fifteen diverse forms or markings thus interspersed; still further, the mixtures are of special interest, because these include some lines or markings not found in the selected colours, and thus furnish the ground-work of further selections of special merit. Still, the best effects are found in the big blocks or masses of colour, which hundreds of plants, all of one hue, produce. Because rather the earliest perhaps, the Pæony, or incurved-flowered, seemed, at the time of my inspection, to be the most brilliant, because the most fully in bloom; and some of the colours were, indeed, glorious under the sunlight—so telling, in fact, as to almost beggar description. Although growing, as it were, under field culture, and out on the exposed breezy hillside, yet the flowers are in all cases of splendid quality. I have never seen better under ordinary culture, or plants more profusely blooming.

Mr. Cannell is growing these Asters for seed production, and without doubt he starts in the production of home-raised seed with very fine strains, the flowers being as perfectly double as well they can be. As evidence of the variety, it may be mentioned of the Pæony flowers: Blue and white-striped; claret-purple, an intensely glorious colour; rosy-carmine, singularly beautiful; fiery scarlet, a grand colour; magenta, also very brilliant; lilac, dark blue, light blue, pure white, crimson and white striped, violet and white striped, and rosy-crimson; a splendid selection in twelve diverse colours or markings. Next came the very popular and sturdy-growing Victorias. These all have flattish reflexed flowers, and almost always take the 1st place at exhibitions. Some of the tints on these resemble those of the Pæony-flowered, but still seem diverse, because seen on the obverse sides of the petals. The deep hues of the Pæony flowers are doubtless largely due to the fact that only the under-sides of the petals are seen. In the Victorias the most striking colours were light blue, rose, flesh, white, violet, dark blue, peach, crimson, lilac, dark blue with white stripe, and rose with white stripe. The bulk of the plants in this section ranged from 13 to 14 inches high. In all cases also the respective colours were very true. Singularly charming, whether grown in the open, or in pots, or to furnish flowers for cutting, are the imbricated or pointed-petalled pompons. The flowers are of medium size, borne on fairly long stems, and the plants bloom most abundantly. More delightful Asters for bouquets can hardly be conceived. In the section are also some very glorious colours, such as blood-red, rosy-carmine, deep reddish-rose, violet, and deep blue; also charming are pure white, rose and white stripe, crimson and white, and blue and white.

The Mignon Asters specially claim attention, because of their adaptability to furnish cut flowers. The blooms are of the most perfect reflexed form, and of medium size; the plants are about 14 inches in height, and bloom profusely, furnishing a supply of flowers over a long season. The most striking colours in these are pure white, carmine, blue, red, and purple; a new variety named Snowball, very perfect in form, is but a selection from the white Mignon; still, it is a most pleasing variety, and grown for late-flowering in pots under glass, will rival white Chrysanthemums in the market. There is here at Eynsford a very early bloomer, the flowers semi-quilled, or hedgehog-like, named Pride of the Market, that is one mass of bloom. It should, by those who want white flowers early, be sown to precede the white Mignon. The dwarf Chrysanthemum, or market section, is also well represented. Some of these, the Fiery Scarlet, for example, make wonderfully effective bedding plants. The blue, purple, crimson, white, and deep scarlet forms are grown by myriads for lifting into pots for the London market, and Mr. Cannell is well provided with a fine strain. Giant Emperor Aster carries one huge reflexed flower only in several colours; whilst thus lacking the effectiveness found in branching Asters, this variety produces huge flowers for exhibition. The Washington is also a large-flowered Aster, flattish in form, and found in several colours. There are still the somewhat fine large-petalled forms now

known as the Cornel Aster, the best-known type of which is pink with white stripe, but pale blue and peach are also found in the section. The old crown-flowered, or Cocardeau also merits notice because of the white crowns or centres to the flowers. A very striking incurved Aster is Jewel, because the flowers are so perfectly ball-like that they exactly resemble a pink incurved Chrysanthemum; indeed, it would need keen discrimination to detect the difference. The Shakespeare Asters include some odd dwarf branching forms, one of which, almost black with white centre, is novel and pleasing; whilst many of this section are quaint in colour, or in the markings of the flowers, yet they fail to emulate altogether the exceeding brilliancy and beauty found in the older and more justly popular sections. Such is the wealth of material for note, taking both vegetables and flowers found at Eynsford, that great self-denial is needful to check too much scribbling. Away on the top of the hill-side, vegetables, such as Onions, Carrots, Parsnips, Celery, Peas, Beans, &c., with various varieties of the Brassica family, are seeding well, or have done so, and are now being harvested, or cleared out. The rich, quiet valley and the lofty breeze of hill sides, enable Mr. Cannell to find sites for all classes of flowers and vegetables, and from the upper heights we look down not only upon Asters, but also upon Marigolds, Lobelias, Nasturtiums, Antirrhinums in several distinct and rich colours; Stocks and Annuals, both hardy and tender, are in rich and varied profusion. As we are driven back by the narrow lanes, through a beautiful country, as fertile as beautiful, we are taken through a lane the sides of which are literallyavenued for a mile long with Damsen trees heavily laden with fruit. What would be the fate of both trees and fruits were a score or two of town-dwellers, "Arrvs" and "Arriets" of the alleys of London turned loose amidst this peaceful scene of plenty, all too well know. May this place never know of such an irruption. Back to Swanley, passing on the way that monster town of glass which Mr. Ladds has erected there, and which is of itself enough to astonish all not conversant with the Kent market trade, by extensive tree-fruit orchards, by hundreds of acres of Strawberries or Currant bushes, again to Mr. Cannell's own Kentish wonder, his literal home of flowers, where just now, excelling all others, the Begonia presents, not only outdoors but in house after house, a spectacle so beautiful and extensive, as to almost take one's breath away, and lead to wonder after the Begonia has satiated us, what other flower can possibly hope to excel or succeed it. Others may, indeed, have grand collections of Begonias, but at least Mr. Cannell has just now one of the finest and most brilliantly beautiful collections, in wondrous variety of colour, both double and single, ever seen. A. D.

VEGETABLES.

LATE BROCCOLI, VEITCH'S MODEL.

The importance of planting this crop in different parts of the garden was never more apparent than last season, as on a large plot of land, with several late kinds, we only lost a single head; they were well protected, the stems being well covered, and the plants checked late in the autumn by heeling over. A few late plants on a north border gave us some nice heads; though small they were most acceptable, owing to the great dearth of green vegetables in the late spring. I know that the large plot of any winter vegetables looks better to the eye than a lot scattered about, but it is often the case that one saves a crop by planting in different places; it is often an advantage in other ways, as the gardener can utilise vacant spaces as cleared. The best Broccoli I have grown for late cutting is Veitch's Model; it is excellent in every way, and was the only one we saved last winter, though we lost all the early-planted of this variety; but those planted late, owing to the ground being occupied with other crops, gave us small heads. The plants, very dwarf ones, were drawn from the seed-

beds, and transplanted, which greatly helped them to withstand frost, as they had no stems showing above the ground-level. This variety, being of a dwarf habit, its leaves protect it in a great measure. I also plant on poor, hard ground. I find it best to plant two or three lots, as then no difficulty exists in prolonging the Broccoli season till the Cauliflowers come in. G. Wythes, Syon House.

THE NATIONAL CARNATION AND PICOTEE SOCIETY.

The annual report of the above for 1890 is before us, from which we learn that the Society has enjoyed a prosperous year and greatly increased support, many new members having joined it. The exhibition and conference at the Royal Society's Gardens at Chiswick, was, as regarded the exhibition, the best hitherto held. Death has removed during the year two of its most prominent and active members—James Mackintosh and Shirley Hibberd—and the report contains expressions of regret and condolence.

The committee, desirous of meeting a long-felt want, invited the leading growers of Carnations and Picotees to send in lists of the best varieties in their respective classes. The lists have been arranged in order of merit; the variety obtaining the greatest number of votes being placed highest on the list:—

CARNATIONS.

<i>Scarlet Bizarres.</i> Votes.	<i>Scarlet Flakes.</i> Votes.
Robert Lord ... 15	Sportsman ... 13
Admiral Curzon ... 14	Matador ... 12
Robert Houlgrave ... 12	H. Cannell ... 12
George ... 8	Alisemond ... 10
Fred ... 7	John Ball ... 8
Arthur Medhurst ... 7	Clipper ... 4
Mars ... 5	John Whitham ... 3
Edward Adams ... 4	Richard Dean ... 3
Joseph Crossland ... 4	Figaro ... 2
<i>Crimson Bizarres.</i>	<i>Rose Flakes.</i>
Rifleman ... 14	Thalia ... 13
Master Fred ... 12	Sybil ... 13
J. D. Hextall ... 11	Rob Roy ... 9
Harrison Weir ... 11	Jessica ... 8
Jos. Lakin ... 6	John Keet ... 7
John Simonite ... 4	Cristi Galli ... 6
E. S. Dodwell ... 4	Jas. Merryweather ... 4
Wm. Bacon ... 3	Mrs. E. Wemyss ... 4
Duc d'Anmale ... 3	Lovely Mary ... 1
<i>Pink and Purple Bizarres.</i>	<i>Self-coloured.</i>
Sarah Payne ... 15	Germania ... 9
William Skirving ... 14	Purple Emperor ... 6
Squire Llewellyn ... 11	Emma Lakta ... 6
Mrs. Barlow ... 6	Governor ... 6
John Harrison ... 6	Mrs. Reynolds Hole ... 6
Purity ... 4	Rosa Celestial ... 5
Sir G. Wolsley ... 4	Annie Lakta ... 5
Mrs. Gordon ... 4	Mary Morris ... 4
Unexpected ... 4	Will Firefall ... 4
<i>Purple Flakes.</i>	Scarlet Gem ... 3
James Douglas ... 11	Old Clove ... 2
Mayor of Nottingham ... 10	Florence ... 2
George Melville ... 8	Glady ... 2
Squire Whitbourn ... 7	Black Knight ... 2
Florence Nightingale ... 7	Milvoh ... 2
Gordon Lewis ... 5	La Brillante ... 2
Dr. Foster ... 4	Celia ... 2
Sporting Lass ... 4	Ruby Castle ... 2
Oscar Wilford ... 3	Duchess of Connaught ... 2
<i>Light Red-edged.</i>	Mrs. Muir ... 2
Mrs. Gorton ... 15	Coroner ... 2
Violet Douglas ... 15	<i>Light Purple—cont.</i> Votes.
Thos. Williams ... 15	Pride of Leyton ... 3
Mrs. Bower ... 10	<i>Heavy Rose.</i>
Emily ... 5	Mrs. Payne ... 14
Elsie Grace ... 4	Mrs. Sharp ... 12
Thos. Jivens ... 4	Edith D'Ombrian ... 9
Dr. Horner ... 4	Royal Visit ... 8
Grosteen ... 3	Constance Heron ... 8
<i>Heavy Purples.</i>	Lady Louisa ... 8
Mrs. Chancellor ... 14	Mrs. Horner ... 4
Mariel ... 12	Fanny Helen ... 4
Zerlina ... 12	Mrs. Lord ... 3
Amy Robsart ... 6	<i>Light Rose or Scarlet.</i>
Picco ... 5	Favourite ... 15
Alliance ... 4	Nellie ... 11
Hilda ... 3	Ethel ... 9
Princess Dagmar ... 3	Mrs. Wood ... 6
Mrs. Summers ... 2	Mrs. Ricardo ... 6
<i>Light Purple.</i>	Laly Carrington ... 4
Clara Penon ... 14	Orlando ... 4
Ann Lord ... 13	Evelyn ... 4
Mary ... 10	Estelle ... 3
Baroness Bardett Counts ... 9	<i>Yellow Ground.</i>
Nymph ... 7	Annie Douglas ... 13
Mrs. Nicholay ... 5	Agnes Chambers ... 12
Johette ... 4	Colonial Beauty ... 8
	Almira ... 8
	Terra Cotta ... 8
	Dorothy ... 7
	Prince of Orange ... 6
	Janira ... 3
	Princess Beatrice ... 3
	Alfred Grey ... 2
	Duchess of Teck ... 2
	Tournament ... 2
	Mand Ellis ... 2
	No Plus Ultra ... 2

VARIORUM.

THE POSSIBILITIES OF BOTANY. — Professor Goodale, in his address as the retiring President of the American Association for the Advancement of Science, in speaking of the possibilities of Economic Botany, said that the methods of improving plants are already known so well that "if all our present cereals were swept out of existence, our experiment stations could probably replace them by other Grasses within half a century. New vegetables may be reasonably expected from Japan, which has already sent us many choice plants in all departments, and it is likely that some of our present vegetables, which are now much neglected, will come into greater favour and be improved. The fruits of the future will tend more and more toward becoming seedless, just as Pine-apples, Bananas, and some Oranges are now. There is no good reason why we should not have seedless Raspberries, Strawberries, and Blackberries, and also raise, by cuttings, Plums, Cherries, and Peaches, free from stones.— Garden and Forest.

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

The heavy gales of late have greatly lessened the crop of Apples on trees in open places, and much fruit is, in consequence, spoiled, fetching but very low prices. Where the best of the fallen ones were packed and sent to the markets, the prices per bushel were so miserably low that they did not pay for the labour of collecting and packing the fruit. Young trees in bearing should have the stakes and other fastenings examined, making them secure. Trees left to be rocked by the winds will, on heavy lands, soon acquire funnel-shaped holes round the stems, which, holding water, cause the trees to become stunted. The best croppers this season are the following:—Lord Grosvenor, a fine fruit for kitchen use, fit for using in the middle of the month of August; the tree is very free bearing, robust, free of canker, and, with us, surpasses Lord Suffolk, which is rather tender, and liable to canker. Gascoyne's Scarlet is a beautiful red-cheeked Apple, fit either for dessert or cooking; the fruit is large, and the tree a free grower, sometimes bearing to the ends of the shoots. Ecklinville Seedling is one of the best croppers, succeeding in almost any form, and it should be extensively grown. Duchess of Oldenburgh and old Nonsuch are both of them good, and regular croppers, and not unlike each other. Fillbasket is a regular and a free bearer, fruit large, and the tree hardy and vigorous. Stirling Castle is invaluable anywhere, having large fruit, and is a constant cropper; one of the most useful market fruits grown. Lane's Prince Albert is an excellent bearer, which crops very regularly; the growth of the tree is satisfactory, and the fruit keeps well. Northern Greeniog, one of the best keepers, is another regular cropper, and the fruit cooks well, but being green-skinned, it does not sell well. Golden Spire is a long conical fruit of good quality, and bears freely. Worcester Pearmain crops well, but it has the drawback of being liable to attacks of the grub—the caterpillars of *Carpocapsa pomonella*. Cox's Pomona seldom fails to produce fine crops of its bright-looking fruit. There are many other good varieties of Apples for general use, but those which I have mentioned have been the best at Mereworth for a number of years.

Ribston Pippin, Blenheim Orange, Cox's Orange Pippin, King of the Pippins, Summer Goldings are the finest dessert Apples. With regard to gathering fruit, it is the best plan with all but the earliest kinds to pluck the fruit when the kernels have begun to change to brown; if gathered before that change has occurred, the fruits shrivel and flavour is deficient. Now is the best time for intending planters to visit the fruit nurseries, for the purpose of seeing the fruits whilst growing, and note the varieties best suited for various purposes, so that no confusion may arise when giving orders for trees, which should be done early in the season.

Some good and useful Pears are William's Bon Chrétien, Triomphe de Vienne, Madame Treyve, Autumn Nelis, Emile d'Heyst, Wiuter Nelis, Pit-maston Duchess, Marie Louise, Doyenné du Comice, Jersey Gratioli, Louise Bonne de Jersey, Josephine de Malines, Zephirin Gregoire, all of which are regular croppers, and the fruits of good quality.

With bright and sunny weather, no time should be lost in bringing up arrears of work, the hoe being kept in constant use to destroy weeds. The fruit-room should be cleaned out, shelves scrubbed, and the walls whitewashed, and everything got in readiness for fruit gathering. *H. Markham, Mereworth Castle, Maidstone.*

THE KITCHEN GARDEN.

POTATO CROPS.—All early varieties which have been left in the ground to mature for planting purposes and storing, should be lifted as soon as the skins are set, choosing a dry day for the job. The late heavy rains will cause these early kinds to start into growth if the tubers are left any longer in the soil. Sort out the tubers proper for planting purposes, and when these are dried place them thinly on the floor or shelves in some dry and cool place. The tubers to be eaten should be stored in a cool, dark place, or they may be clamped in the open ground; the latter being preferable. Do not put too large a bulk together, or heating may take place; and to allow moisture to escape upwards leave a few holes near the apex of the clamp, to be closed with a handful of clean straw after a week has elapsed. The practice of leaving Potatos in the ground after the haulm has died down, certainly causes loss, and all the matured crops are the better for being dug up when ready. The disease among the late and main crop Potatos has become very apparent of late in the tops. I find it best to remove the haulm entirely, pulling it up with the hand, by the feet being kept close together on either side of the stem so as not to drag the tubers out of the earth; these latter may be left till the skins will no longer rub off on being touched with the fingers. The haulm should be at once carefully cleared off and burnt.

CARDOONS.—These plants should have good soakings of manure-water, and then some of the earliest plants tied up to blanch, which is done by tying the leaves close together with matting, then fastening stout brown paper in two or three thicknesses round them, and over this a covering, 2 inches thick, of straight, clean straw, tied over all. The plants should be kept erect by means of stakes. Some gardeners make use of haybands for blanching Cardoons, but these collect too much moisture, which discolours, and causes the decay of the stems. Two pieces of board may be so placed as to form a pent-house, and thus prevent water reaching the hearts of the plants. Only a few plants should be tied up at one time.

ONIONS, ETC.—The early main crop may now be pulled and dried in an airy shed or in cold frames, rather than in the open air, this year. Late crops are still green, with large, thick necks; these must be laid with the leaves bent over, which is readily done with a long rod, or by the hand. It should not be forgotten that such bulbs will not keep well, if means be not taken to ensure their ripening. Beds of Onions sown about a month ago should be weeded with small hand-hoes. In any case, weeds must be destroyed in some way, or they will become so large that it will be impossible to get rid of them without disturbing the Onions. Take every opportunity of the soil being dry to forward the earthing-up of early Celery. *C. J. Waite, Glenhurst Gardens, Esher.*

FRUITS UNDER GLASS.

STRAWBERRIES.—Those potted early from strong runners will now be full of roots, if 5-inch pots were used; they will now take weak liquid-manure to assist in building up strong crowns. The pots will also require frequently moving to prevent rooting through; also more room as growth increases, since crowding causes weak growth and elongated foliage. The runners must be taken away, going over the plants weekly, and removing useless crowns or offsets, as some of the small early-fruited kinds often throw up numerous offsets, and these tend to produce small fruits if left; indeed, if forced hard, they often only produce weak foliage. With little sunshine and much rain, newly-potted plants in larger pots will require careful management, to prevent too much water at the root before good growth has been made. We have been obliged to lay our plants on their sides for days, owing to the heavy rainfall, as, no matter how well drained, they often suffer with too much moisture before the pots are well filled with roots, and thus become sour. A good open well-drained position is of great importance in such wet seasons. I find when the plants are placed along the side of a gravel walk, with a thin layer of ashes to stand on, they frequently suffer in wet weather, and worms find their way

into the pots. I prefer strips of wood from 4 to 6 inches wide to stand the pots on, as they do not root through, and the path is not injured. Strips are soon put down and taken up, and cost little; when on ashes, it should be of a good thickness, and as firm as possible, placing a top layer of fresh ashes yearly, to prevent weeds and moss growing.

POT-VINES.—If, as advised a month ago, these were removed and placed in frames with free exposure, they may now be removed to a south wall in the open, taking care to well secure the canes to prevent the wind twisting them about; any injury to the outside bark at this date, though not visible at the time, will show itself when the sap begins to rise when forcing is commenced, and bleeding will cause much injury. If any doubt exists as to thorough ripeness of the canes, it is best to err on the right side, and keep them under glass for a time till properly matured. When placed in the open, the pots should be covered with litter, or a board in front to prevent the roots suffering, as we often get bright sunshine for some time in the autumn. Any pruning or shortening back should not be delayed after this date.

Late houses with the roots outside must be covered with some material to throw off excessive moisture. During the last few weeks much rain has fallen, causing some injury if not covered, Madresfield Court and other varieties cracking. We use galvanised corrugated iron in 12-foot lengths, 3 feet wide, and it answers admirably; it is also useful in the winter, as we place a good thickness of dry leaves over the borders and the iron on the top to prevent the leaves being blown about and to keep them dry. It is much better than manure or litter, as the latter keeps the border in a wet, cold condition. Houses that have been cleared of fruit, and the wood thoroughly ripe, may be gone over and the long growths shortened, this will admit more light and air, and plump up the buds for next year. *G. Wythes, Syon House, Brentford.*

PLANTS UNDER GLASS.

STOVE PLANTS, YOUNG STOCK.—Cuttings of the different kinds of stove flowering plants, which were put in a short time back, will now be ready for potting off, as it is always advisable that the cuttings, so soon as they are well rooted, should be potted at once, so that the young plants may have time to get established before the winter. It is a great advantage to strike cuttings of many kinds of stove plants in the late summer, as they then gain sufficient size and strength to admit of their blooming better and much earlier than if struck in the spring. Young stock of such plants as Clerodendrons, both the climbing and bushy varieties, Allamandas, Dipladenias, and Francisceas, may be grown on slowly during the winter. It is not at all necessary that they should rest, as is sometimes advocated; they are much better when kept moving gently until the spring, and it will be found that they will grow more freely when subjected to more heat. Place the plants during the winter in a light position, and do not allow the temperature to fall too low. Young stocks of Crotons, Dracenas, Aralias, &c., which were propagated at the same time as the above, will now require repotting. Use smaller pots than it would be advisable to give them earlier in the season. A good compost for these plants is a sound loam, adding sufficient sand to keep it open.

When the young stock of Crotons, which are required to form specimens, have started into growth, they should have their points pinched out, so that they may be well furnished with side-shoots from the bottom, as many of the new introductions are inclined, more or less, to grow tall. Keep these growing slowly through the winter, by allowing them sufficient warmth, and a light position near the glass.

SCUTELLARIA MOCCINIANA.—Cuttings of these put in at the present time will make useful decorative plants for flowering during the winter and spring months. In taking off the cuttings from the old plants, choose the most robust of them, as they in their turn will make the strongest plants. Either insert the cuttings singly in small pots, or three or four round the edge of a 4-inch pot, using a sandy compost, afterwards plunging them in a propagating-frame. When the cuttings are well rooted, which will take about three weeks, pot off at once into 5-inch pots, using a compost of good loam, leaf-mould, and sand, in sufficient quantity to keep it porous. When well established, pinch out the centre of the shoots, which will cause side-shoots to break, and when they have grown some three

weeks, take the point out of them; these will give sufficient shoots to furnish the plants. Pot off finally into 6 or 7-inch pots, using a similar compost to that recommended above.

From the time the cuttings are rooted until they are in bloom, keep them in a light position near the glass, syringe freely, and assist with weak manure-water when the pots are filled with roots. Remove the plants to a cooler house when in bloom, and they will last for a considerable time.

ALOCASIA MACRORHIZA VARIEGATA.—When well-grown, and the foliage well-coloured, this is undoubtedly a most beautiful plant. It may be increased either at the present time or in the spring; old specimens generally have a quantity of suckers springing up from the base. Those which have all white foliage should be discarded, as these cannot grow into plants; but choose those that are well-coloured, and have four or five leaves. Take them off with as many roots as possible, place them singly in pots, according to the size of the young plants; 5-inch pots will be large enough. Two parts good rich loam to one of decayed manure and sand will form a suitable compost for them. After they are potted, place them in a propagating frame for several weeks, until they begin to throw out fresh roots, and to keep the leaves from flagging, afterwards giving them more air. Allow plenty of drainage, as, unlike most of the other species of Alocasias, which are surface-rooting plants, the roots of this variety descend to the bottom of the pot, and require a plentiful supply of water during the growing season. If large specimens are required, larger pots must be used; the plants must not be allowed to suffer for want of root-space. Plants propagated at this season, when well grown, should attain their full size during the following summer. *R. Milner, Penrice Castle, Swansea.*

THE ORCHID HOUSES.

THE COOL HOUSE.—An effort should be made to get the repotting of everything that requires it done as soon as possible. The night dews are now very heavy, house and plants are loaded with moisture; this tends to keep the foliage firm until the young roots get a hold upon the new potting compost. Large plants of *Odontoglossum crispum* that are sending up flower-spikes will be the better, and the spikes ripen more thoroughly, if placed as near the glass as possible. Our own are hung up over the walks, so that they may be taken down and examined daily. Before hanging up, it is advisable to dip the plant for a few minutes in tepid water, and watch carefully for any insect pests that may be within. When this precaution is taken, little trouble is likely to occur afterwards. *Masdevallia racemosa* Crossi is a brilliant little gem at this season, when seen with a large number of flowers upon it; it is also of free growth, and does well in about one part of peat to three of sphagnum. *Masdevallia tovarensis* which were brought into the cool house after flowering, should now be removed to the intermediate division. It is really unsafe to longer delay it, as this plant is very likely to drop its leaves quickly if left in the moist atmosphere in which the *Odontoglossums* do best, especially so if a little too much water should be given. *Masdevallia chimera* and its varieties will now do satisfactorily if taken into a little more warmth; this is a magnificent plant to grow, being seldom out of flower. It does well when planted in boat-shaped baskets, and hung up so that the full beauty of the flowers are easily seen; red-spider is its worst enemy, and frequent dipping and sponging of the leaves are necessary to keep it clean.

INTERMEDIATE-HOUSE.—*Pleione lagenaria* will have finished the last growth, and should be taken and treated to a baking in the sun as previously advised, but on no account should the plants be allowed to become quite dry. *Odontoglossum grande* is now opening its flowers; this is one of the very best Orchids for autumn flowering, being large and showy, and of easy culture. It requires little water at any season, but after flowering, and the present half-made pseudobulbs are properly matured, no water whatever will be required, unless it is seen that the back bulbs are showing signs of shrivelling. *Vanda Kimballiana* is a lovely object in the house, and as the plants do not all come in at the same time promises to continue so for some months. *Miltonia vexillaria* should continue to receive a good syringing morning and early in the afternoon, with a good circulation of air about them; temperature according to last Calendar. *A. G. Catt, Parkfield, Worcester.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY, SEPT. 14—Eastbourne.

TUESDAY, SEPT. 15—Sittingbourne.

SALES.

MONDAY, SEPT. 14 { Annual Trade Sale of Stove and Greenhouse Plants, at the Dyson's Lane Nursery, Upper Edmonton, by Messrs. Protheroe & Morris
Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, SEPT. 15 { Annual Trade Sale of Stove and Greenhouse Plants, at the Burnt Ash Lane Nurseries, Lee, by Messrs. Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 16 { Annual Trade Sale of Stove and Greenhouse Plants, at the Lea Bridge Road Nurseries, Leyton, E., by Messrs. Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.

THURSDAY, SEPT. 17 { Annual Trade Sale of Stove and Greenhouse Plants, at the Brimsdown Nurseries, Enfield Highway, by Messrs. Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 18 { Annual Trade Sale of Stove and Greenhouse Plants, at the Moat Nursery, East Grinstead, by Messrs. Protheroe & Morris.
Important Sale of Orchids, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 19 { Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—57°.6.

At Edinburgh. THE international show of the Royal Caledonian Horticultural Society is remarkable, among other features, for the immense number of the entries, and for the general excellence of the various objects shown. Taking those generally recognised as difficult to grow first, we cannot but remark the great number of entries in the Grape classes, and the marvellous manner in which finish has been put on black kinds by the northern gardener, and the generally large size of bunch and berry. There were remarkably few instances in which colour was bad.

Without the shadow of doubt, as the report of the exhibition in another column will show, the lion's share of the awards remains with our Scottish brethren, thus affording proof of their skill as cultivators, and of the suitability of their soil, and perhaps the length of the summer day, which more than compensates for the greater intensity of the solar heat in southern parts of this island.

As befits the occasion, the highest award for finish went to Mr. MACHATTIE, gardener to the Marquis of LOTHIAN. As regards numbers,

black varieties were a long way in advance of white ones, whether of Scotch or English origin; but in localising the awards it was apparent that Scotland was an easy winner. She took first honours for eight bunches, and fine ones they were; for six, and was also first in almost every small competition. The heaviest bunch of white Grapes was one of the Raisin de Calabre, shown by Mr. MORRISON, of Archerfield. The heaviest black—a Gros Colmar, weighed 12½ lb.—was produced by Mr. MATTISON, of Currie. The heaviest bunch of black Alicante Grapes was grown by Mr. GREEN, the Marquis of TWEEDDALE'S gardener.

Grapes which have been raised in recent years were few, and the highest prize was taken amongst black varieties by a cross between Duke of Buccleuch and Gros Guillaume. Growers of Grapes in Jersey, Isle of Wight, Suffolk, Cumberland (not a remarkably sunny land), and Somerset, were enabled to give their Muscats and other white kinds that desirable golden tint so indicative of thorough ripening, to a greater degree than the gardeners north of the Tweed.

Pine-apples are, as of yore, grown more commonly in Scotch gardens than further south, and the examples shown would reflect credit on the exhibitor wherever he resided. The fruits were shown on the plants, and also cut.

Bush fruits are good and abundant; unfortunately the exhibitors have failed to give names to their exhibits in many instances, and we found it impossible in all cases to recognise them. Elton Pine Strawberry is still thought something of, and we note a few capital dishes of it.

A Red Currant, called "Fail me Never," and another, Hay's Prolific, are remarkable for the fine size of their berries.

Apples from Kent, Sussex, Herefordshire, and other parts of the South, are shown in large numbers by many enterprising nurserymen, and Scottish fruit is far from being scarce or poor of quality.

It was noted that the pot-culture of the Apple, Pear, and stone fruits is of necessity adopted in certain parts of northern Britain, and well-loaded miniature trees meet the eye at various parts of the hall.

In flowers, we find a predominance of the florist's flowers—of Pansies, for which the climate is so favourable, although this season it was the exception; Hollyhocks, again reviving after the scare of some years ago; hardy herbaceous perennials, Marigolds, German, or, rather, China Asters; Gladioli, including those beautiful things of M. LEMOLNE'S raising; Dahlias, of all sections; and Carnations and Picotees.

"Down South," excepting near Bath, the culture of the Fuchsia has fallen away; but here are to be found beautifully-flowered plants from 6 to 8 feet high, and clothed with foliage and blossom down to the pot. The tuberous Begonia has found a congenial home in northern gardens, and it is running the Pelargonium hard for the first place. Some fine collections of plants and cut blooms may be observed, of these plants hardy Chrysanthemums are useful, if just a little bit unseasonable, put in appearance in some quantity, and are so good that many who have seen them will be induced to take up their culture. Vallota purpurea is a plant we are glad to note is well done by Scottish growers. Some of the pots full of it are of great size.

General decorative plants, as Palms, Crotons, Ferns, and Dracenas are much grown. The Crotons of Messrs. IRELAND and THOMSON are

particularly effective, being young, vigorous, and of beautiful tints. The time of year is unfavourable for large displays of Orchids, but still there is a fair quantity of Odontoglossums Lycastes, Dendrobium Dearii, and Cypripediums, the nurserymen's tables having the majority of these. The Lily as an autumn flower has few, if any equals in some of its species: we may mention *L. auratum*, in its several varieties, and *L. speciosum*, red and white, and these are very abundant, and also well-flowered.

Specimen flowering plants are good, if there are not many of them; and the Ericas, Ixoras, Diplacus, Lapagerias, &c., were exceptionally fine plants, as were exotic and hardy Ferns.

Vegetables are found of superlative excellence in Northern gardens, and this fact is well brought out at this show, for finer Peas, Beans, Cauliflowers, Cabbages, Savoys, Lettuces, Onions, we have rarely seen. Onions are wonderfully fine of their kind. The same may be said of the various roots, including Potatoes, which are shown in enormous quantities, and of a remarkably even degree of excellence.

The manner in which Parsley is shown in pots, as grown, we should say, for some months, is excellent, and worth adopting generally.

Large Conifers, a prominent feature at some previous shows, show a falling off in numbers and in the matter of rarity; and collections of hardy shrubs are non-existent, perhaps no great loss, when so many fine things can be noted in the open ground in nurseries.

On the opening day, the attendance of the public was fairly good, but the immense building, was at no time crowded.

The opening ceremony, in the absence of the Marquis of LOTHIAN, was performed by Viscount MELVILLE; whilst the dinner was presided over by Sir JAMES GIBSON CRAIG, with Mr. THOMSON, of Clovenfords, and Mr. CHARLES STEWART, the Secretary, as croupiers. Naturally the members of the Caledonian were warmly congratulated on their success.

THE ROYAL HORTICULTURAL SOCIETY.—The meeting of the Royal Horticultural Society on Tuesday last, was naturally not so well attended as some others, many of the Fellows being drafted off north of the Tweed, while holiday-time accounted for many defections. Nevertheless, an excellent and very interesting meeting was held. In another column we note the principal details, but here we cannot refrain from noting the truly marvellous flower of *Aristolochia grandiflora* from Kew, measuring 20 by 16 ins., exclusive of the slender tail which measured 3 ft., and the sight of which recalled the passage from Humboldt in which he mentions the Indian boys on the Magdalena river placing the flowers on their heads as caps. Very ornamental truly, and boys are not very sensitive to evil odours. The use of the long tail to the flower was the subject of comment, the general impression being that, like the similar appendage to the spathe of some of the Arisemas, it acted as a pathway for insects, who fertilise the flower, but find themselves entrapped by the beautiful-looking but fiercely-pointed hairs, admitting ingress, but forbidding egress. Another most interesting exhibit was made by Messrs. VERRILL, in the shape of *Picea Omorica*, the Servian Spruce, figured in our columns in March 8, 1884. As a decorative Spruce it is not noteworthy, but its botanical interest is great, as, although Servian and Bosnian, it is very nearly allied to the *Abies Meuziesii* of North-West America, and to *A. ajanensis* of far-off Japan, while it is also the living representative of a fossil species found in the Miocene formations. If we were to meet some of the "extinct animals" at the Crystal Palace walking about in the life, the case would be analogous to that of this Servian Spruce, to which a Botanical

Certificate was most fittingly awarded. Mr. PHIP-REN deserves credit for his arrangement of Dahlias, but we trust he will not be led into the fatal mistake of reverting to that formality from which he has broken away. Similarly, we trust Mr. KELWAY will not favour those very densely-crowded spikes of Gladiolus which find favour in some quarters. It is far better that each flower should be allowed to show itself freely, and not be encumbered and overlapped by its neighbours. Mr. LOWE's collection of Ferns was truly remarkable; many are of high decorative value, whilst others are monstrosities of great interest botanically, but appreciated rather by experts than by the populace. The same remark applies to the collection exhibited by Mr. C. T. DRURY, which was so good that he need feel no dissatisfaction at being surpassed by Mr. Lowe.

— The exhibition of British Ferns was, indeed, well calculated to support the contention that even the rarest and most beautiful exotic Ferns find worthy rivals among the innumerable abnormal forms of our indigenous species. If exceptions be cited, such as the marvellous *Adiantum Farleyense*, it is easy to restore the balance by pointing to charming types of beautiful variation which so far have found no parallels in exotic species. A striking instance of this was exhibited by Mr. C. T. DRURY, in the form of a revolute *Athyrium* (*A. revolvens*), found recently by him in Scotland, in which the frond tip and the pinnæ or side divisions are beautifully curled inwards and twisted symmetrically like ringlets. That beautiful New Zealand Filmy Fern, *Todea superba*, has long held the foremost place in redundancy of delicate moss-like cuttings; but in the examples shown of the *Polystichum* known as Jones's "densum," and a new plumose *Athyrium* (*A. f. f. plumosum Druryi*), we have two very close approaches to it in its own special line. Mr. E. J. LOWE's main collection consisted of over one hundred splendidly-grown specimen plants, the most striking of which were several forms of the frilled Hartstongue (*S. v. crispum*), of great beauty, those labelled *Willisii* and *Cowburnii* being especially valuable from the decorative point of view. Among the Shield Ferns (*Polystichum aculeatum* and *angulare*), there were several huge plants, in which the grandiceps form of heavy terminal crests seemed to have reached its extreme, giving an aspect of general sameness to some which was by no means borne out in detail. Some of these plants were of mixed parentage, both the above-named species being combined, and Mr. Lowe's hybrid attracted a good deal of attention on this account, as it represented precisely the abnormally narrow cruciate form of one species, with the hard spiny texture and make of the other. In this connection, Mr. Lowe had a special exhibit in another part of the Hall of a score or so of most remarkably crossed *Scolopendrium* seedlings, recorded by him as the conjoined progeny of four different varieties, and it could not be denied that in the majority the distinct characters of the four forms named were evident in one and the same plant. How this comes about is a biological mystery, which must be left for the future to solve. In the meantime the interesting family was awarded a Silver Medal, and hopes were expressed that it might come to town again later for judgment when the individuals were grown up. Mr. C. T. DRURY's exhibit embraced an interesting example of transitional variation in the use of *Lastrea montana* var. *cristata* gracile, bearing several fronds of quite different types of foliage and cresting to the wild ones. This seemed to consist in partial reversion to the normal by the entire obliteration of the "gracile" character, coupled with a considerable augmentation of the crests, from being flatly digitate, have become corymbiferous. One frond on a large plant appeared three years ago, and they have gradually increased in number each year, until now they are about half and half. A grand plant of *Blechnum spicans* var. *plumosum*, Airey, showed that this generally-neglected species can rival its relatives in size as well as in delicacy of cutting.

The collection of Plums from Messrs. VEITCH was also worth special notice, but these and other exhibits are dealt with in another column. In the afternoon, Mr. GEORGE PAUL addressed the meeting on "Bog and Water Plants." Those who have seen the charmingly interesting bog garden at High Beech, will know that Mr. PAUL speaks as an expert of experts on such as on many other matters.

FRUIT CONGRESS AT MANCHESTER, OCTOBER 21 AND 22.—The subjects to be treated on this occasion are:—Mr. BAILLIE, of Chester, "The Fruit-Growing Movement: Present Day Features and Prospects;" Mr. CHEAL, of Crawley, Sussex, "The Condition, Preparation, and After-Treatment of the Soil for Fruit Culture;" Mr. S. T. WRIGHT, of Hereford, "Fruit Growing for Profit;" Mr. CUMPTON, of Madresfield, "The Raising, Budding, Grafting, and Pruning of Apple Trees for Orchard and Estate Planting;" Mr. T. F. RIVERS, of Sawbridgeworth, "Orchard House Culture;" Mr. EDWARD LUCKHURST, of Romford, "The Importance of Early Planting and Shelter in Fruit Culture." In connection with this Congress, the following letter has been received from Mr. GLADSTONE:—

"HAWARDEN, August 25, 1891.

"I will not withhold the expression of my good wishes for the fortune and effect of the meeting you are to hold in October, but it will, as I hope, have the support of those who are much better entitled to speak with authority. For many years, through the activity of the press, the humble advice given by me locally to our cottagers and farmers has become an exposition to the country at large which I was hardly entitled to deliver, and for which I have naturally enough been made the subject of witty animadversion.

"I have, however, a very strong conviction that the work which you have in hand is a great and beneficial work—that there is a great commercial void which ought to be filled by British skill and labour, and that the extension of what we may term the small culture, in all its branches, will produce very considerable moral and social as well as economical benefits.

"I am, dear Sir,

"Yours very faithfully,

"W. E. GLADSTONE."

"MR. BAUCE FINDLAY."

THE AMERICAN APPLE CROP.—We learn from the *Journal of the New England Homestead*, that the American Apple crop will be better this season than last year, when it was less than in any year since 1883. According to special reports from the commercial Apple-growing regions of the United States and Canada, the variety of Baldwins will be scarce, and prices for the best brands of winter Apples will, it is believed, range from two to four dollars per barrel at New York, in the course of the winter. It is predicted that the United States' surplus for exports will be 235,000 barrels, and Canada 200,000, making a total of 435,000 barrels, or about the same as last year; against 681,000 barrels of the 1880 crop, and 1,401,382 barrels of the 1888 crop. As the English crop is short, it is thought that the prospects are excellent for American Apples in this country, which takes ninety-five per cent. of American exports. Apples are comparatively light in the central and western States, the commercial orchards of Arkansas and Missouri having more than they can do to supply interior markets. There is a heavy yield of all fall fruits—Peaches, Pears, Grapes, and Apples; but as soon as these are out of the way, the *Homestead* expects profitable prices. If Californian shipments of her fine crops of all fruits are delayed until that time, they will make almost as good prices as were reported last year, which caused unprecedented prosperity to the industry on the Pacific slope.

COPPER SALTS AS REMEDIES FOR THE POTATO BLIGHT.—The fact that solution of blue vitriol has been successfully used in combating the *Peronospora viticola*, or Vine disease, in France, has suggested its employment in checking or exterminating the Potato blight. So many experimenters have reported favourably upon the application of copper salts, that we may now regard their success as assured. Three mixtures are especially recommended for application, namely:—(1) Bouillie Bordelaise, or the original Bordeaux mixture. This is prepared as follows: Dissolve 8 lb. of pure sulphate of copper in 10 gallons of water, by heating up a

portion of the water, and after all the salt is dissolved, adding the remainder cold. In another vessel, 15 lb. of good burnt lime (not slaked) are mixed with 3 gallons of water, and carefully stirred till all the lumps disappear. The creamy mixture is now poured into the copper sulphate solution. (2) Reduced Bordeaux mixture. This is prepared in the same way, but the quantities are reduced to only 3 lb. of copper sulphate and 3 lb. of quicklime to 10 gallons of water. (3) Copper-soda solution. This should contain 2 lb. of copper sulphate and 3 lb. of soda in 10 gallons of water. The salts are first dissolved in warm water, and then the remainder of the latter added cold. It should be observed that only the very best quicklime should be employed. Inattention to this point has often given less satisfactory results with mixtures No. 1 and 2 than with No. 3. These remedies should be applied two or three times in a season, the first time as soon as the Potatoes come out of the ground, and the plants are about 2 or 3 inches high. The second application is made when the plants are near maturity, say, one month before the crop is harvested. The third application may be applied at discretion. A good water-sprinkler, syringe, or spray machine, is required for applying these remedies, and care should be taken that the leaves are well covered.

ARTIFICIAL RAIN.—In a Bill laid before the United States Senate, provision is made for granting 3000 dollars to a group of agriculturists for the purpose of conducting experiments on the artificial production of rain. The nominal head of this committee is Mr. REISK, the Secretary for Agriculture, but the soul of the movement is Senator FARWELL, who for many years has been the untiring champion of the theory that by explosion at a moderate height the moisture of the air can be condensed and converted into rain. Consequently, experiments are being conducted on the high steppes between Colorado and Kansas. The plan of the engineers is to send up dynamite by a paper balloon, the quantity sent up each time being 150 lb., of which separate parcels of 20 lb. are let down at different heights, and exploded by means of electric wires. By a series of explosions they expect to produce rain showers which will extend in all directions. The best has yet to come. In case of success, an American Artificial Rain Company will be formed, and the optimists believe that the barren prairies will be converted in fertile country. In scientific circles the experiments are supported less sanguinely, the probable results being not denied, but the doubt is expressed whether the benefits will cover the cost.

VISIT OF THE FRUITERERS' COMPANY TO THE CRAWLEY NURSERIES.—Saturday last was selected for a visit to Messrs. CHEAL & SONS' establishment. The party, to the number of eighteen, including several ladies, arrived at Three Bridges station, and were conveyed in brakes to the Nurseries. They at once commenced a tour of the grounds, in the first place inspecting the various ways of training fruit upon the cordon system. These trees, trained over arches, wire espaliers, wooden fences and walls, were all carrying heavy crops of fruit. Much interest was taken in this system of training, in which Messrs. CHEAL were pioneers, and the quantity of fruit that can be raised in a small space was seen to be enormous. One piece of wire espalier covered with Apples trained in diamond pattern attracted special attention, covered, as it was with a crop of many-coloured Apples. Some of the fruiting trees near the house were next visited, where large standard trees of Apples, Pears, and Plums were heavily laden, and, indeed, in some cases literally breaking down with fruit. From here they proceeded to the open quarters, where a number of bush Apples are planted out for fruiting. These are on the paradise stock, and comprise a collection of over seventy varieties. Out of these, there were some fifteen or twenty varieties that stood out conspicuously for their fruiting qualities, and this plantation practically demonstrated what has been so

often recommended at the recent fruit conferences, to plant only a select number of the free-cropping varieties. To enumerate a few that were here carrying magnificent crops, we noted Stirling Castle, Lane's Prince Albert, Worcester Pearmain, Potts' Seedling, Professor, Yorkshire Beauty, Cox's Orange Pippin, Lord Grosvenor, Peasgood's Non-such, Duchess of Oldenburgh, King of the Pippins, Keswick Codlin, The Queen, and Bismarck. From here they proceeded to the open nursery quarters, until they again reached the other portions of the nursery devoted to fruit trees. Here were thousands of trees of various ages, and apparently in the most vigorous health, of Apples, Pears, Plums, Cherries, &c., and here the various characteristics and differences were pointed out and noted, of Apples grafted and budded upon the Paradise and Crab stocks, and the effects of the different stocks was explained in accelerating or prolonging the fruiting period. The visitors were particularly impressed with the spectacle of young trees on the Paradise stock, only two or three years old, laden and borne down with fine samples of fruit, and this not in solitary instances, but upon every tree for row after row. The company were interested in watching the operation of budding the fruit stocks, which was in full progress at the time of the visit, as also the pruning and training of wall trees. Returning to the homestead, the room was inspected where the fruit is stored, and from which Messrs. CHEAL have exhibited such remarkably fine fruit at late periods in the season, and which was specially constructed for the purpose. The glass was next visited, and a cool orchard-house, devoted to Pears trained as cordons up the roof, was a beautiful sight, and many of the varieties were remarkably fine. Messrs. CHEAL commenced twenty years ago to form the nursery on ordinary agricultural land, and by thorough drainings, deep tillage, and good cultivation, they have been able to produce the trees and the fruit that they have now; and we might mention one fact that is of interest to the Fruiterers' Company, and in connection with the present movement for the higher cultivation of the land, that whereas the land had not employed five hands, it now sustained more than ten times that number, which was of importance from a national point of view.

ROSE EXHIBITORS. Some stir is being made in Rose-growing circles about the disadvantages under which small growers labour in comparison with large ones, and various schemes have been devised to meet the case. No doubt, the National Rose Society will be able to arrange a compromise, but in the meantime, as a matter of principle, exhibiting and competing benefit the individual more than the cause, and while not ignoring the foibles and fancies of human nature, and of exhibitors in particular, ought not our sympathies, or at any rate those of the corporate Society, to be with the latter, rather than with the former?

FUNGUS FORAY.—The September excursion of the Yorkshire Naturalists' Union is arranged for Wednesday and Thursday next, September 16 and 17, at Doncaster, and will be chiefly devoted to a Fungus foray—under the superintendence of Mr. G. MASSEE, of Kew. The districts selected for investigation are the good old Edlington and Wadworth Woods, &c., which have never been explored for fungi. There will be a fungus show at Glyn Hotel, Doncaster, and mycologists from any part of Britain will be heartily welcomed. Mr. M. H. STILES, Frenchgate, Doncaster, will be glad to supply particulars.

NEWCASTLE HORTICULTURAL SOCIETY.—In response to the appeal of the Mayor of Newcastle for subscriptions to meet the liabilities incurred by the disastrous gale announced in our last issue, the public have subscribed most handsomely, £525 being forthcoming up to Saturday, September 5. This speaks well for the love of horticulture in the district. We trust the future efforts of the Society may be crowned with success.

HOME CORRESPONDENCE.

RHUS TOXICODENDRON.—We should feel greatly obliged by your giving us, in the next issue of the *Gardeners' Chronicle*, the correct name of the enclosed, of which we have a large plant now climbing on a south wall. *Ampelopsis japonica* was the name given to us with the plant, but we think it is a species of *Rhus*. About two months ago, one of our men was propagating some, and a few days afterwards he was taken ill with what appeared to be a very serious attack of erysipelas; he recovered from the attack, and commenced work, and again made a lot of cuttings from the same plant. Shortly afterwards, he was again seized with a similar attack, and is now lying in a serious condition; head, arms, and legs very much swollen, and showing all the symptoms of blood-poisoning, for which the doctor is now treating him. There are several plants in this neighbourhood. The leaves in the autumn turn a beautiful orange-scarlet, similar to *Ampelopsis Veitchii*. P. & Co. [The plant is *Rhus toxicodendron*, var. *radicans*, a very poisonous plant. It was originally sent out as *Ampelopsis japonica*, but the mistake was happily soon found out. Ep.]

SOCIETIES.

ROYAL HORTICULTURAL.

Fruit Committee.

TUESDAY, Sept. 8.—Present: Philip Crowley, Esq., in the chair; also Messrs. W. Warren, J. Wright, J. W. Bates, A. Dean, G. Norman, J. Willard, R. Hogg, R. D. Blackburn, H. Weir, T. F. Rivers, A. H. Pearson, H. Balderson.

A Silver Banksian Medal was awarded to Messrs. James Veitch & Son, Chelsea, for the collection of forty dishes of Plums, comprising all the best kinds, such as Kirke's, Jefferson, Czar, Denniston's Superb, Early Transparent Gage, Brandy Gage, the three latter of good flavour.

Award of Merit for Halstead Favourite Melon to T. F. B. Atkins, Esq., Halstead Place, Sevenoaks, gr., Mr. A. Gibson; it is a green-flesh variety with yellow reticulated skin and fine aroma.

Cultural Commendation to Philip Crowley, Esq., Waddon House (gr., Mr. W. King), for nineteen fruits of Louis Bonne Pears grown on single tree in a 10-inch pot, the fruits were of medium size, and rich yellow colour with crimson spots. He also showed two lots of Jefferson Plum from same tree, one double the size of the other, and better coloured, the difference being due to constriction of bark, causing the fruits above it to swell as in the process of ringing.

Cultural Commendation to W. Roupell, Esq., Harvey Lodge, Roupell Park, S.W., for large well-coloured fruits of Lord Sullfield, Bictingheimer, and Duchesse d'Oldenburgh Apples, grown in the open, within 5 miles of Charing Cross.

Vote of thanks to Messrs. Jacob Wrench & Sons, 139, King William Street, City, for a basket of Parsley, with thick beautifully curled foliage.

Vote of thanks to Mr. Whiteley, Hillingdon Nursery (Manager, Mr. Thomas Godfrey), for dish of Hillingdon Favourite Tomato, smooth clear skin, bright scarlet, large.

Orchid Committee.

Present: Dr. M. T. Masters in the chair; James O'Brien, Sec.; and Messrs. E. Hill, H. Ballantine, A. H. Smee, T. B. Haywood, and C. Pilcher.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), again exhibited, in fine condition, the *Laelia elegans* Bleheimensis, which received an Award of Merit at the last meeting; also *L. elegans* Turneri atrorubens, a form with a very dark front lobe to the labellum; *L. c. T. Stand Hall* var., with sepals and petals paler than in the ordinary form; *Odotoglossum Harryanum*, and *Saccolabium Blamei*, named *longeracemosum*, which bore no distinctive feature.

Baron Schroder, The Dell, Egham (gr., Mr. H. Ballantine), sent the only really remarkable plant of the meeting, viz., *Miltonia Biantii* Lubbersiana, a grand example of the genus. It had two stout spikes of many large flowers; the sepals and petals nearly equal in width, whitish-lilac, profusely blotched with irregular rosy-lilac bars. The large

flat labellum is light-purple at the base, fading off to nearly white in front, and with two blotched lines of purple on each side of the crest. A First-class Certificate was unanimously awarded to this fine exhibit.

Messrs. Hugh Low & Co., The Nurseries, Clapton, staged a good example of *Vanda Kimballiana*, with many spikes; *Cattleya Gaskelliana* albens, *Catasetum fimbriatum*, and a new rich yellow form of *Mormodes buccinator aurea*.

Messrs. F. Sander & Co., St. Albans, exhibited *Laelia elegans* Robinsoniana, a dwarf and richly-coloured form of the Turneri section; also *L. e. Marlboroughensis*, equally good; and a fine *L. e. Turneri*; also *Dendrobium undulatum*, *Vanda cœrulea*, the pretty pink and orange *Cattleya crocata rosea*, and an extraordinary small form of *Cattleya granulosa* named *C. g. Dianceana*. The flowers of this form are much smaller than those of the type; sepals and petals green and unspotted, the side lobes of the lip are white, and the middle lobe reduced to a narrow, warded, rose-coloured blade; the column is yellow, tipped with purple.

Messrs. Charlesworth, Shuttleworth, & Co., of Heaton, Bradford, sent five plants of their importation of *Oncidium macranthum*, the flower-spikes of some of which were erect and only a few inches in height, and which it is hoped will remain constant, or at least with much shorter spikes than usual. *Drewett* (O. *Drewett*, Esq., Riding-Mill-on-Tyne (gr., Mr. A. J. Keeling), sent a flower of his *Cypripedium Beatrice* × (*Lowi* × *Boxalli*), and of *C. Eyermanianum* × *Drewett's* var. (*Barbatum nigrum* × *Spicerianum*).

C. J. Lucas, Esq., Warnham Court, Horsham, exhibited a finely-flowered plant of the white *Angraecum articulatum*, for which a Cultural Commendation was awarded; and W. Wright, Esq., The Grange, Denmark Hill (gr., Mr. G. Parrot), sent a plant in flower of *Catasetum fimbriatum* (male) and another of the same species, with two female flowers, with elongated helmet-shaped labellum, and two and two buds (male) of the type usually seen—a most interesting exhibit.

Floral Committee.

Present: William Marshall, Esq., in the chair; Messrs. G. Paul, J. Fraser, C. T. Drury, H. B. May, R. Dean, J. T. Poe, G. Phippen, C. Noble, W. Watson, and Dr. Masters.

From the Royal Gardens, Kew, some interesting plants were exhibited:—*Aristolochia grandiflora* (syn. *A. gigas*), Guatemala; the flat portion of perianth measured 16 inches by 20, with a pendulous filament 3 feet long; it is reticulated, white, and rich brown, the centre rich velvety-purple, interior of tubelined with reflexed hairs; odour very powerful. Leaves 6 to 8 inches long, ovate cordate. *Clematis Stanleyi*, from Transvaal: the whole plant is covered with silvery pubescence; leaves pinnate, leaflets pinnatifid. Flowers lilac-pink, 1½ inch across, stamens yellow. *Ixora macrothyrsa* (syn. *I. Duffii*), Sumatra; flower-head about 8 inches in diameter, semi-globose, vermilion-scarlet; foliage massive. *Mucuna atropurpurea*, India and Malacca; a climber with ternate foliage, leaflets obliquely ovate; flowers papilionaceous, 2 inches long, in pendulous racemes of about thirty flowers, hood-shaped, standard and horizontal, black-purple, carina red-purple. *Solandra grandiflora*, Tropical America; flowers 10 inches long, calyx-tube triangular, three-lobed; corolla trumpet-shaped, lobes recurved, edge fimbriated, colour from pale yellow to buff, with chocolate bars in the interior.

A Bronze Banksian Medal was awarded to J. Veitch & Sons, for *Hydrangea paniculata*, with large pyramidal heads, about 8 inches deep, of cream-coloured flowers and pink buds, and other hardy plants; also botanical Certificates for *Picea Omorika* (South-east Europe). The plant was 4 feet high, this season's leader being 18 inches long; leaves deep green above, glaucous below. They also exhibited nice blooms of *Lilium auratum virginale*, *L. a. platyphyllum*, and *L. a. rubro vittatum*, as well as baskets of well-grown *Francoa ramosa* (Chili), full of flower.

Messrs. Paul & Son, Broxbourne, Herts, had a collection of bog plants, including good *Sarracenia purpurea*, *Spiraea japonica compacta*, *Carex folliculata*, *Liatris pycnostachya*, &c.

The First prize for a collection of British Ferns and their varieties was awarded to E. J. Lowe, Esq., F.R.S., Shirenewton Hall, Chesham, for an interesting and beautiful collection, thus securing the Silver Cup.

First-class Certificates were awarded for the following Ferns:—*Scolopendrium vulgare* var. *Moonæ*; fronds lanceolate, crimped edge, with ridge running

parallel to each edge. *Osmunda regalis capitata* (raised from bulbil); compact, the edges of pinnae crested. *Asplenium f.-l. lunulatum* var. *Nelliae*; the middle pinnae are almost suppressed, and the fronds terminated by a fine tassel. *Aspidium aculeatum* var. *hybridum* (*A. angulare* × *A. aculeatum*), pinnae pinnatifid, macronate, dark shining green; *Nephrodium paleaceum*, var. *Willisi*, nicely crested variety; *Scolopendrium v. ramo-inequale*, var. *laudabile*, large branched fronds, sori at the edge; *Aspidium angulare*, sec. *cruciatum*, var. *Nympha* (raised), the pinnae pointed and sloping towards the apex of the frond; and *A. a. sec. graciceps*, var. *tueda*, a curious variety with a tassel at the end of fronds, and each pinnae crested.

Botanical Certificates were awarded to *Scolopendrium vulgare*, sec. *periferens*, var. *Nepenthesoides*, a curious variety with saucer-shaped cavity at the end of the frond; also to *Aspidium aculeatum cristatum circumglobatum*, a nice dense variety; and several Awards of Merit to good varieties. He also showed some seedlings, showing the effects of crossing varieties of *Scolopendrium vulgare*; a Bronze Banksian Medal was awarded for this group.

The 2nd prize for Ferns was awarded to C. T. Drury, Esq., F.L.S., Fernholme, Forest Gate, Essex. In this fine group was *Athyrium f.-f.*, var. *plumosum* *Druryi*, new, a seedling from *superbum*, multipinnate fronds, graceful and delicate green; awarded First-class Certificate. Awards of Merit were granted for *A. f.-f.*, var. *revolvens*, in which the pinnae were curled under, like a feather; and to *A. f.-f.* var. *superbum*, dense, finely divided delicate fronds. A handsome specimen of *Polystichum angulare*, var. *divisilobum plumosum densum*, probably the most elegant of hardy Ferns, fronds tripinnatifid, pinnae overlapping.

A fine strain of quilled German Asters, grown at Chiswick from seed supplied by Mr. John Walker, nurseryman, Thame, was commended. A dwarf early-flowering *Chrysanthemum*, of the type of *Madame Desgranges*, but with quilled white florets, named *Mrs. Whiteley*, came from Mr. William Whiteley's nursery, at Hillingdon, and the committee desired to see it again. Mr. Arthur Rawlings, nurseryman, Romford, had show Dahlias: *George Gordon*, a large bright crimson self, fine in petal and outline, but inclined to be a little flat; and *George Hurst*, maroon, deeply tipped with purple, this portion of the petal having stripes of maroon running into it, one of those flowers which partake both of the show and fancy character; and *William Britton*, a dark-striped fancy. From Mr. J. T. West, The Gardens, Cornwall, Brentwood, came show Dahlia *Arthur Rawlings*, a large, bold, and finely-formed crimson self, shaded in the centre, fine in petal and outline, and perfect in the centre (Award of Merit). *William Powell*, a very fine, well-formed, deep yellow self, of fine quality (Award of Merit); and decorative Dahlia *MacKeith*, salmon and delicate mauve, of a pale yellow ground, with slight lines of yellow on the margin—a very pleasing and attractive variety (Award of Merit).

From Messrs. Paul & Son, Old Nurseries, Cheshunt, came Decorative Dahlia *Harlequin*, yellow, flaked and striped with crimson—very constant, and quite novel and distinctive in character (Award of Merit); and blooms of *Roses H. P. Cheshunt*, scarlet; *H. P. Bruce Findlay*, *H. P. Dowager* *Duchess of Marlborough*, and *Bourbon Mrs. Paul*, to show their autumnal character.

Mr. H. B. May, Dyson's Lane Nursery, Edmonton, sent *Croton Golden Ring*, a form of the *C. spiralis* type, with long pendent leaves, much twisted, the upper surface deep gold blotched with green, the under surface blotched and marked with wine-crimson; the quite small plants were richly coloured, and it promises to make a highly valuable decorative and table plant (Award of Merit).

A superb collection of Gladioli from Messrs. Kelsey & Son, of the Langport Nurseries, occupied nearly the whole of one side of the Hall. Altogether there were about 150 spikes, many of them exceedingly fine. Prominent were two varieties, submitted as representing a new break, inasmuch as the usual flame of colour—purple, or some such shade—no longer appeared upon the throat; they were *Lady Brooke*, blush, with sulphur throat, and slight flakes of purplish-crimson, very soft and delicate in tint, and fine form (Award of Merit); and *George Meredith*, blush-sulphur throat, and heavily flaked with rosy-crimson (Award of Merit); and among the varieties of ordinary character were *W. S. Gilbert*, delicate pink, flaked with carmine, very distinct and novel (Award of Merit); *Sir A. Sullivan*, very bright pale orange-scarlet, with slight flakes of

cerise, extra fine (Award of Merit); *Sheila*, white, with bright violet-purple flames on the throat, a charming light variety (Award of Merit); *Pandanus*, pale salmon, flaked with pink and carmine, and slight purple lines; *Rev. J. Stubbs*, deep orange-scarlet, with rich purple marking; *Sir F. Leighton*, rich bright scarlet, flaked with deep crimson; *Arthur Turner*, blush, flushed with pink, and pencilled with deep pink; *Harrison Weir*, fine bright pale carmine, and slight flakes of crimson; *Mrs. Stewart*, pale ground, heavily flaked with crimson purple; and such fine older varieties as *The Odalisque*, *Baroness Burdett-Coutts*, pale purple, extra fine; *Dercyllus*, *Electra*, *Rev. H. H. D'Ombrain*, *Ada*, *Sir G. Nares*, *Henry Irving*, pale yellow, *Princess Beatrice*, *Joseph Broome*, *John Dominy*, &c. From M. Victor Lemoine, Nancy, came *Phlox Flambeaux*, large in size, and fine in form, of a bright pale orange carmine colour, but with a fatal tendency to run to a pale colour. From M. C. G. Van Tubergen, jun., Zwansenburg, Haarlem, came a number of spikes of hybrid Gladioli, obtained from a cross between some of the best forms of *H. Gandavensis* and *G. Saundersii*, wanting in the quality of our English-grown varieties, but suggestive of being useful as seed parents, in that the colours and marking were somewhat novel. *Mr. J. Hole*, Commercial Street, Teignmouth, sent blooms of a deeply-fringed Carnation, named *Devon Beauty*, carmine pink, edged with white.

Mr. George Phippen, nurseryman, Reading, staged two very fine and effective groups, one of shields of Cactus and decorative Dahlias, from fifteen to twenty blooms being used on each, set up with a background of *Dracaena australis*, and intermingled with which were *Cocos Weddelliana* and other elegant Palms, and Maidenhair Ferns. Altogether, there were about fifty of these shields, and they had a fine and imposing effect. He also had a fine group of Lilies, varieties of *L. speciosum*, *L. auratum*, and *L. Harrisii*, intermingled with Ferns, Palms, &c., which was highly effective. A Silver Flora Medal was awarded to each; he also arranged a box of Maidenhair Fern.

NATIONAL DAHLIA.

SEPTEMBER 4 AND 5.—The state of the season affected the Dahlias brought together on the occasion of the annual exhibition of the National Dahlia Society at the Crystal Palace on the 4th inst. The season had seriously affected the quality of the flowers; the blooms were small, and many rough; some too old, others too young; and these facts indicate the difficulty exhibitors had in making up their collections. A week's previous fine weather would have worked wonders, and though so ardently longed for, it did not happen. Many exhibitors who had entered in the hope of being able to compete, found themselves unable to do so at the last moment—but that is a circumstance common to all large exhibitions of cut flowers. There was a certain amount of roughness about the decorative and Cactus variety, but it was not so perceptible as in the case of the show varieties, where symmetry is all important; but the Pompon varieties lacked their usual admirable finish, and the single varieties some of their usual charming freshness. But the best of cultivators cannot do in a bad season what can be accomplished in a good one. As is usual, the Dahlia show was held in the western portion of the nave, and the light was excellent. A great many novelties were staged, and a larger number of certificates than is usual were granted.

NURSERYMEN'S DIVISION.

Show Dahlias.—Despite the unkind season, there were as many as five collections of sixty blooms, distinct. Into this class Mr. C. Turner, Royal Nursery, Slough, put all his strength, staging the finest and most finished blooms in the show, and won in a canter; he had *William Rawlings*, *Earl of Ravensworth*, *Comedian* (fancy), *Prince Bismarck*, *Matthew Campbell* (fancy), *Mrs. Harris*, *Alice Emily*, *Mrs. Foster*, *John Henshaw* (new, fine crimson self), *Herbert Turner*, *Rev. J. B. M. Camm* (fancy), *George Rawlings*, *Mrs. Langtry*, *Colonist*, *Harry Keith*, *Henry Walton*, *Rebecca*, *Mrs. W. Slack*, *Glowworm*, *Lorina* (orange buff self, very fine), *James Cocker*, *Ethel Britton*, *John Hickling*, *Mrs. Saunders* (fancy), *Burgundy*, *Seraph*, *Florence*, *Mrs. G. Harris*, *Agnes*, *Sunbeam*, *John Bennett*, *Marion Fellowes*, *T. W. Girdlestone* (fancy), *John Standish*, *Clara*, *Old Tom* (a fine crimson self), *Miss Fox*, *Crimson King*, *Mrs. Gladstone*, *Goldfinder*, *R. T. Rawlings*, *Bendigo*, *Primrose Dame*, *Lustrous*, *Charles Wyatt* (self),

Flag of Truce, *Nellie Tranter*, &c.; undoubtedly the presence of a few fancy varieties did add a very pleasing effect to this stand. Messrs. Keynes, Williams & Co., Nurserymen, Salisbury, were placed 2nd, with smaller, still neat, blooms of *T. W. Girdlestone* (fancy), *Miss Cannell*, *Crimson Globe*, *Spitfire*, *Rebecca* (fancy), *Royal Queen*, *Mr. Glasscock*, *William Rawlings*, *John Hickling*, *Dorothy*, *Queen of the Belgians*, *T. S. Ware*, *Harry Turner*, *Lady G. Herbert*, *Duchess of Albany* (fancy), *Imperial*, *Shirley Hibberd*, *Frank Pearce* (fancy). 3rd, *Mr. A. Rawlings*, *Nurseryman*, *Romford*.

In the class for forty-eight blooms, there were four exhibitors, and Messrs. Keynes & Co., were placed 1st, with some very good flowers, prominent being *Thomas Hobbs*, *Spitfire*, *Duchess of Albany* (fancy), *Rev. J. B. M. Camm* (fancy), *William Rawlings*, *James O'Brien* (fancy), *Mr. Glasscock*, *R. T. Rawlings*, *King of Crimsons*, *Shirley Hibberd*, *Mrs. Saunders* (fancy), *Frank Pearce* (fancy), *Mrs. Langtry*, *J. T. Vaughan*, *John Henshaw*, *Mrs. Gladstone*, *Comedian* (fancy), *Prince of Denmark*, *Edmund Boston*, *Colonist*, *Mrs. P. McKenzie*, *Nellie Cramond*, *Coronet*, *Miss Cannell*, and *Queen of the Belgians*. 2nd, *Mr. A. Rawlings*, with *General Gordon* (fancy), *Maud Fellowes*, *Harry Keith*, *James McIntosh* (fancy), *Queen of the Belgians*, *Prince of Denmark*, *Egyptian Prince* (self crimson), *George Rawlings*.

There were five exhibitors of thirty-six blooms, and here a rising West of England grower, Mr. George Humphries, nurseryman, Chippenham, was placed 1st, with *Duchess of Albany* and *Frank Pearce*, fancies; *William Rawlings*, *Ethel Britton*, *Harry Turner*, *J. W. Lord*, *Salamander* (fancy), *Hope*, *Hercules* (fancy), *Mrs. Kendal*, *Mrs. Saunders* (fancy), *Colonist*, *Sunset* (fancy), *James Stephen*, *Maud Fellowes*, *Shirley Hibberd*, *Nellie Cranmore*. 2nd, Messrs. J. Saltmarsh & Son, nurserymen, Chelmsford, with *Mrs. F. Foreman*, *Mrs. W. Slack*, *T. S. Ware*, *J. B. Service*, *Mrs. Gladstone*, *H. W. Ward*, *Constance*, *Mrs. Glasscock*, *R. T. Rawlings*, *Frank Pearce* (fancy), *Harrison Weir*, and *Willie Garratt*.

Mr. Humphries was also 1st with twenty-four blooms, out of five exhibitors, staging good ones of *Duchess of Albany* (fancy), *Mrs. J. Downie* (orange self), *R. T. Rawlings*, *Wm. Rawlings*, *Mrs. Saunders* (fancy), *Harry Turner*, *Maud Fellowes*, *Frank Pearce* (fancy), &c.; 2nd, *Mr. J. Walker*.

There were six exhibitors of twelve blooms; Mr. J. R. Tranter, nurseryman, Henley-on-Thames, was 1st, with good flowers of *William Keith*, *George Rawlings*, *Mrs. Gladstone*, *Joseph Ashby*, *Willie Garratt*, *J. T. West*, *Harrison Weir*, *John Standish*, *Chorister* (fancy), and *Seedling*; the blooms were small, but very correct. 2nd, *Mr. H. Harris*, *Writtle Road*, *Cambridge*, with blooms only just inferior.

Cactus and Decorative Dahlias.—The bunches of these were a striking feature indeed, and there were five exhibitors of twelve varieties. Messrs. Keynes & Co. were placed first with *St. Catharine*, pale yellow, new; *Juarez*, *Mrs. Hawkins*, *Baron Schroder* (new, and very fine), and *Mrs. Arthur Newall* were red shaded; *Countess of Pembroke*, pale pinkish mauve; *Duke of Clarence* and *Kyneth*, brilliant orange scarlet, type of *Juarez*; *Viscountess Folkestone*, *Lancelot*, *Dr. Masters*, and a *Seedling*. Messrs. J. Cheal & Sons came in a good 2nd, with *Duke of Clarence*, *Marchioness of Bute*, *Mrs. G. Reid*, *Robert Maher*, *Professor Baldwin*, *Beauty of Arundel*, *Mrs. Tait*, *Empress of India*, *Harry Freeman*, *Black Prince*, *Millie Scupham*, and *Juarez*. There were four exhibitors of nine bunches, and Messrs. J. Burrell & Co., *Howe House Nurseries*, *Cambridge*, were placed 1st, with fine bunches of *Juarez*, *Mrs. Hawkins*, *Mrs. G. Reid*, *Black Prince*, *H. Freeman*, *Amphion*, *Professor Baldwin*, *Mrs. Douglas*, a very pretty pinkish salmon variety, and *Robert Maher*. 2nd, *Mr. N. V. Scale*, whose best bunches were *Honoria*, *Cannell's Favourite*, *Henry Cannell*, and *Panthea*. In the class for nine bunches of Cactus varieties, six blooms of each, Messrs. J. Cheal & Sons took the 1st prize.

Pompon Dahlias.—These certainly appeared to have missed something of their usual symmetry and finish, and they appeared to have gone to size. The best stand of twenty-four varieties, in bunches of ten blooms of each, came from Messrs. Keynes & Co., who had *Darkness*, *Lady Blanche*, *Hector*, *Golden Gem*; 2nd, Messrs. Cheal & Sons, who had *The Khedive*, *Achilles*, *Phoebe*, *Iolanthe*, *Othello*, *Don Juan*, *Dora*, *Little Bobbie*, *Darkness*, *H. E. Searle*; 3rd, *Mr. C. Turner*.

With twelve varieties, Messrs. Paul & Son were 1st. *Single Dahlias*.—There were four exhibitors of

twenty-four single Dahlias, ten blooms of each, and Messrs. Cheal & Sons maintained their old supremacy, both for quality and for effective setting-up; 2nd, Mr. C. Steed, Addiscombe, Croydon. The class for twelve bunches did not bring any exhibitors.

Owing to the pressure on our space we are compelled to omit the remainder of the report, and that of the Crystal Palace Show, which will be given in our next issue.

NATIONAL CHRYSANTHEMUM.

SUMMER chrysanthemums were the chief feature of the exhibition opened yesterday at the Royal Aquarium, though Dahlias and Gladioli made an excellent display. Among the chief exhibitors of the former were Mr. J. A. Houlton and Mr. Vince, and Mr. Owen sent a splendid group of early Pompon and incurved summer varieties in several new and beautiful colours. Mr. Theobald, M.P., Messrs. Phippen, Messrs. Cheal, Messrs. Ware, and Messrs. Keynes were among the prize winners for Dahlias, and showed remarkably fine collections.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

THE following is a report of this remarkable exhibition—remarkable for extent, there being about 4000 entries, but lacking in the finer features of the great Belgian shows, in the way of Cycads, Palms, and Tree Ferns to conceal the gaunt-looking rafters of the Waverley Market Hall in which the exhibition is held.

Special Prizes.

The Silver Cup, of the value of £10, presented by the Turner Memorial Trustees, for the best collection of fruit in the show (twelve dishes) was awarded to Mr. McIndoe, Hutton Hall, Guisborough.

The Veitch Memorial Medal and £5, for the most meritorious dish of fruit in the show, was won by Mr. McHattie, Newbattle Abbey, for fine bunches of Muscat of Alexandria Grapes.

A second Veitch Memorial Medal and £5, for the most meritorious Orchid, or stove or greenhouse plant, in the show, was won by Mr. Finch, for a magnificent specimen of *Ixora Duffii*, covered with trusses of its magnificent flowers, some of which measured 16 inches across.

The third Medal, for the most meritorious hybrid was not awarded—not for want of worthy subjects, but from the interpretation the judges placed on the terms of the programme, else it should have gone to Mr. Lindsay for a hybrid *Nepenthes*.

CLASS I.—COLLECTIONS OF FRUITS.

In these exhibits were to be found some most superior examples of cultivation, both of Grapes and other fruits; Pears and Apples from orchard-house trees having greatly aided most of the successful exhibitors. In the large class for twelve dishes of fruit without any restriction as to kinds shown, Mr. McIndoe, gr. to Sir Joseph Pease, Bart., M.P., Hutton Hall, Guisborough, was first with a superb display of fruit throughout, all being in the best possible condition. Of Grapes, he had three bunches of Golden Champion, finely finished in every respect, large in bunch and berry, these latter being also of a beautifully clear colour, and three bunches of Gros Maroc, also of large size and perfect in finish. Two excellent Pines, one Queen and one Smooth Cayenne, both well ripened; two excellent Melons, one being Hero of Lockinge, and one Exquisite, a medium bunch of Bananas, a splendid dish of Souvenir du Congrès Pears, highly coloured fruits of Golden Eagle Peach, well-ripened Ribston Pippin Apples, Stanwick Elrue Nectarines, Brown Turkey Figs, and Kirke's Plums, completed this fine exhibit. The 2nd prize in this class was awarded to Mr. Murray, gr. to the Marquis of Ailsa, Culzean Castle, Maybole. This collection comprised splendid Muscat of Alexandria Grapes, large bunches and good colour; huge clusters of Alnwick Seedling, well ripened, an extra fine bunch of Bananas, two good Pines, good Melons, Peaches, and Figs. The 3rd prize in this class went to Mr. Hunter, gr. to Earl of Durham, Lambton Castle, fine Gros Colmar and Calabrian Raisin Grapes, a splendid dish of Souvenir du Congrès Pears, and two excellent Pine-apples were shown here.

For a collection of twelve dishes, from which Pine-apples were excluded, Mr. Hunter won the 1st prize, showing very strongly. Of Grapes he staged extra fine Gros Colmar, the best bunches of this kind shown, very fine, both in bunch, berry, and colour; three large clusters of Barbarossa, well coloured;

and three of similar description of Black Alicante. Other fruits consisted of Scarlet Premier Melon, Gregorie Bourdillon Pear, Royal George Peach, and Worcester Pearmain Apples, all of which were of first-rate order of merit; Mr. McKelvie, gr. to Dowager-Duchess of Roxburgh, Dunbar, was an excellent 2nd, having good Muscat of Alexandria, Barbarossa, and Black Alicante Grapes, good Peaches, Nectarines, and Pears. Mr. Fairgrieve, gr. to Dowager-Duchess of Athol, Dunkeld, was 3rd, having some good Grapes, an extra large Melon, with other capital dishes of Peaches, Apples, and Pears.

With twelve dishes of fruit grown in an orchard-house, exclusive of Grapes and Pines, Mr. McIndoe was a fair 1st; in this instance he had Doyenné du Comice Pears—fine; the same of Souvenir du Congrès, Emperor Alexander Apple, of large size, with a grand dish of Bismarck, Exquisite, and Princess of Wales Peaches, Spencer and Humboldt Nectarines, Kirke's and Magnum Bonum Plums, with Brown Turkey Figs, and *Passiflora edulis*, making a good collection. Mr. Hunter in this instance was 2nd, his best dishes being Burré D'el and Clapp's Favourite Pears, both fine; Peasgood's Nonsuch, and Warner's King, of extra size; capital Plums and Peaches. Mr. Melville, gr. to Hon. G. G. Dalrymple, St. Boswell's, was 3rd; here was an excellent dish of Bigarreau Noir de Schmidt Cherries, and another variety of Bigarreau, with two excellent dishes of Rivers' Orange Nectarines.

For twelve dishes of fruit, excluding Pines and Grapes. Mr. Hunter once more won the 1st prize here; he showed the following in first-rate condition:—Souvenir du Congrès and Gregorie Bourdillon Pears, Lord Napier and Victoria Nectarines, Worcester Pearmain and Ribston Pippin Apples and two good Melons, all first class fruit. Mr. McIndoe in this case was 2nd with Pitmaston Duchess and Doyenné de Comice Pears, both extra fine, with excellent fruits of Blenheim Orange and Scarlet Model Melons; good Nectarines and Plums made up this collection. Mr. Melville came 3rd in this class with good fruit, amongst which were some capital Bigarreau Napoleon Cherries, and large fruits of Newton and River's Orange Nectarines.

For eighteen dishes of fruit grown in the open air in Scotland, Mr. Fairgrieve was first with a remarkably fine exhibit, William's Bon Chrétien and Pitmaston Duchess Pears, Peasgood's Nonsuch and Worcester Pearmain Apples, Governor Wood and Morello Cherries, both extra; Large Early Apricots (very fine), very good Peaches, Nectarines, Plums, Figs, and Red Currants being his best dishes. Mr. Day took the 2nd prize, also showing some well-grown fruit, Morello and Late Duke Cherries, Magnum Bonum and Pond's Seedling Plums, Castle Kennedy Figs, William's Bon Chrétien Pears, and Lady Sudeley Apple being his best dishes. Mr. Goodfellow, Perth, was 3rd, showing a good all-round collection of fruit.

With twelve dishes of fruit grown in the open air in England, Mr. Craap, gr. to Lord Wimborne, Canford Manor, was awarded the 1st prize, staging some very well-grown and highly-coloured fruit; these consisted of Duchesse d'Angoulême, William's Bon Chrétien, and Doyenné Bouscch Pears, all extra good, Red Astrachan, Worcester Pearmain, and Ribston Pippin Apples, Lord Napier and Pitmaston Orange Nectarines, both fine dishes, good examples of Figs in Brown Turkey; excellent Morello Cherries and large Plums, with other good fruit. The 2nd prize, collection from Mr. Nicholson, gr. to Wm. Melles, Esq., Sewardstone Lodge, Essex, included fine examples of Pears in River's Princess and Clapp's Favourite, Warner's King and Peasgood's Nonsuch Apples, with good fruits of Nectarines, Plums and Cherries, the 3rd prize being taken by Mr. Wright, Hereford, in which some few dishes were good, whilst others were weak.

The Turner Memorial Prize for the best collection of fruit in the exhibition was awarded, after careful consideration, to Mr. McIndoe for his fine exhibit in Class I., section 1, viz., for twelve dishes of fruits with no restrictions.

CLASS II.—GRAPES.

In this section the greatest amount of interest was centered in the classes for collections. In these some of the finest produce in the show was to be seen, to which no exception could be taken. Many of the exhibits were of remarkable character and quality. For eight bunches, four varieties, there were eight competitors. The 1st prize was rightly awarded to Mr. Kirk, gr. to J. T. Paton, Esq., Norwood, Alloa. The varieties were Madresfield Court, bunches of extra size, berries large, with no semblance

of cracking; Black Hamburg, bunches again of extra size, in every way first rate; Gros Maroc bunches extra fine, berries not so large as in some instances; and Alnwick Seedling, with large clusters and fine berries. In each instance the finish was perfect, the colour and bloom of the finest. The only fault one could find was the absence of Muscat of Alexandria, which if present instead of the last-named kind, to give more quality, would have made this collection almost invincible. Mr. Taylor, gr. to J. Chaffin, Esq., Bath, came a close 2nd; his varieties were—Muscat of Alexandria, in fine condition, both as regards colour, berries, and bunches—there was, however, a slight trace here and there of rust, which was the only defect; Madresfield Court was also well shown, hardly so fine in berry as those in the 1st prize collection; Black Alicante, the bunches of extra size and superior finish; and Alnwick Seedling, again slightly behind his opponent's pair. Mr. Murray, gr. to T. L. Learmouth, Esq., Polmont, was 3rd, with good bunches, well coloured, the berries rather smaller than in the 1st and 2nd prizes.

The other exhibits in this class were of excellent quality. Mr. Kirk was 1st again for six bunches, not less than three varieties, showing Madresfield Court, Black Hamburg, and Gros Maroc, the latter being extraordinarily fine in berry and colour. Mr. McHattie, gr. to the Marquis of Lothian, Newbattle Abbey, was a capital 2nd in this class, showing three superb bunches of Muscat of Alexandria, grandly coloured, with one of Black Hamburg, and two of Madresfield, all well finished, the bunches of medium size in each instance. Mr. Mackinnon, gr. to Viscount Melville, Lasswade, came in 3rd, with some splendid fruit, showing Madresfield Court, a fine bunch, but hardly coloured, Muscat of Alexandria, of medium size; two huge clusters of Gros Maroc, and a splendid bunch of Golden Hamburg, with another of Black Hamburg, also good. In this class eleven competed.

For four bunches in varieties, Mr. Taylor beat his opponent in the larger class, having highly finished examples of Alnwick Seedling, Madresfield Court, Muscat of Alexandria, and Black Alicante, all fine in bunch and berry. Mr. Kirk came in this case 2nd, with one each of Black Hamburg, Madresfield Court, Gros Maroc, and Alicante, all in good condition; Mr. Murray again following 3rd with well-coloured bunches. In this class there were again eleven competitors.

For two of bunches Black Hamburg, Mr. Witherpoon, Red Rose Cottage, Chester-le-Street, was 1st, the clusters being finely coloured, but the berries rather small; Mr. Boyd, Falkirk, being 2nd, with good examples. With Muscat Hamburg, Mr. Day, Galloway House, took 1st prize with the beat of the kind in the show, being of excellent colour, and well-formed bunches; Mr. Boyd being placed 2nd. Mr. Day took 1st for Madresfield Court, with bunches extra well coloured; Mr. Murray following with larger bunches, rather deficient in this respect. The last-named was, however, to the front with Black Alicante of good finish and quality; Mr. Taylor came a very close 2nd, being finer in appearance, but hardly so ripe. Mr. Taylor won easily with Gros Colmar, showing extra bunches, well finished, and of first-rate colour, with berries extra fine in size. Mr. Potter, White Halls, Carlisle, was here a near 2nd, with two bunches of finer finish; Mr. Day came in a good 3rd, with two bunches of medium size.

For Lady Downes, Mr. Murray won again, with excellent bunches, of extra size and well finished, these were more thick and dense than is usual for this variety. Mr. Morrison, of Archerfield, was 2nd, with long tapering bunches of good colour. Mr. Green, Haddington, was 3rd, with bunches bearing splendid berries.

For any other black kind, Gros Maroc was placed 1st, being shown by Mr. Day, the bunches of medium size, but finely finished. Mr. Taylor came 2nd here, having larger bunches and much finer berries, but hardly so well-coloured, one bunch being also a little rubbed.

The next class was an important one, that of two bunches of Muscat of Alexandria, inasmuch, as it contained the two bunches to which the Veitch Memorial Prize and Medal was awarded for the most meritorious dish of fruit in the show. This, with the 1st prize in its class, was worthily awarded to Mr. McHattie, who staged two fine bunches perfect in colour, and of extra size, with large berries. Mr. Taylor was second, only lacking the colour of those in the 1st prize lot. Mr. Winter, Walk House, Hull, was a capital third, with clean bunches (13 com-

petitors). Mr. Potter won the 1st prize with good bunches of Buckland Sweetwater, finely coloured, Mr. Allan coming in second.

For any other white Grape, two bunches of Duke of Buccleuch from Mr. Copeland, Orwell Lodge, were placed first. These were of extra size in bunch, good in berry, and finely finished. Mr. McIndoe followed very closely indeed with similar bunches of the same variety. Trebbiano of good size and colour was placed third, coming from Mr. Potter. Golden Queen in this class was finely shown by Mr. Murray without its well-known failing.

For single bunches there was a quantity of good produce shown. With Black Hamburg, Mr. Morrison was first, showing the finest bunch of its kind in any of the classes, large in size, and berry also well coloured; Mr. Day following with an excellent sample very compact. Mr. Taylor secured the first prize for Black Alicantes with an extra fine bunch, which left nothing to be desired, Mr. Murray coming in second. With Lady Downes, Mr. Laing, Blairgowrie was first, with an extra fine bunch, well coloured, Mr. Murray being second with another good sample. Mr. Green, was first for Alwick Seedling, with a good bunch, having large and well-coloured berries, Mr. Murray being second, his berries being of medium size. A smaller bunch, with extra fine berries from Mr. Taylor, was placed third. An enormous bunch of Gros Maroc secured for Mr. Leslie, Pitcullen House, Perth, the first prize in its class, a little more thinning would have greatly improved this exhibit. Mr. Taylor was second with a finely finished bunch. Mr. McHattie was again invincible for a bunch of Muscat of Alexandria, showing an example equal to his other 1st prize ones. The 2nd prize in this class went to a comparatively small bunch, well coloured, from Mr. Green, the 3rd to a larger one from Mr. Wyton, Garstang. For the heaviest bunch of any black Grape in its class, Mr. Mattison, gr. to Mr. Buchanan Currie, was first with a huge cluster of Gros Colman weighing 12½ lb. This bunch was only partially coloured, requiring some weeks to have finished it, which it bore a promise of having done if not cut. The 2nd prize went to a large cluster of black Alicante weighing 11lb. 2oz., the 3rd prize being awarded to a large bunch of Barbarossa, the best finished of the three, the former from Mr. Leslie, the latter from Mr. Kirk. For the heaviest one of any white Grape, the 1st prize was awarded to a large ungaily bunch of Raisin de Calabre, from Mr. Morrison, the weight of which was not stated; the 2nd going to the same kind, from Mr. Hannah, Port Wilnam, the only merit being its weight. Amongst the classes for Grapes, the strongest exhibits were to be found in the collections of varieties. In the larger class, such well-known growers as Mr. McHattie, Mr. McKinnon, of Lasswade, Mr. Murray, of Maybole, Mr. Allan, of Ganton, and Mr. Leslie, of Perth, all showed fruit of excellent description. Although receiving no prizes, these exhibits all deserve recognition. Had they showed in the smaller classes, many of these productions would have stood in the front rank.

It would have saved the judges some considerable trouble in these classes if the bunches had been weighed beforehand. For one bunch of Madresfield Court, Mr. Taylor was 1st—fine in berry, bunch, and colour; Mr. McKelvie, gr. to Dowager Duchess of Roxburgh, Dunbar, a good 2nd. Mrs. Pince was very large in berry, and well finished, from Mr. W. Stewart, Brayton Hall; Mr. Murray coming 2nd. For Duke of Buccleuch, Mr. Chalmers, Dumfries, was 1st, with a medium-sized bunch, well coloured; Mr. Copeland 2nd. Mr. McIndoe was 1st for Golden Champion, with a good-sized clean bunch, with fine berries. The same exhibitor also took the 1st prize for the best seedling, not in commerce, with Black Duke, a cross between Gros Guillaume and Duke of Buccleuch. It partakes much of its first-named parent in the bunch, having also the long footstalk of that kind; the berries resemble the Duke, the flavour is first-rate, the skin rather thick, indicating its keeping qualities, much after that of the Black Hamburg, and, in the opinion of the judges, excellent. Mr. Murray, Culzean Castle, Maybole, was 2nd in this class with a seedling of which no information was given, it resembles Lady Dennes in berry with bunches after the Hamburg. For flavour the 1st was given in the black class to Muscat Hamburg from Mr. David Murray; the 2nd to Mr. McKelvie for Madresfield Court.

For the best flavoured white with Muscat of Alexandria in perfect condition, Mr. McHattie was 1st, the 2nd going to the same sort, from Mr. Winter,

Hull. Gros Maroc was placed 1st for bloom, extra dense, shown by Mr. Day, Galloway House; Mr. D. Murray being 2nd.

CLASS III.—GRAPES.

In this class (open to those who do not compete in the preceding) Mr. McDonald, Middleton House, is the winner for two bunches of Black Hamburg, good colour and ripe; the 2nd going to Mr. Collins, Stoney Hill, Walkertown. Black Alicantes: 1st to Mr. John Caldwell, Bangholm, with medium bunches well finished; 2nd to Mr. Harper, Dundas Castle, with larger bunches, hardly coloured sufficiently to win. Lady Downes: Mr. J. Caldwell won again with fine bunches, hardly coloured enough. Mr. Harper following him again, but closely. Muscat of Alexandria: 1st, to Mr. James Dobbie, Liberton, the bunches well coloured and fully ripened; Mr. McDonald came 2nd, with larger bunches very clean.

For single bunches, Mr. McDonald took 1st with black Hamburg, of fine colour; Mr. Collius, 2nd. Madresfield Court from Mr. Caldwell, was easily 1st, the bunch a fine one. The last-named exhibitor took 1st for black Alicante, with an extra fine bunch and fine in berry. Lady Downes, in perfect condition, from Mr. Jas. Cocker, easily won; Mr. J. Caldwell again 2nd.

For Gros Colmar, Mr. McLeod took 1st, with a small bunch well coloured; Mr. Cocker, 2nd, for a larger one wanting the finish.

For any other Black, Mr. Cameron was 1st, for Gros Maroc.

In Whites, Mr. J. Caldwell won again with Muscat of Alexandria, the bunch a fine one, but wanting colour. Mr. Auldjo, Mayfield, 2nd, with the same deficiency.

Mr. Cameron was 1st for Foster's Seedling, with a good example in colour and berry; Mr. Caldwell 2nd, with a larger bunch.

For any other sort of White, a splendid bunch of Duke of Buccleuch, with enormous berries, was easily 1st, from Mr. Scott, Beechwood; Golden Hamburg, not often seen so good, being 2nd, from Mr. J. Cocker.

For the bunch with finest colour, Gros Maroc was 1st, again coming from Mr. Crichton, Liberton. One bunch in this class was passed over by the judges, it certainly had the finest bloom, but it had apparently not been obtained by a natural method. Upon smelling the bunch, there was a most perceptible odour of sulphur found to pervade it. Such proceedings, when brought about by artificial means, should not be recognised, but, as in the present case, be passed over, and, if intentional, severely reprimanded by the judges.

CLASS IV.—FRUIT TREES IN POTS.

Vine Grown in Pot, Black.—There were but two competitors for this prize, but the quality was not first-rate, and the vines were badly trained. The 1st prize was awarded to Mr. A. Duil, gr. to Robert Bell, E-q., Clifton Hall, Ratho, with Gros Maroc; it had nine badly coloured bunches on it.

Pot Vine, White.—This class was rather better. Mr. Jas. Harvey, gr. to Col. Trotter, Morton Hall, was 1st, with Muscat of Alexandria; Mr. Bell being 2nd, with Rivers' New Sweetwater.

Four Fruit Trees in Pots were fairly good. Mr. J. McIndoe was 1st, with a good Sea Eagle Peach, an Apple, and two Pear trees.

Messrs. Cross & Sons, of Glasgow, showed well-grown fruit trees in pots, and samples of their fertilisers.

CLASS V.—FRUIT.

Pines in pots were not first-rate, but the two smooth-leaved Cayennes with which Mr. McIntyre won the 1st prize were fairly good. The same exhibitor was awarded the 1st prize for two handsome smooth-leaved Cayennes in the class for that variety. Mr. James Bennett, gr. to the Hon. C. H. Wynn, Rug Corwens was a good 2nd. Mr. McIntyre was 1st for Queens, and in the any other variety class, Mr. A. Kirk, gr. to J. T. Paton, Esq., of Alos, was 1st with Lord Carrington.

Mr. J. Hunter was 1st for a seedling Pine Apple not in commerce. For one bunch of Bauanas Mr. McIndoe was 1st with a good solid cluster.

Melons.—There was a good competition in the class for two melons. Amongst ten competitors Mr. John Wilson, gr. to Lord Elphinstone, Carberry Tower, was 1st with handsome fruit of La Favourite and Blenheim Orange.

There were thirty-six competitors in the next two classes for green and scarlet-flesh, many handsome well-ripened examples being shown. Mr. Wilson was again 1st in the former class, with La Favorite, and in the latter class, Mr. A. Millar (gr., to W. H.

Long, Esq., M.P., Rood Ashton), was 1st, with a superb example of Blenheim Orange.

Figs were well represented by eight dishes, Mr. Cruen, gr. at Castle Kennedy, being 1st with twelve handsome examples of Brown Turkey.

Peaches, Nectarines, and Apricots.—There were sixteen dishes of twelve Peaches, and twenty-four dishes of six. Mr. Thomas Lunt, gr. to A. Stirling, Esq., of Keir, winning in both classes, with remarkably coloured examples of Royal George. Many other meritorious dishes were exhibited.

Amongst twelve dishes of twelve Nectarines well-coloured examples of Eiruge, from Mr. Lunt, proved to be the best. There were fifteen competitors for the prizes offered for six Nectarines. The best were well-ripened Pitmaston Orange, from Mr. T. H. Crasp, gr. to Lord Wimborne.

There were twelve dishes of apricots, most of the fruit being of large size and well ripened, the best being twelve fruits of Moorpark, from Mr. G. Goodfellow, gr. to E. C. S. Gray, Esq., Perth. Mr. P. W. Fairgreive, gr. to the Duchess of Athole, was a good second.

Plums.—There were seventy-nine dishes of Dessert Plums, divided into six sections, amongst them being some well-ripened fruits, clean and of handsome appearance. The transparent Gage from Mr. P. Blair, gr. to the Duke of Sutherland, Trentham; Oullins Golden Gage, from Mr. S. Bowman, gr. to the Hon. Lady Deas, of Lasswade; the Greengage, from Mr. McIntyre, were very fine, and all were awarded 1st prizes in their sections. The variety Jefferson was well represented. Mr. A. Wilson, gr. to R. A. Oswald, Esq., of Auchencryve, had the best. Mr. Blair had also well-ripened fruit of smaller size. Kirke's was represented by twenty-one dishes of that variety. The best of them were from Mr. J. Day, gr. to C. J. Massey, Esq., Galloway House, Coe's Golden Drop, and other varieties were exhibited in somewhat smaller quantities.

There were sixty-five dishes of kitchen Plums, the favourite and best-grown varieties being Victoria and Magnum Bonum. In the former class Mr. Blair was first, and in the latter Mr. A. Wilson; Mr. James Harper, of St. Hellier's, Jersey, obtained a first prize for very good Pond's Seedling; Mr. McIndoe obtained the first prize for a collection of sixteen varieties of Plums, comprising good examples of Monarch, Grand Duke, Cox's Empress, Braudy Gage, Belle de Louvain, Pershore, &c.

Pears.—Pears were represented by some remarkably well-grown fruits. There were twenty-three dishes of Jargonelle, a favourite Scotch variety; but the 1st prize lot came from England, Mr. Crasp winning with astonishing examples of this variety. By far the best amongst seventeen dishes of William's Bon Chrétien were those from Mr. Harper, Jersey.

There were nineteen dishes of B-orné d'Amanlis, Mr. Harper being again 1st; Mr. Donald M. Bean, gr. to J. C. Cunningham, Esq., Rentreshire, was a good second.

Mr. Crasp beats Mr. Harper in the class for Louise Bonne of Jersey, both having large well-coloured examples.

The variety, Marie Louise, was represented by twenty-one dishes, none of them being ripe; but the specimens were of considerable merit. Mr. James Day, Mr. R. Sinclair, of Drum, and Mr. A. Wilson, winning in the order of their names. Of Winter Nels some were not true to name. By far the best of seven dishes were those from Mr. Harper. Hacon's Incomparable and Glou Morceau were poorly represented, Mr. Crasp winning in one class and Mr. Harper in the other.

Mr. Harper had the best Easter Benrié, and Mr. McKelvie, gr. to the Dowager Duchess of Roxburgh, Dunbar, the best Benrié Rance.

In the any other variety class, there was a good competition, twenty dishes being put up. Mr. Day was 1st, Mr. Gilmour, gr. to the Right Hon. J. G. Goschen, E-q., M.P., 2nd with Pitmaston Duchess, Mr. Crasp being 3rd with well-coloured Doyenne Boussoch. Altogether there were 139 single dishes of dessert Pears in competition.

There were nineteen dishes of stewing Pears, by far the best, being sent by Mr. Harper, who won two 1st prizes with Grosse Calabasse and Catillac. There were six collections of Pears, Mr. Harper being 1st, with handsome clean fruit, and Mr. Crasp, a good 2nd.

Dessert Apples were divided into eleven sections of single dishes, comprising the most popular varieties, in all 143 single dishes were staged of dessert Apples, the most popular varieties being Ribston Pippin, King of the Pippins, Irish Peach, and Thrie Pippin. The principal prize-winners were Mr. J. Nicholson,

gr. to W. Willes, Esq., Sewardston Lodge, Essex; Mr. Jas. Day, Mr. S. T. Wright, gr. to C. L. Campbell, Esq., Hereford; Mr. Craspe, Mr. John McKenzie, gr. to F. S. W. Cornwallis, Esq., M.P., Maidstone, and Mr. Harper.

Thirteen competitors entered the lists for twelve varieties of dessert Apples, but the quality throughout was not first-rate. Mr. John McKenzie was well 1st, most of his fruit being of good size, and well coloured; Mr. S. T. Wright was 2nd.

Kitchen Apples.—There were 177 dishes, and in these the best represented were Lord Suffield, Stirling Castle, Eclinville, Hawthornden, Tower of Glamis, Warner's King, Peasgood's Nonsuch, Emperor Alexander, Stone's Duchess of Oldenburgh, and Pott's Seedling. The leading prize winners in eleven classes being Mr. Goldie, Girvan, Ayrshire, Mr. Gilmour, Mr. McKenzie, Mr. Jas. Oulton, gr. to Chas. Lockhart, Esq., of Castle Douglas, and Mr. John McKenzie.

There were fourteen collections of Culinary Apples—12 dishes; the competition being very keen and the quality of the fruit good. Mr. McKenzie well deserved the 1st prize he won well with d'Éclat, The Queen, Bedfordshire Foundling, Yorkshire Beauty, Tyler's Kernel, Grenadier, Frogmore Prolific, Lord Derby, Mère de Ménage, Gloria Mundi, and Alexander. Mr. Gilmour was second.

Mr. McKenzie had the heaviest dish of Apples, a fine one of Peasgood's Nonsuch, weighing 10 lb. 12 oz.

There were thirteen competitors.

Strawberries were very good for the season. Six competitors staged dishes; the best was sent by Mr. Harper, gr. to Q. R. S. Richardson, Esq., Perth.

Gooseberries.—There were twenty-one dishes of Gooseberries, but none of the fruits were named. The best were sent by Mr. Maitland Forrest, gr. to Dr. Smith, Currie.

There were eleven dishes of Black Currants, twenty-four of Red Currants, sixteen of White Currants, thirteen of Raspberries, twenty-two of Cherries, and one of Brambles, the prize-winners in their order being Mr. E. Cameron, Mr. J. Brown, gr. to C. Wray, Esq., of Shercairay, Mr. D. Logan, Castlelaw Gardens, Coldstream, Mr. A. Hepburn, gr. to Major W. Ramsay, Killicoultry, and Mr. J. Harper.

CLASS VI.

Collections of Pears and Apples from France, Belgium, and the Channel Islands were represented by two very meritorious collections of each from Mr. Harper.

CLASS VII.—PLANTS.

Ten Store and Greenhouse Plants Distinct—Two competitors. An unequal contest; the first prize was awarded to Mr. W. Finch, Queen's Road, Coventry, who staged perhaps the finest lot of this kind that ever appeared in Edinburgh. *Ixora Williamsii*, and *I. amabilis*, *Lapageria rosea*, and *L. alba*, with *Erica Eweriana*, were the flowering plants; and *Croton Johannis*, and *C. Warrenii*, *Kentia Fosteriana*, *K. Belmoreana*, and *Cycas circinalis*, the foliage plants. Mr. A. Crichton, Southfield, Liberton, was 2nd.

Six Store and Greenhouse Plants.—No competition. Mr. Thomson, Eskbank, obtained the 1st prize, with a fair lot.

Eight Foliage Plants, distinct, pots not exceeding 10 inches.—In this section there were several exhibitors. The exhibits were of the half-specimen class, all good and fresh. Mr. McIntyre, The Glen, Inverleithen, was placed 1st; Mr. McIntyre, Darlington, 2nd; and Mr. Stewart, Brayton Hall, 3rd.

One Specimen Store or Greenhouse Plant.—Mr. Finch was here placed 1st with a grand *Ixora Williamsii*, truly a magnificent sample of plant cultivation. Mr. McIntyre, Darlington, was placed 2nd.

A table of plants 20 feet by 5 feet.—1st prize went to Mr. McIntyre, Darlington, who set up a very graceful table, well balanced in foliage and flowering plants. Mr. G. Wood, Oswald House, Edinburgh, was 2nd, with a table rich in well-coloured Crotons and other foliage plants; and Mr. Reynard, Ardenclotha, Hamilton, was 3rd.

One Cape Heath, only one entrant.—Mr. Finch, who set up a grand specimen of *Erica Marnockiana*.

Two Crotons distinct.—Mr. Stewart, Brayton, was an easy 1st with a splendid *C. Sunset*, and *C. angustifolius aureus*; 2nd, Mr. McIntyre, Darlington.

One Croton.—Mr. Stewart was here again an easy 1st, with a magnificent *C. Queen Victoriae*; and Mr. A. Thomson, Dean, 2nd.

Four Dracenas, in not less than 9-inch pots. Several entries. The best was staged by Mr. McIntyre, Darlington; 2nd, Mr. McIntyre, The Glen; 3rd, Mr. Harvey, Morton Hall, Midlothian.

Three Dracenas, in pots, not exceeding 6-in.

Here, Mr. Crichton, Southfield, Liberton, was placed 1st; Mr. McIntyre, The Glen, 2nd, and Mr. A. Thomson, 3rd.

Six Palms, distinct, in pots not exceeding 9-in. Numerous entries. The best was set up by Mr. McIntyre, The Glen, very clean well-grown stuff; Mr. McIndoe was placed 2nd, and Mr. G. Wood, 3rd.

Four Caladiums.—1st, Mr. Crichton; 2nd, Mr. G. Wood.

Six Table Ferns (in pots not exceeding 6 inches). 1st, Mr. McIndoe, won easily, with pretty plants of *Lomaria tripartita*, *Adiantum gracillimum*, *Gymnogramma chrysophylla*, *Pteris tremula Smithii*; 2nd, Mr. McIntyre, The Glen; 3rd, Mr. Fraser, Canaan Park, Edinburgh.

Six Exotic Ferns, Tree Ferns, Gleichenias and Adiantums excluded.—Mr. Napier, Rockville, Edinburgh, 1st, with a very clean lot of fine specimens; 2nd, Mr. G. Wood; 3rd, Mr. Crichton.

Three Gleichenias.—1st, Mr. McIntyre, Darlington; 2nd, Mr. Laing, Salisbury Green, Edinburgh; 3rd, Mr. J. Bald, Canaan House, Edinburgh.

Four Adiantums.—Many entries, all good specimen plants: 1st, Mr. Henderson, Polmont; 2nd, Mr. Lawson, Graigcrook Castle; 3rd, Mr. Henderson, Clermiston.

One Adiantum Farleyense.—1st, Mr. McIntyre, Darlington; 2nd, Mr. Green.

Todea superba.—Mr. E. Cameron, Ericstoane, Restalrig.

Six British Ferns, distinct varieties, large specimens.—Several entries—all good, 1st, Mr. Leman, Restalrig House, Edinburgh; 2nd, Mr. Napier; 3rd, Mr. T. Pringle, Westfield Cottage, Dalkeith.

Three British Ferns, distinct, large specimens.—1st, J. Napier; 2nd, Mr. E. Cameron; 3rd, Mr. W. Anderson.

Twelve British Ferns, distinct, in pots not exceeding 6 inches.—Several entries, closely contested. 1st, Mr. Scott, Canaan Lodge, Edinburgh; 2nd, Mr. Anderson, Pilrig, Edinburgh, and Mr. J. Cumming, Edinburgh.

Six British Ferns, dwarf, distinct, in 6-inch pots.—1st, Mr. J. Cumming; 2nd, Mr. W. Scott; 3rd, Mr. W. Fairley, Edinburgh.

Two Pans Lycopods.—1st, Mr. Henderson, Polmont; 2nd, Mr. Henderson, Clermiston.

Three Trichomanes or Hymenophyllum, distinct species.—1st, Mr. Napier; 2nd, Mr. A. Anderson.

One Tree Fern Stem, not less than three feet.—1st, Mr. Laing; 2nd, Mr. Pryde, Newington House, Edinburgh; 3rd, Mr. W. Stewart, Brayton Hall.

Six Orchids in bloom, distinct species.—1st, Mr. Sharp, Freeland, His group comprises excellent specimens of *Cattleya Gaskelliana*, *Laelia elegans*, *Cypripedium Veitchii*, *Odontoglossum Pescatorei*, and *O. vexillarium rubrum*; 2nd, Mr. Curror, Eskbank, with a very notable *Oncidium incurvum*, *Cattleya Gaskelliana*, *Miltonia Moreliana*, *M. spectabilis*, *Odontoglossum Harryanum*, and *Epidendrum prismato-carpum*.

Three Orchids, distinct.—1st, Mr. Wilson, Kelvin-side, Glasgow, with a remarkably fine *Odontoglossum grande*, *O. Pescatorei*, and *O. Alexandrae*; 2nd, Mr. Sharp, with *Cattleya Gaskelliana*, *Laelia elegans*, and a fine *Disa grandiflora*; 3rd, Mr. McGregor, Kendal, with a remarkable *Saccolabium Blumei majus*, having fifteen spikes badly balanced with the other components of the lot.

One Orchid.—1st, Mr. McGregor; 2nd, Mr. Sharp; 3rd, Mr. Wilson.

Twelve Tuberous Begonias, six single, six double distinct.—1st, Mr. Adams, Duddingston Cottage; 2nd, Mr. Pringle; 3rd, Mr. Henderson, Clermiston.

Two Tuberous Begonias.—1st, Mr. J. Duncan, Muirhouse, Boness; 2nd, Mr. J. Peason, Beechwood, Edinburgh.

Two Fuchsias.—1st, Mr. W. Anderson, Edinburgh; 2nd, Mr. Thomson, Eskbank; 3rd, Mr. Lyon, Blantyre.

Two Fuchsias, in pots not exceeding 8 inches.—1st, Mr. Anderson; 2nd, Mr. Douglas, Allanbank, Bonnyrigg; 3rd, Mr. Preston, Falcon Hall, Edinburgh.

Four Palms, distinct.—1st, Mr. Wood, Oswald House, Edinburgh; 2nd, Mr. Stewart, Brayton Hall; 3rd, Mr. McIntyre, Darlington.

One Palm.—1st, Mr. Ward; 2nd, Mr. Stewart; 3rd, Mr. McIntyre.

Six Table Plants, distinct.—1st, Mr. McIndoe; 2nd, Mr. McIntyre, Darlington; 3rd, Mr. McIntyre, The Glen.

Three Bronze Pelargoniums, distinct.—1st, Mr. Thomas Gibb, Redacres, Edinburgh; 2nd, Mr. David Adams; 3rd, Mr. Aiken, Balerno.

Three Zonal Pelargoniums, distinct.—1st, Mr. J. Fraser; 2nd, Mr. Gibb; 3rd, Mr. Lyon.

Three Variegated Pelargoniums, distinct.—1st, Mr. E. Cameron; 2nd, Mr. J. Fraser; 3rd, Mr. J. Forester.

Four Pots Chrysanthemum, Madame Desgranges, yellow and white, two of each.—1st, Mr. McMillan, Ferry Road, Edinburgh, with a very fine lot.

Four Pots Early-flowering Chrysanthemums, distinct.—1st, Mr. Chalmers, Lauriston Castle; 2nd, Mr. McMillan.

One Pot Eucharis amazonica.—1st, Mr. Mattison.

PLANTS AND CUT FLOWERS (NURSERYMEN).

Table Plants 30 feet × 8 feet.—The 1st prize for this very important exhibit is awarded to Messrs. Ireland & Thomas, Edinburgh, and generally acknowledged to be the finest table of plants ever exhibited in Edinburgh. The centre is relieved with fine palms of *Cocos Weddelliana*, *Geonoma racilis*, *Kentia Belmoreana* and *intermedia*, *Phoenix rupicola* *Alocasias* among others a new species), and others intermixed with *Crotons* represent a pleasing combination. *Crotons* are remarkable for their brilliant colour, Prince of Wales standing prominently above other plants as extra fine and much admired. *Dracenas*, *Asparagus*, *Marantas*, *Ferns* (especially *Adiantums*), *Davallias*, *Lastreas*, *Lomarias*, *Pteris*, &c., are well represented. *Anthuriums*, *Liliums* of sorts, *Eucharis*, *Odontoglossums* and *Cattleyas*, lighten up the foliage plants, and a margin of *Panicum variegatum*, *Caladium Argyrites*, *Cypripediums* form a pleasing and beautiful finish to this meritorious table of plants. Messrs. Thyne, of Glasgow, were placed 2nd with a table brilliant with *Odontoglossums* (the great profusion of these no doubt weakened a very fine exhibit), *Cattleya grandis*, and *Oncidium*, interspersed with *Liliums*, *Crotons*, *Dracenas*, *Cocos Weddelliana*, *Ferns*, &c., form a very imposing table—a line of *Caladium Argyrites*, back a line of *Isolepis gracilis*, which would have been more effective with creeping plants intermixed, formed the margin of the table.

Messrs. Laird, of Edinburgh, are 3rd with a very tastefully arranged collection in circular groups along the centre. *Crotons*, *Palms*, *Ferns*, and *Panacratium* were the most effectively arranged, and a margin of *Panicum Lycopods*, dwarf *Palms*, with *Ficus repens* form a tasteful finish.

Twelve Conifers, distinct.—The 1st prize was awarded to Mr. Butler, nurseryman, Greenock, who exhibits finely grown plants of the following, all in fine condition—*Retinospora pisifera aurea*, very finely coloured; *Cupressus Lawsoniana pyramidalis*, fine graceful form, contrasting finely with golden plants on each side; *C. Lawsoniana alba spica*, nicely tinted with yellow foliage; *C. Lawsoniana* var. *Fraserii*, *Retinospora obtusa*, fine species; *Thuopsis Nootkatensis*, *Pinus cembra rosafolia* (a distinct species); *Taxus elegantissima*, a neat plant; *Retinospora Lycopodoides* were all represented in this exhibit in fine form; Messrs. Laird, Edinburgh, had a good 2nd, in which *Retinosporas*, *Thuias*, *Junipers*, and *Pinuses* were represented in healthy well grown condition; Messrs. Stuart & Mein, Kelso, were 3rd, with a good collection.

Six Crotons.—The 1st prize was awarded to Messrs. B. Williams, of Holloway, with a fine centre plant of *Queen Victoria* (bush form), *Comtesse Warrenii*, *Formosus*, *Rodeckianus*, and *Williamsii*. Messrs. Ireland and Thomson are placed 2nd, with splendidly coloured specimens of *Prince of Wales*, *Marrion of Wales*, *Warnerii*, *Evansianus*, *Newmanii*, and *angustifolius*. Some comments by disinterested parties were made on the awards in this class.

Six Orchids.—1st prize awarded to Messrs. Ireland & Thomson, for the following:—*Cypripedium Ashburtonii*, *Vanda Kimballiana* and *cerulea*, *Odontoglossum vexillarium* and *grande*, in fine form; *Cattleya Gaskelliana*, finely bloomed. There was no exhibitor for 2nd prize.

For Six New and Rare Plants, not in commerce prior to January 1, 1889.—The 1st prize was awarded to Messrs. Ireland & Thomson, for *Cocos Pynaertii*, *Maranta Mooreana*, *Alocasia Thomsoni*, *Caladium Marie Freeman*, *Dracena* sp., and *Nepenthes Dicksoniana* ×; 2nd, Messrs. Williams, for *Cattleya Mossiana* (of gigas type), *Anthurium eburneum*, *Dracena*, *Dicksonia Lathamii*, *Alocasia Chantreirii*, *Pteris tremula elegans*; 3rd prize to Messrs. Laird for *Alocasia Lindenii*, *Asparagus plumosus cristata*; *Dracena Duchess of Portland*, finely coloured crimson and green, &c.

Twelve Plants for Table Decoration.—1st, to Ire-

land & Thomson, for a choice lot of finely-coloured Crotons (Golden Ring and Prince of Wales), Palms, Dracenas, and Pandanus. The 2nd and 3rd prizes were awarded to similar exhibits of much merit, Mr. B. S. Williams and Messrs. Laird being 2nd and 3rd in the order named.

Four Specimen Plants.—1st, to Messrs. Laird; and 2nd, to Messrs. Thyne for fine clean specimens.

For two Tree Ferns.—The 1st prize was awarded to Messrs. Dickson & Co.; and 2nd to Messrs. Laird.

CUT FLOWERS.

Twelve Spikes of Pentstemon.—Mr. Sampson is awarded 1st; and 2nd is Messrs. Stewart & Mein.

Six Chrysanthemums.—1st, Messrs. Laird (only exhibitor), for blooms of Edwina Molyneux, Mme. Desgranges; Mrs. G. R. Pitcher, Duchess of Buccleuch, G. W. Wirmig, Mdle. La Croix.

Twelve Spikes of Hollyhocks.—1st prize to Messrs. Alex. Kerr & Sons, Roxburgh, who had fine Gem of Yellows, Czar, Purple Prince, and Mrs. Edgar; 2nd to Messrs. Stewart & Mein; and 3rd to Geo. Wood, Hawick.

For Twenty-four Show Dahlias.—1st to Mr. R. B. Laird, who had fine John Hocking (yellow), Duke of Fife, Clara, Lustrous, Mrs. Langtry, and Mr. Gladstone; 2nd to Messrs. Clark & Son, Leeds, Mr. Gladstone, R. T. Rawlings, Henry Keith, and William Rawlings, were in fine bloom; the 3rd prize is awarded to Mr. Walker, Low Fell, Gateshead.

For Fancy Dahlias.—1st to Messrs. H. Clark & Son, who have a clean exhibit of fine blooms; Mrs. Sanders, Sunset, Prince Henry, and John Forbes, were among the best; 2nd prize awarded to Mr. Campbell, Blantyre; and 3rd prize to Messrs. R. B. Laird & Co.

Thirty Gladioli.—1st prize awarded to Mr. Campbell, Blantyre; they were a fine lot—Enchanters, Sceptre de Flore, Gigantem, Leviathan, Shakspeare, and Mr. Hardy, are of special merit. 2nd are awarded to Messrs. Stewart & Mein, with fine varieties, similar to those in 1st prize lot, and also of much excellence.

Thirty-six Roses.—1st prize awarded to Mr. Cocker, of Aberdeen, for an excellent collection exhibited in prime order, and greatly admired. Waban was exhibited for the first time in this country (an American variety), a blush-pink of great promise; Alfred Colomb, Her Majesty, Ulrich Brunner, Lady Mary Fitzwilliam, Duc de Rohan, Emily Haushburgh, Dr. Andry, Madame Eugénie Verdier, Marie Rady, Suzanne Rodocanachi, Madame Chas. Crapet, Comtesse de Serenye, Charles Lefebvre, Mrs. John Laing, A. K. Williams, La France, Marshal P. Wilder, Marie Verdier, Etienne Levet (considered the best on the board), Duchess of Bedford, Madame Hoste, Marie Magot, Marie Van Houtte, Duke of Edinburgh, Lady Ailsa, Earl of Dufferin, Viscountess Folkestone, Anne Wood, Marie Baumann, Souvenir d'Elise Vardon, Paul Jamain, Catherine Mermet; 2nd prize goes to Mr. Dickson, Belmont, for a fine collection, such as is so often seen from that firm; 3rd, to Mr. Smith, Stranraer, for an exhibit of much excellence.

For twenty-four Roses, 1st prize awarded to Mr. Cocker; and Mr. Smith, Stranraer, 2nd.

Twelve Trusses of Tea Roses.—Three of each. Mr. Cocker again led in this class, and Mr. Smith was 2nd.

Thirty-six Single Trusses of Dahlias.—Messrs. Laird have a fine exhibit, and are the only exhibitors in this popular class.

CLASS VIII.—CUT FLOWERS.

Cut flowers generally were a fine feature of the show. In the competitive classes—Hollyhocks, Dahlias, Marigolds, Pansies, Gladioli, &c., were all in presence in splendid form. Roses were also good, considering the season, and the wretched character of the weather.

Twelve Roses, distinct.—1st, Mr. Adam Brydon, Innerleithen; 2nd, Rev. W. Thompson, Kinglassie Manse, Fife; 3rd, Mr. J. Mellinder, Worksop.

Twenty-four Roses, distinct.—1st, Mr. A. Hill, Gray, Bath, Somerset; 2nd, Mr. D. Wallace, Rothesay; 3rd, Mr. Wm. Parlane, Golffhill, Ross.

Twelve Tea Roses, not fewer than six varieties.—1st, Mr. A. Hill, Gray; 2nd, Mr. Mellinder; 3rd, Mr. Brydon.

Twelve Fancy Pansies, distinct.—1st, Mr. A. Ollar, Campbellton; 2nd, Mr. W. Storrrie, Lenzie; 3rd, Mr. W. Adam, Blantyre.

Twelve Fancy Pansies, distinct.—1st, Mr. McCann, Cumnock; 2nd, Mr. Ollar; 3rd, Mr. Adam.

Twelve Bunches Violets, distinct.—1st, Mr. Frater,

Linlithgow; 2nd, Mr. Paterson, Linlithgow; 3rd, Mr. Sutherland, Slateford.

Twelve Trusses Chrysanthemums, not less than six varieties.—1st, Mr. Pearson.

Four spikes East Lothian Stocks.—1st and 2nd, Mr. Morrison, Archerfield.

Twelve Bunches Herbaceous Plants, distinct.—1st, Mr. J. Stewart, Lily Bank Cottage, Lennoxtown.

Eighteen Gladioli, not less than twelve varieties.—1st, Mr. J. Coulter, Warkworth, Northumberland.

Seven Spikes, Hollyhocks, distinct.—1st, Mr. R. T. Rae, Roxburgh.

Twelve Blooms, Hollyhocks.—1st, Rev. J. Middleton, Crailing.

Eighteen Show Dahlias, distinct.—1st, Mr. Spoor, Musgrave Cottage, Low Fell.

Twelve Show Dahlias, distinct, sent out by Keynes, Williams & Co.—1st, Mr. Spoor.

CLASS IX.—DINNER-TABLE DECORATIONS.

Only one exhibitor who shows a neat arrangement with choice flowers, chiefly Orchids and Ferns, in glasses, with a scroll on the cloth—a centre-piece (silver bowl) somewhat crowded, is filled with Orchids, mostly Cattleyas, pink Roses, and Ferns. The fruit is in small dishes—Pines and Melons at ends, black and white Grapes, at the sides—with Peaches at corners. The simplicity of this table is its strongest recommendation, it is effective and creditable to Messrs. Tod & Co., Maitland Street, Edinburgh.

CLASS X.—VEGETABLES.

Vegetables are remarkable for quality and quantity. For a collection of twelve distinct varieties, Mr. Pope, gr. to Earl Carnarvon, Highclere, Hants, was 1st; this exhibit was very fine, and comprised seventeen lots of twelve distinct varieties, Leeks and Celery being very fine, and shown in all the collections. The judges had much difficulty in deciding, the 1st lot, having fine Standard Bearer Celery, Green Globe Artichokes, Lord Keeper Onions, Ne Plus Ultra Beans, Satisfaction Potatos, Autumn Mammoth Cauliflowers, Duke of Albany Peas, New Intermediate Carrots, Perfection Tomatos, Student Parsnips, and Pragnell's Beet, with Oxonian Leeks, the Leeks being much shorter than in many of the collections. 1st, Mr. Pope, gr. to Earl Carnarvon, Highclere Castle, Hants; 2nd, Mr. J. Mair, gr. to Miss Talbot, Port Talbot—this was an excellent exhibit; Dobbie's Champion Leek, Veitch's Early Rose, Celery Eclipse, Cauliflower Cardiff Castle, Cucumber, Anglo-Spanish Onion, Veitch's Scarlet Model Carrot, Ne Plus Ultra Bean, Webb's Sensation Tomato, Duchess Pea, Yellow Turnip, Blood-red Beet, Satisfaction Potato. In this lot the Onions, Cauliflowers, Cucumbers and Potatos were very fine dishes, also Carrots and Leeks, and as near equal to 1st as possible. 3rd, Mr. Wilkins, gr. to Lady Theodora Guest, with very fine Ailsa Craig Onion, Giant White Celery, Lyon Leek, Autumn Giant Cauliflower, rather too large, New Intermediate Carrot and Satisfaction Potatos being the best dishes, these being very choice, followed by Cheltenham Green Top Beet, Ne Plus Ultra Beans, Lockie's Cucumber, Duke of Albany Peas, Perfection Tomato, and Student Parsnip. 4th, Mr. W. Harper, gr. to J. R. S. Richardson, Esq., Perth, and comprising some excellent samples of good culture, wonderful Leeks, Parsnips, Turnips, and Carrots, good Potatos and Beans, and considering the enormous competition in this class it was a most meritorious collection. There were others worthy of notice did space allow of doing so, these collections forming a most attractive exhibition.

Collection of Twelve Distinct Varieties.—1st, Mr. James Cocker, gr. to Sir William Wallace, Bart., Stranraer, with excellent Cabbage, Cauliflower, Onions, Peas, Turnips, well-grown Leeks, and Celery; 2nd, Mr. J. Low, gr. to J. Paton, Esq., Stirling, the best dishes being Onions, Carrots, Peas, Leeks, and Beet, this lot being little behind the 1st; 3rd, Mr. G. Potter, gr. to Mrs. Laidlay, North Berwick.

Two Cucumbers.—1st, P. Blair, gr. to the Duke of Sutherland, Trentham. The 1st lot was a new seedling sort, of a beautiful shape, deep green, and little spines with no neck; this will become a favourite exhibition Cucumber. 2nd, Mr. McIndoe, gr. to Sir J. Pease, Hutton Hall, with Lockie's Perfection.

The lot exhibited by Mr. Wiles, Banbury, should perhaps have been before those awarded the prizes. Mr. Pope also had a nice lot.

Six Varieties of Potatos.—1st, Mr. Gentleman, Armadale; 2nd, Mr. J. McFarlane, Barnard Cot-

tage, Alva; 3rd, Mr. Wiles, Banbury; and here we should have reversed the awards, Mr. Wiles' being free of spots, and a beautiful shape. Many of the Potatos shown were Snowdrop, Abundance, The Dean, Satisfaction, Reading Russett, Poritan, Matchless, Vicar of Laleham, Lord Tennyson, Best-of-all, Village Blacksmith, Mr. Breese, Lady Truscott, Edgecot Purple, and Matchless.

CLASS XI.

Vegetables, Market Gardeners.—1st, Mr. Anderson, Aberdeen, with immense Cabbages, good Turnips, Leeks, Carrots, and Cauliflowers; 2nd, Mr. John A. Murie, Craignullar Gardens, Edinburg, with a large collection, but smaller in size; 3rd, Messrs. Kerr & Sons, Edinburg.

CLASS XII.

SPECIAL PRIZES.

Including a variety of prizes offered by Messrs Sutton & Sons for products of their sending out.

Best Single Melon.—Duchess of Athole, 1st (Mr. Fairgrieve, Dunkeld), with Monarch, a nice fruit, well netted; 2nd, Mr. Harvey (Colonel Trotter, Morton Hall), with a green Monarch; 3rd, Mr. J. Day, Gallopway House, with a smaller fruit, but of exquisite flavour.

Messrs. Dobbie & Co., Rothesay, also offered prizes for collections of vegetables. 1st, Mr. McBean, gr. to J. C. Cuninghame, Esq., Johnstone; this was a grand lot, and splendidly grown, not a weak dish, 2nd, Mr. D. Logan, Castlelaw, Coldstream; 3rd, Mr. Fender, Crieff. There was a large number exhibited, and among them some most meritorious lots.

In the collection for amateurs only, Mr. Wm. Goodall, Errol, Perthshire, was 1st, with good Turnips, Onions, Celery, and Parsnips; 2nd, Mr. J. Henderson, Lurbert, very good Leeks, Celery, and Onions; 3rd, Mr. Hutchinson, Falkirk.

For the prizes offered by Mr. John Wilson of Hereford for Cranston's Excelsior Onion, there was a large competition among the growers of large bulbs for these prizes, some of them being of large size. For autumn sown, Mr. J. Forest, Lanark, was 1st with perfectly shaped bulbs; 2nd, Mr. J. Gray, Newfield, Kilmarnock; 3rd, Mr. Wiles, Banbury. For spring sown, 1st, Mr. J. Gray, Newfield; 2nd, Mr. J. Cocker, Stranraer; 3rd, Mr. Sharp, Freeland. A nice lot of vegetables occupying a large space was sent from Mr. J. Taylor, Bangholm Nurseries, also five large baskets of Apples.

Messrs. Deverill, Banbury, exhibited twenty-one large dishes of Onions of their celebrated strains, also Carrots and Oxonian Leek. The Onions were the finest in the show, and were prize-takers in several places, having been selected by Mr. Deverill for this exhibition, and were of great size and well finished, being of a good colour, so deficient in most Onions this damp season.

SPECIAL EXHIBITS.

These are numerous, of great extent, and made up the fine non-competing objects which helped to fill the main area of the building.

Taking flowering and foliage plants first, we find Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, Kent, with a table 30 feet by 5 feet, filled with novelties in Crotons and Caladiums; Begonias as cut blooms, seedling Begonia plants taken from the open ground, and a quantity of decorative plants in variety. Fine Caladiums were Raymond Lemoine, Mrs. Harry Veitch, La Lorraine, and Isis Rose. Strikingly coloured Crotons were Eugène Chantrier, Nestor, Inimitable, and Emperor Alexander.

Mr. John Downie, nurseryman, Edinburg, has a table 20 feet by 5 feet, filled with tuberous Begonias in variety, very robust plants, and good colours. Messrs. W. Cutbush, Highgate, London, a similar table with Bonvardias, Lilies, Palms, Ferns, &c.

Two Carex species were worth special mention, C. japonica variegata, a dwarf graceful plant, with very narrow leaves, having a wide margin; and C. j. marginata, a plant with similar leafage, but 1½ feet high.

Well-fruited Apple, Pear, and Plum trees, together with kitchen-garden produce, and fruit, were shown by Messrs. Alex. Cross & Sons, Glasgow.

As only W. J. Birkenhead can show them, was remarked a notable lot of hardy and exotic Ferns, mostly rare and of much beauty. We may mention Gymnogramma schizophylla gloriosa, a variety with partially pendant divaricate fronds; Gleichenia dicarpa longi-pennata, a good plant entirely lacking in coarseness; Polystichum Braunii, Cyrtomium attenuatum, Lygodium scandens, and Japonicum very graceful species. One of his tables was filled with a

representative collection of British Ferns having deviations from the types in the form of crested or tasselled fronds. A large table was set out by Messrs. T. Methven & Sons, Edinburgh, with Crotons, Dracenas, Lilies, Palms, Adiantum, and bordered with Caladium argyrites and Panicum variegatum.

The exhibit of Messrs. B. Williams & Sons, Upper Holloway, London, was remarkable for the rarity of most of the plants. These included Cyripedium, Nepenthes, Sarracenia, Phrynium variegatum, a Ginger Wort with green and white variegated leaves, Croton Princess Waldeck, a yellow and green leaf, very effective; Dracena Doucetti; Aralia spectabilis, a stove species with very long stiff, pinnate, fern-like foliage, and Phoenix Robellini.

A very miscellaneous exhibit was that of Messrs. Dickson & Co., Waterloo Place, Edinburgh. It consisted chiefly of Lilies, cut Roses, Phlox, Bouvardias, Pansies, Carnations, Begonias, Tree Ferns, Conifers, Dahlias, and a great mass of decorative plants for the border or greenhouse.

Messrs. J. Dickson & Sons, 32, Hanover Street, Edinburgh, had a small collection of Conifers, inclusive of variegated Cupressus, Thuja dolabrata, Araucaria, Japan Maples, and Euonymus.

Cactus Dahlias formed the backbone of the large area occupied by Messrs. H. Cannell & Sons, Swanley, Kent, and these were set up in flat bunches of six blooms each, and in great variety. Begonias of the best forms, growing in 48's, well bloomed and dwarfed, were also shown by them.

Mr. J. Cocker, Aberdeen, had a very fine collection of Carnations, Picotees, Pansies, the white La France Rose, Auguste Guinoisseau; and many other show boxes filled with Roses of excellent quality.

Mr. J. Forbes, Hawick, showed Begonias, Hollyhocks, Crimson Bedder Anterrinum, and show and border Carnations; 200 varieties of Dahlias, sixty-four of Violas, and many French and African Marigolds, together with selected kinds of Celery, Leek, Onions, &c.

Messrs. Hugh Dickson, Belfast, had boxes of Rose John Laing in fine form for the season. Messrs. Stuart & Mein, Kelso, made a display with Hollyhocks, Lilliums, Michaelmas Daisies, &c.

Mr. H. Deverell, Banbury, filled a large space with his enormous bulbs of onions, his Ailsa Craig taking first prize and a gold medal. A plentiful collection of Apples, Pears, and bottles of Cyder and Perry was supplied by Mr. John Watkins, Hereford.

The collection of hardy flowers from Mr. Cuthbertson, nursery near Rothesay, is deserving of special mention for the good things it contained. There were Senecio pulcher, Cimicifuga racemosa, Eucomis punctata, Mimulus Pansy Mistress Cuthbertson, a purple flower of perfect shape, having yellow margin, Centaurea Orientalis atropurpurea Veronica longifolia var. subsessilis, the best for autumn; Ecomicon chionantha, with white Poppay-like flowers, and leaves like the Coltsfoot; Dracoccephalum austriacum, a fine flowering autumn border plant, rosy purple flowers in long spikes; Chelone obliqua, &c.

Dahlias, Carnations, show and border varieties, Pansies, Hollyhocks came in quantity from Mr. Campbell, Bantyre. An exhibit similar in character came from Messrs. Laing & Mather, but this one included some designs in flower gardens, with beds filled with self-coloured Carnations. Messrs. F. Sander & Co., St. Albans, showed a life-sized picture of the true and rare Cattleya labiata vera, the autumn flowering species supposed to have been lost. All the forms of it, ranging from white to rosy purple, were shown in the picture. Another picture was of the rare and beautiful Dendrobium Phalenopsis var. Schroderiana, which came once to Kew many years ago, and has not been reintroduced.

The exhibit of Messrs. W. Thomson & Sons, Clovenfords, was a large one, consisting of Dracenas, Crotons, Aralias, Palms, Sarracenas, Ferns, Caladiums. Interspersed were groups of fruit in variety to show the excellence of the Clovenfords' manure. Little groups of choice species and varieties of Orchids added richness to the whole.

The Royal Horticultural Society sent from the Gardens at Chiswick fifty dishes of Apples, a collection of fruits of Plums and Tomatos—a good and correctly-named lot.

Sussex Apples were shown by Mr. Rust, gr., Eridge Castle, extensively; also some Pears, showing much rust, and Plums.

Mr. J. Walker, Cam Farm, Surrey, showed a collection of Apples, many of grand size and good quality, especially early ones. Pears, also shown largely, were clean and good, although, in some instances, not fully grown.

A large and very fine lot of Apples came from Messrs. G. Bunyard & Co., Maidstone, size and colour good.

An equal amount of space was taken up by Messrs. Cheal & Sons, Crawley, Sussex, with Apples; he also showing twenty-six dishes of Pears. Dahlias were likewise shown by this firm.

Mr. Alex. Lister, Rothesay, showed Pansies (200) of show quality, fancy mostly; Asters, Marigolds, and Matricaria inodora, with largish flat flowers.

Mr. J. R. Thyne, Kelvin Grove, Glasgow, had a mixed table of plants, but largely consisting of Odontoglossum crispum, various Cattleyas, Lilies, Crotons, Ferns, &c.

MARKETS.

COVENT GARDEN, September 10.

MARKET still heavily supplied. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, 1/2-sieve	1 0	3 0	Melons	0 6	1 0
Damsons, 1/2-sieve	1 6	...	Peaches, per dozen	1 6	8 0
Grapes	1 0	2 6	Pine-apples, St. Michael, each	2 0	8 0
Kent Cob, 100 lb.	30 0	...	Plums, 1/2-sieve	1 0	2 6
— Filbert, 100 lb.	30 0	35 0			
Lemons, per case	20 0	35 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Asters, French, 12 bunches	8 0	10 0	Marguerites, per doz.	2 0	4 0
— English, per dozen bunches	1 6	3 0	Mignonette, doz. bun.	1 6	3 0
Carnations, 12 bunches	4 0	6 0	Orchids:—		
Carnations, 12 blms.	0 9	1 6	Cattleya, 12 blms.	6 0	12 0
Chrysanthemums, 12 bunches	1 0	3 0	Odontoglossum crispum	12 bunches	3 0
— 12 bunches	3 0	6 0	Pansies, 12 bunches	0 6	1 6
Cloves, per dozen blooms	0 6	1 0	Pelargonium, scarlet, per 12 bun.	3 0	4 0
Cornflower, 12 bunches	1 6	2 0	— 12 sprays	0 6	0 9
Eucharis, per dozen	2 0	4 0	Poppies, various, per dozen bunches	1 0	2 0
Gallicardias, 12 bunches	2 0	4 0	Pyretbrum, 12 bunches	2 0	3 0
Gardenia, per dozen	2 0	4 0	Roses, Tea, per dozen	1 0	3 0
Gladioli, 12 bunches	4 0	12 0	— coloured, dozen	2 0	4 0
Heliotrope, 12 sprays	0 3	0 6	— yellow (Margé chals), per doz.	2 0	6 0
Lavender, doz. bunch	6 0	12 0	— red, per dozen	1 0	2 0
Lilium var. 12 bun.	5 0	12 0	— various, doz. bun	2 0	6 0
— "Harrisi, doz.	3 0	4 0	Sweet Sultan, 12 bunches	1 6	3 0
Liliums, various, doz.	1 0	3 0	Sweet Sultan, 12 bun.	2 0	3 0
Maiden Hair Fern, 12 bunches	4 0	9 0	Tuberoses, 12 blms.	0 3	0 6

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	0 4	0 6	Lettuces, per doz.	1 0	1 6
Beans, French, lb.	0 3	0 4	Mushrooms, punnet	2 0	...
Beet, red, per dozen	2 0	3 0	Mustard and Cress, punnet	0 4	...
Carrots, per bun	0 6	...	Parsley, per bunch	0 4	0 8
Cauliflowers, each	0 4	0 6	Shallots, per lb.	0 6	...
Celery, per bundle	2 6	3 6	Spinach, per bushel	3 6	...
Cucumbers, each	0 4	0 9	Tomatos, per lb.	0 6	0 9
Endive, per dozen	2 0	3 0	Turnips, per bunch	0 6	...
Herbs, per bunch	0 4	...			

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Will some reader who has had special experience, be so kind as to name a few of the best plants to grow for flowers and foliage in a rather dark greenhouse in the midst of London? *Baconian*. [We can speak for Fuchsias, hardy Ferns, Camellias, and bulbous plants such as Roman Hyacinths, Crocuses, &c.]

Will any of your correspondents kindly give their experience of Pyramid Apple and Pear-growing, with pruning and cultural directions, as there seem to be many different opinions on this matter? *B. B.*

NOTICES TO CORRESPONDENTS.

. Owing to the extreme pressure on our space, many communications and reports of societies are held over.

Books: *A. B. Williams' Orchid Manual* (Williams, Upper Holloway); *Baines' Greenhouse and Stove Plants* (Murray).—*G. P. Oliver's Lessons in Elementary Botany*; *Masters' Botany for Beginners*.

CRLERY DISEASE: *S. C. L.* The plants are attacked by a fungus, *Puccinia bullata*; pick off all infected leaves, and burn them.

CATERPILARS: *D. S.* No. 1, not received; No. 2, spring canker-worm (*Anisopteryx vernata*), when mature, burrows in the ground—the female moths are wingless; No. 3, Blind-eye Sphinx (*Imerianthus exocatus*); this, when mature, also burrows—it is comparatively rare.

GRAPES SHANKING: *A. B. C.* The cause of this is generally some error in the cultivation. See correspondence in back numbers of this journal.

MARKET MEASURES: *D. O. C.* Chicago, full details are given annually in the *Gardeners' Chronicle*, in one of the early numbers. Half-sieve = 14 imperial quarts; Tasmanian Apples, case containing 250; Cherries, Gooseberries, half-sieve = 14 imperial quarts; Lemons, case, 240 to 250; Celery, bundle = 20 heads; Mushrooms, punnet = basket 7 inches across 1 inch deep; Mustard, ditto; Seakale, basket, 12 to 18 heads; Turnips, bundle, one dozen; New Potatos, 6s. to 8s. per cwt.; old Potatos, £7 per ton of 20 cwt. = 2240 lb. Get your countrymen to adopt the sensible metrical system, or any that is uniform and not so exasperatingly idiotic as our own.

NAMES OF FRUITS: *W. F.* Peach Bellegarde.—*W. W.* 1, Purple Gage; 2, Denyer's Victoria; 4, Lawson's Golden; smallest Damson, the Farleigh; the larger Damson, Shropshire; 6, decayed. *T. C.* English Codlin.—*Old Subscriber.* 5, cannot recognise; 6, Jargonelle.

NAMES OF PLANTS: *G. W.* Begonia leaves, 2, Adolphe Pollack; 3, President de Burelle; 4, Héène Under; 5, Splendens; 6, Duc de Brabant.—*Nemo.* Cornus mas.—*S. R.* Lung (*Calluna vulgaris*).—*E. M.* 1, Galeopsis Ladanum; 2, Linaria minor; 3, Bartsia odontites. The fungus on leaves of Bartsia is the teleutospore stage of *Coleosporium euphrasie*.—*J. K.* 1, Impatiens Roylei; 2, Phyllis capensis.—*H. E.* Your specimens have been mislaid, please send others.—*Old Subscriber.* 1, Rosa rugosa; 2, Thalictrum majus; 3, Achillea ptarmica, double; the Phloxes send to some nurseryman.—*L. C.* 1, Galeandra Devoniana; 2, Mormodes buccinator atropurpurea.—*G. C.* The specimens were withered beyond recognition.—*H. R. H.* *Lælia crispa*.

PEARS CRACKING: *A. W.* The cracks are due to a fungus which attacks and kills the superficial parts of the Pear. This being so, the outer parts cannot grow in proportion to the inner parts, and the pressure they exert in their growth causes the dead and dying portions of the rind to crack.

VINE BORDERS AND TRENCHING:—*H. B. P.* In a general way, the staple soil of a garden or field is not fit for Vine growing. It may be good as far as the top goes, but being shallow, and having a subsoil of an infertile character, its depth of good soil must be increased by the addition of fertile soil from a distance. Supposing that there is a depth of 3 feet of good soil, the workman in trenching should not, at the most, throw more than two spits upwards, that is, he would leave the middle spit at the same depth as it was before digging, merely moving it forward the width of the trench, and the top soil should remain at the top, and be inverted only, the bottom soil being deeply dug and left *in situ*. Much will depend on the proper method of trenching the land, or only bad results will follow. It is a great mistake and a common one to turn the best soil—the upper layer, to the bottom of deep trench, and out of all ready approach of the roots of plants, by one or two layers of soil deficient in plant food. In kitchen gardens which have been long under the spade, this cannot well occur, and deep trenching is usually followed by good results. In new land, the depth of good soil is best increased by merely bridging an inch or two of the unmoved subsoil to the surface about once in three or four years, and always putting rough dung, garden refuse, &c., at the bottom of the trenches. This mode of bringing about the amelioration of the soil is gradual, but it is effective.

VINES TURNING BROWN: *J. F.* The young shoots are affected with Vine mildew (*Oidium*). Dust them with sulphur-powder, and paint the pipes with sulphur.

WILLOWS: *G. N.* It is almost impossible to say what they are, but certainly neither of them is ordinary *S. caprea*. We will endeavour to name them next week.

COMMUNICATIONS RECEIVED.—*J. R. R.*—*J. H.*—*M. de Candolle*, Geneva.—*F. D.*—*P. L. S.*—*J. S.*—*H. W.*—*A. P.*—*P. L. S.*—*A. S. M.*—*E. C.*—*J. M. McF.*, Philadelphia.—*A. B. M'D.*—*H. H. D'O.*—*E. H. K.*, Haurlem.—*R. Br.*—*E. T.*—*J. B. T.*—*W. & S.*—*D. McA.*, Melbourne.—*R. A. R.*—*H. T.*—*L. C.*—*J. B. W.*—*Soboy*—*H. E.*—*G. K. G.*—*M. F.*—*G. N.*—*R. S. G.*—*H. T.*—*Ted.*—*J. D.*—*J. H.*—*W.*—*M. T.*—*F. C. M.*—*F. R. L.*—*J. B.*—*V. C.*—*W. W.*

DRAWINGS, PHOTOGRAPHS, &c., RECEIVED.—*A. O. W.*, with thanks. FLOWER SHOW REPORTS RECEIVED.—*Kingston Horticultural* and others too numerous to particularise.

HORTICULTURAL SOCIETY.



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OF LOTHIAN, K.T.



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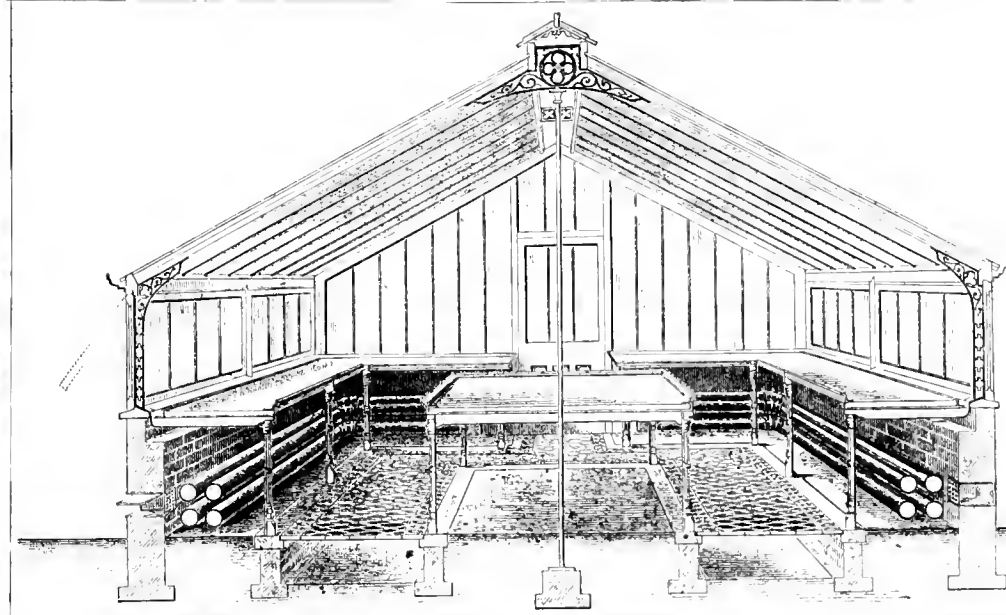


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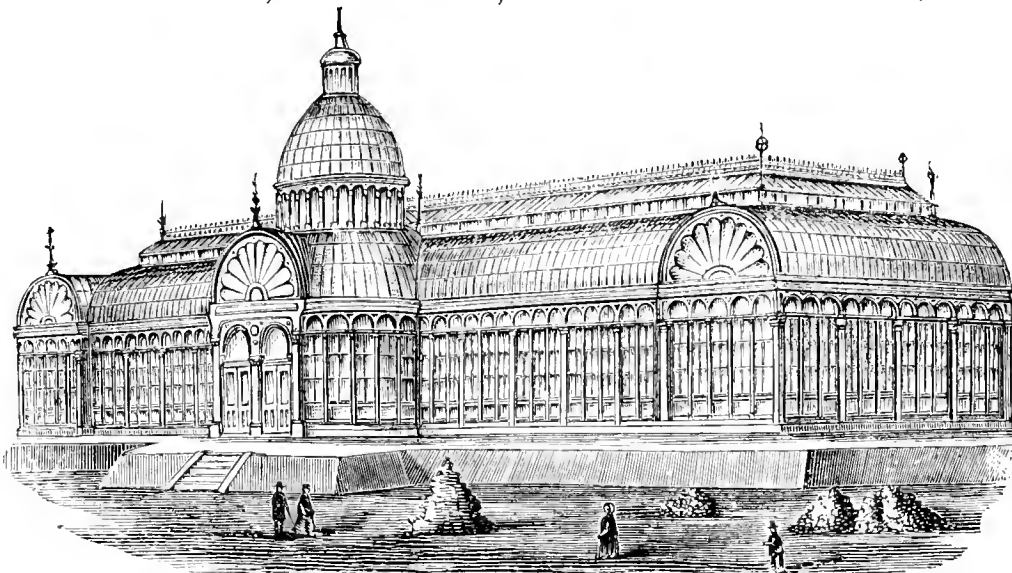
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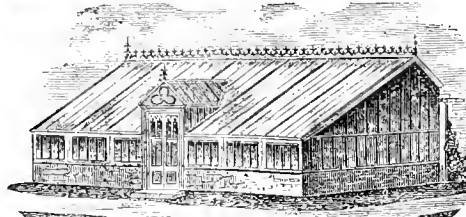
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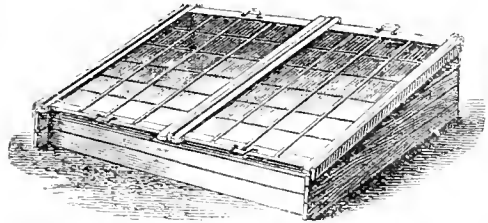
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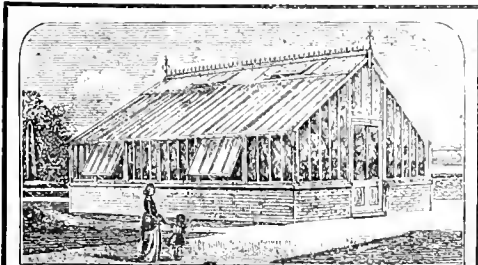
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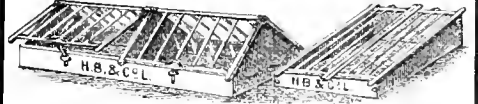
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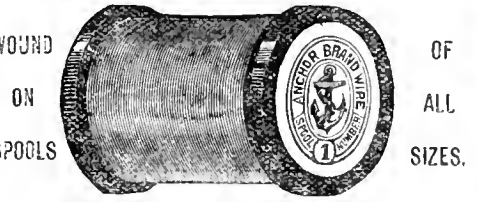
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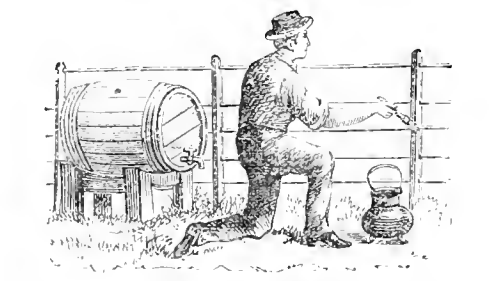
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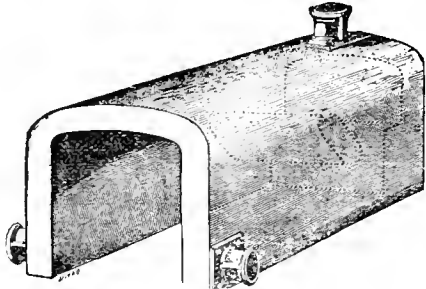
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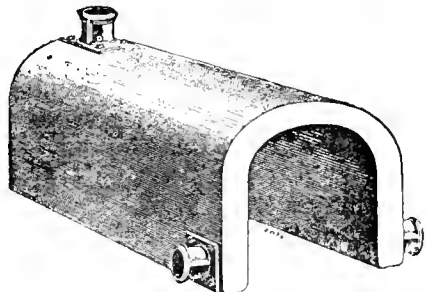
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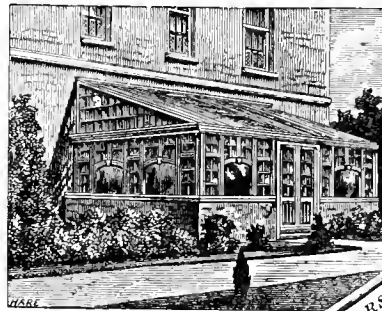
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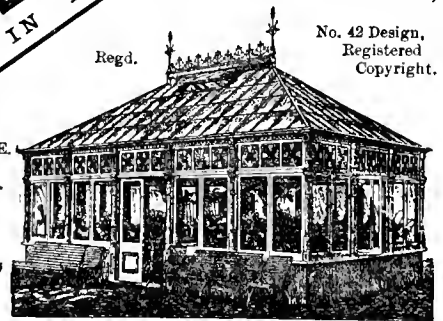
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Saves many times its cost in labour alone. One application will keep the walks clear of weeds for a whole season at least. Can be applied with an ordinary watering-can.

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The Gardens, Moygallon House, Gilford,
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It is certainly the best preparation for destroying moss I have ever seen.

(Signed) Yours faithfully,
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Is Guaranteed to effectually Destroy all Moss on Lawns, &c., while at the same time it will stimulate and increase the Growth of the Grass.

1 Gallon as sold will make 15 Gallons for use, and is sufficient to do 110 square yards. Can be applied with an ordinary watering-can. Saves many times its cost, and insures a perfect sward.

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DEAR SIR,—In reply to your favour, I have thoroughly tested your Moss Eradicator, and find it what you describe. I consider it a most valuable preparation, and when better known will be extensively used; whilst it completely kills the moss, in my opinion, it also acts as a stimulant to the grass.

(Signed) JOHN STRACHAN, Florist.

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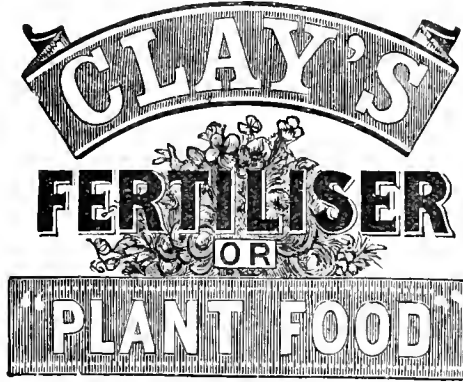
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The most reliable and best of all Insecticides for destroying Insects and Vermin on Plants and Fruit Trees, also on Animals, and Birds; and as a Disinfectant & Bleacher in Washing Clothes. Full Directions on the Labels of each Bottle.

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respectfully give notice of this extensive SALE which
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future Advertisements.
The Auctioneers have personally visited the nurseries and
desire to call attention of intending purchasers to this Sale, as
it is undoubtedly the most important Auction of Nursery
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An inspection will well repay a visit by those contemplating
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May be viewed. Catalogues had on the Premises, and of the
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worth, on THURSDAY, October 8, thousands of young
CONIFERS, for growing on, and other Stock.
Catalogues of the Auctioneers, 67 and 68, Cheap-side,
London, E.C.

Eltham.
CLEARANCE SALE of GREENHOUSE PLANTS, FERNS,
TWO Span-roof GREENHOUSES, Span-roof PIT, GAR-
DEN FRAMES, PITS, IRON HURDLES, GARDEN SEATS,
and other items.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, on the Premises, New-
lands, Eltham, 10 minutes' walk from New Eltham Station,
on SATURDAY NEXT September 26, at 3 o'clock.
On view day prior and morning of Sale. Catalogues had on
the Premises; and of the Auctioneers, 67 and 68, Cheap-
side, E.C.

Bagshot.
HIGHLY IMPORTANT THREE DAYS' UNRESERVED
SALE of beautifully-grown and well-rooted NURSERY
STOCK, which has been carefully prepared for removal,
and specially selected for this Sale, by order of Messrs.
John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will
SELL BY AUCTION, on the Premises, the celebrated
Bagshot Nurseries, Bagshot, Surrey, close to Bagshot Station,
on WEDNESDAY, September 30, and two following days, at
12 o'clock each day, without reserve, several acres of NUR-
SERY STOCK, grown to the greatest perfection, and exceedingly
well-rooted, comprising a variety of Conifers, splendid speci-
mens, 4 to 7 ft., particularly adapted for effective planting;
well-colored Golden Retinosporas; very fine specimen Gold
and Silver Variegated Hollies, 4 to 6 ft.; five y-grown ex-
amples of Waterer's Holly; Standards and Pyramids of single
specimens; 1000 Green Hollies, 3 to 5 ft.; very fine English
Yews, 2½ to 3 ft.; 20 0 named Rhododendrons, 2 to 2½ ft.,
bushy plants of the best and newest kinds; Ponticum Rhodo-
dendrons in quantity; 3000 Spruce Firs, 2½ to 4 ft., and a
quantity of larger plants adapted for Christmas Trees; 5000
Standard Ornamental Trees, 8 to 12 ft.; Purple Beech and
Limes, 10 to 12 ft.; thousands of Flowering Shrubs; and other
Stock.

Purchasers will be allowed until December 31, 1891, for the
removal of their lots.
May now be viewed. Catalogues can be obtained on the
Premises, or on application to the Auctioneers, 67 and 68,
Cheap-side, E.C.

The Chilwell Nurseries, Chilwell, Notts.
Three-quarters of a mile from Beeston Railway Station,
Midland Railway.
IMPORTANT SALE of EVERGREENS, CONIFERAE, &c.,
growing upon two branch nurseries which are required for
building purposes by order of Messrs. J. R. Bear & Sons.

MESSRS. PROTHEROE AND MORRIS are
instructed to SELL BY AUCTION, on the Premises as
above on THURSDAY, October 1st, at 1 o'clock precisely, 1,000
specimen GOLDEN YEWs, a fine collection of Green and
Variegated HOLLIES, 900 Bushy AUCUBAS, specimen and
half-specimen RHODODENDRONS, of the finest named varie-
ties, thousands of SMALL SHRUBS for potting or growing on,
300 YUCCA FILAMENTA VARIETA the largest number of
this scarce plant ever offered, 4,000 LAURELS of sorts,
1,200 CUPRESSUS, including 400 C. ARGENTEAE, perfect
specimen Standard and Dwarf ROSES, Standard THORNs and
other Stock.

This Sale is especially worthy of attention owing to the
high-class character of the Stock, all of which has been
recently transplanted and grown with plenty of room.
The Golden Yews and Yuccas, for which the Nurseries have
long been famous, are the finest lot ever offered by Public
Auction.

May be viewed one week prior to the Sale. Catalogues
obtained on the Premises, and of the Auctioneers, Cheap-side.

Sunningdale, Berks.
ANNUAL SALE, without reserve.—SIX DAYS' ABSOLUTE
CLEARANCE SALE of several acres of beautifully-grown
and thriving young NURSERY STOCK, carefully prepared
for removal; by order of Mr. Charles Noble.

MESSRS. PROTHEROE AND MORRIS will
SELL BY AUCTION, on the premises, The Nurseries,
Sunningdale, close to Sunningdale Station, on MONDAY,
October 5, and five following days, at 12 o'clock precisely each
day; a splendid lot of Standard and Bush Rhododendrons,
of the best kinds, many of them extra fine specimens for which
these Nurseries are so famed; good bushy Ponticum Rhodo-
dendrons, 1 to 2½ feet; Flowering Shrubs, in great variety.
Many thousands of Conifers, 3 to 5 feet, consisting of Cupressus,
Thuja, and Myrica, specially adapted for hedges or borders; a
large assortment of specimen Trees and Shrubs, including
Golden Retinosporas, variegated Hollies, Abies, and others for
effective planting. 10 0 Oval-leaf Privet; a large quantity of
Mahon Aquifolium, Hardy Heaths, Ivies; a fine collection of
Standard and Pyramid Apples, Damsons Pyramid Pears,
Goo-cherries and currants of the most approved kinds; Cob
Nuts, and other Stock.

Luncheon will be provided for intending purchasers, and
arrangements can be made with Mr. Noble to lift and forward
lots to all parts of the Kingdom at the mere cost of labour in-
curred and material used.

The Stock may now be viewed. Catalogues can be obtained
on the Premises, and of the Auctioneers and Valuers,
67 and 68, Cheap-side, London, E.C.

Liverpool.
PRELIMINARY NOTICE.
By order of the executors of the late Mr. George Cunningham,
The FIRST PORTION of the extensive NURSERY STOCK,
consisting of FRUIT and FOREST TREES, EVER-
GREEN and DECIDUOUS ORNAMENTAL TREES and
SHRUBS, in great variety.

MESSRS. PROTHEROE AND MORRIS beg
to give notice of this IMPORTANT SALE, which is
fixed to take place on the Premises, the Oak Vale Nurseries,
Old Swan, Liverpool, on MONDAY, October 19, and THREE
FOLLOWING DAYS.

The Stock may be viewed any time prior to the Sale.
Catalogues may be had on the Premises, and of the Auctioneers,
67 and 68, Cheap-side, London, E.C.

Dutch Bulbs. Dutch Bulbs. SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

In Large and Small Lots, to suit all Buyers. MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half-past 12 o'clock precisely each day.

Thursday next.—Special Trade Sale of Dutch Bulbs. MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 24, at half-past 12 o'clock precisely, a large consignment of BULBS just received from well-known farms in Holland, in splendid condition, and specially lotted for the Trade and other large buyers.

Valuable Collection of Established Orchids MR. J. C. STEVENS has received instructions from the Executors of the late G. Neville Wyatt, Esq., of Lake House, Cheltenham, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY, October 21 and 22, at half-past 12 o'clock precisely each day, his highly important and valuable COLLECTION of ESTABLISHED ORCHIDS (with-out the least Reserve), which contains many fine things, amongst which will be found:—

- Cypripedium Mooreana Laelia Picheri
" Mesasresiana Masdevallia Veitchii grandiflora
" Chauteni Angolva Breckelii sanguinea, grand form
Oncidium Ornithorhynchum Oncidium incurvum album
Batemannia Burtii Ada aurantiaca
Cyclogyne cristata lemouiana Laelia Wyattiana
" splendid specimen Cattleya Mendelii, including many fine forms
Cypripedium hirsutissimum " Skinneri oculata
" splendid specimen " exoniensis
Lycaste Skinneri alba, several " gigas
" plants " Ga-belliana var. Dal-niense
Odontoglossum Rossi Amesianum Vanda Kimbouldiana
" uru-Skinneri, splendid " Sandeniana, several
" specimen plants
" ramosissimum plants
Cattleya labiata, autumn-flowering variety, true Saccolabium Heathii, extremely rare
Anthurium Scherzerianum, Cologyne cristata, Chats-worth var.
Lake House variety, grand plant &c., &c., &c.

On view morning of Sale, and Catalogues had.

Portland, near Shrewsbury. To NURSERYMEN and OTHERS.

MESSRS. LYTHALL, MANSELL, AND WALTERS have been instructed by the Trustee of the Will of H. J. Oldroyd, Esq., deceased, to SELL by AUCTION, at the George Hotel, Shrewsbury, on MONDAY, September 23, 1891, at 4 for 5 o'clock, p.m., in one or two Lots as may be determined at the time of sale, the attractive and very valuable FREEHOLD RESIDENTIAL PROPERTIES known as PORTLAND HOUSE and PORTLAND NURSERIES.

The charmingly-situated and desirable Freehold Residential Property known as PORTLAND HOUSE, standing in its own grounds, with Stabling, Pleasure Grounds, and productive Kitchen Garden, comprising an area of 1a. 1r. or thereabouts, and within one mile of the centre of the town of Shrewsbury, famed for its Royal Free Grammar Schools, which afford unrivalled educational advantages. The residence, which is well-built, and in good order, contains Entrance Hall, 3 Reception Rooms, viz., Dining Room, Drawing Room, and Breakfast Room; 8 Bedrooms, Bath Room, with hot and cold water supply; Lavatory, and w.c., Large Kitchen, Back Kitchen, Housemaid's Pantry, Larder, Beer and Wine Cellars, Apple Room, Pantry, and Coal House. Gas is laid on in each room in the house, Pump for hard water, and Tanks for soft water. There is a Coach House for 3 carriages, 2 Loose Boxes, with Hay-lofts over.

Tennis Lawn and Pleasure Grounds are tastefully arranged and planted with choice specimens of ornamental trees and shrubs, and, having for many years been in the hands of the late proprietor have received more than usual attention.

Kitchen Garden is productive and well-stocked with fruit trees of the choicest specimens of Pears and Apples known, and has good old-established Asparagus beds. The Property is now in hand, and possession will be given upon completion of purchase. It has a south aspect, and the approach to the town is through the best and most fashionable part.

Also a Valuable Property adjoining the above, for many years known as PORTLAND NURSERIES, comprising a substantial Modern Residence, containing Entrance Hall, Dining Room and Drawing Room, four Bedrooms, Kitchen, Back-Kitchen, w.c., Cellar, Yard, &c., with Greenhouses, Brick Pits, Potting-House, Offices, Out-buildings, and Nursery Ground, the whole comprising an area of 4 acres, or thereabouts, let on lease to a highly respectable and thriving tenant, and, as such, is a splendid opportunity of securing a sound and permanent investment.

To be viewed by Cards only, to be obtained of the Auctioneers. N.B.—If desired, a portion of the Purchase Money can remain on Mortgage at 4 per cent.

The Property will be sold subject to Conditions of Sale. Copies of the printed Particulars, with Plan, View, and the Conditions of Sale, may be had on application to Mr. GEORGE POWELL, Solicitor, Upton-upon-Severn; or Messrs. LYTHALL, MANSELL, and WALTERS, College Hill, Shrewsbury, and Bingley Hall, Birmingham.

MESSRS. BYRON and RANGELEY are instructed by J. Burton Barrow, Esq., Ringwood Hall, near Chesterfield, Derbyshire, to SELL by AUCTION as above, on WEDNESDAY, October 7, 1891, a very valuable collection of STOVE and GREENHOUSE PLANTS, including Palms, Azaleas, Camellias, Ferns Tea-scented and other Roses, and a choice collection of many other varieties.

Catalogues are in course of preparation, and can be had from the Auctioneers, 5, Low Pavement, Chesterfield, on week previous to Sale.

Nursery Stock—Three Days' Sale by Auction. MR. H. J. E. BRAKE will SELL by AUCTION, to Clear Ground for Building, on WEDNESDAY and THURSDAY, September 23 and 24, close to Fleet Station, Hants; and FRIDAY, September 25, at Farnborough, at 1 for 2 o'clock.

King's Acre Nurseries, near Hereford. IMMENSE SALE of UNUSUALLY WELL-GROWN FRUIT AND FOREST TREES, &c. Without the least reserve. As a portion of the Land will shortly be offered for Sale for Building purposes, it is absolutely necessary to clear the ground.

ALEXANDER, DANIEL, SELFE, AND CO., will SELL by AUCTION, on the Premises, as above, on TUESDAY, WEDNESDAY, and THURSDAY, October 20, 21, and 22, 1891, at 11 for 12 o'clock precisely, several acres of first-class NURSERY STOCK. Further particulars in future announcements, but the stock may be viewed at once. Catalogues may be obtained at the Nurseries; or of the Auctioneers, Corn Street, Bristol, and 31, Old Jewry, London, E.C.

Notice. HIGHLY IMPORTANT FIVE DAYS' UNRESERVED SALE of beautifully grown NURSERY STOCK, all well-rooted, and carefully prepared for removal, and specially selected for the Sale. By order of Messrs. Isaac Matthews & Son.

MR. JOHN OAKS, Ash, will SELL by AUCTION, on the Premises, at the far-famed Baginbun Tite Oaks and Milton Nurseries, on OCTOBER 21 and FOLLOWING DAYS, without reserve, several Acres of NURSERY STOCK, grown to the highest perfection. The Nurseries are in an extremely cold situation, and all the trees are perfectly hardy, and grown to the highest perfection. Extremely well-rooted and well-furnished Hoigens, Common, Maderiensis, Silver, and Guild Hollies in variety, 1,000,000 Rhododendrons various, a large quantity of all leading varieties of Conifers, Evergreens, &c., suitable for Ornamental Planting, Parks, Cemeteries, Pleasure Grounds, &c. Large quantities of Thorn, Quack, Ash, Elm, Alder, Privet, Austrian Pines, Spruce Fir, Chestnuts, Willows. All other trees for Woods and other plantations.

Catalogues seven days prior to Sale on application to the Nurseries, Milton, Stoke-on-Trent. Milton is the nearest station, L. & N.W. Railway. All trains met.

To Gardeners and Nurserymen.

TO BE SOLD, the LEASE of a GLASS NURSERY, in full working order. Genuine bargain.—Apply, by letter, to Mr. NOPLEY, 240, Barry Road, Dulwich, S.E.

FOR SALE.—The LEASE of a small NURSERY, about eighteen years to run. Ground rent, £2 8s per year. Three Span-houses, 33 feet each; one bank, 36 feet; one ditto, 52 feet. G. HABBERT, 16, Grove Lane, Camberwell, S.E.

To Nurserymen, Florists, Tomato, Cucumber, and GRAPE GROWERS.

FOR SALE, owing to retirement of owner, a BIJOU FREEHOLD NURSERY, in one of the most fashionable and rising suburban places. One Acre of Land, compact Seven-Roomed Cottage, 14 Glass-houses, heated with hot-water; Stabling, &c.; every convenience for carrying on the business. Net Profit, for many years, upwards of £300 per annum. Price for the place as it stands, £1,150—a large amount can be left at 4 1/2 per cent. Is suitable for a general emman. Apply, by letter, to Mr. DAVISON, 3, Circus Place, E.C.

GENUINE SEED and FLORIST BUSINESS, situate main-road position. Large double-fronted Shop and 6-roomed House, with Greenhouse 34 feet by 13 feet; lean-to Conservatory, and stabling at rear. Doing nearly £2000 per annum. Lease over ten years. Price £300. Stock and Fixtures (with Horse and Van) at valuation. There is also a Nursery within five minutes' walk of above, containing 1 large Greenhouse, 61 feet by 15 feet, with room to build others; Stabling and Shed, &c., which can be rented. Purchaser can have immediate possession. Satisfactory reasons for leaving. Apply to R. PEKITT, Estate Agent and Valuer, 41, Wellington Street, Woolwich.

NURSERY BUSINESS, FOR SALE, together with about 3 acres of rich loamy land, with glass-houses and pits, packing shed, offices, store, work room, &c. The land is well laid out in quarters, borders, and beds, with hedges for shelter and ornament, situated close to the south coast, and within half a mile of an important railway junction. There is a very rapidly-increasing population, already amounting to over 200,000 within a twelve-mile radius. The land is admirably adapted for the erection of more glass-houses, for the production of supplies for local and distant markets. The climate is similar to that of Worthing, where so much horticultural produce is raised. Plenty of good land adjoining, to be hired on advantageous terms. A large stock of fruit and ornamental trees, shrubs, Roses, &c., can be taken at a valuation, if desired. There is a HOUSE, containing six bedrooms, three reception rooms, &c., standing in its own grounds of half an acre, joining the Nursery, also for Sale. Apply, E. H., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

FOR SALE, or LET, a FREEHOLD. About 3 acres of this old-established Nursery, in good position, between Weybridge and Chertsey, Surrey. A good opening for an energetic man. Ten minutes walk from Chertsey or Addlestone station. South-Western Railway; in a rapidly increasing neighbourhood. For particulars, enquire of—W. DALE, Knockholt, Kent.

EXETER.—In a splendid situation. A genuine FLORIST'S and FRUITERER'S BUSINESS, doing a good cash trade, which might readily be much increased. Rent of Shop, Show-Room, and Sitting ditto, £40 per annum. Price for Goodwill, Fixtures, Fittings, Stock, &c., £75. A capital business for two Ladies, or anyone desiring to acquire a lucrative concern. Apply to THOMPSON, RIFFON AND CO., Business Brokers, 25, Gandy Street, Exeter.

EXHIBITIONS.

CRYSTAL PALACE GREAT AUTUMN EXHIBITION OF FRUIT.

OCTOBER 8 to 10. ENTRIES CLOSE OCTOBER 1. Schedules and Entry Forms post-free, on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

TO LET, LARGE GARDEN, with VINERIES, &c.

The Garden at Mable, within about 4 miles of the town of Dumfries, with Cottage and small Field, are TO LET for such period as may be agreed on, with entry at Martinmas first. The Garden and field extend to about 3 acres each. The Glass-houses are extensive, and consist of two Vineries, two Peach-houses, two Melon-houses, large Conservatory, and long Corridor; and the Garden is well stocked with Fruit Trees and Bushes.

The Gardener, Mr. William McMinn, will show the Premises, and further particulars may be learned from Messrs. WALKER AND SHARPE, Writers, Maxwelltown, Dumfries, who will receive offers till FRIDAY, the 25th September current. Maxwelltown, September 8, 1891.

TO FLORISTS.—NURSERY (Large), North of London, to be LET, or LEASE to be SOLD; or suitable Man with Small Capital taken as MANAGING PARTNER. Letters to F. W., 27, Fitzroy Street, London, W.

Tottenham.—To Nurserymen, Florists, and Others. TO BE LET, close to White Hart Lane Station, about 1a. 2r. 2ap. of LAND, suitable for Glass-houses.

For further particulars, apply to Mr. ALFRED RICHARDS, Estate Agent, High Road, Tottenham; or, Messrs. DANIEL SMITH, SON, AND OAKLEY, Land Agents, Surveyors, and Auctioneers, 10, Waterloo Place, Pall Mall, S.W.

GLASSHOUSES for SALE.—Extensive Glass with Heating Apparatus, to be Sold, at The Warren, Fritton, near Lowestoft, by Private Contract. Apply to Mr. KNIGHT, at The Lodge, who will furnish particulars, and show the houses.

ROYAL ALBERT BOILER, Cheap, 3 feet by 2 feet 6 inches by 2 feet. Nearly new. Will heat 800 feet of 4-inch piping. W. F. WALKER, King's Lynn.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchaser has the choice of 100 Wholesale Houses. Call or write for Prospectus. Address, SECRETARY, 43, Great Tower Street, E.C.

Landscape Gardening. ARTHUR M. KETLEWELL (Author of 'The Theory and Practice of Landscape Gardening'), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons. Address, Titeley, R.S.O., Hereford-hire.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Fruit Trees a Specialty. STRAWBERRIES.—All the best of the New and Old Varieties. One of the best Collections in the Trade. Send for Descriptive CATALOGUE, the most complete issued. Special quotations for quantities to grow for Market. FRUIT TREES of all kinds. Orders booked now for autumn delivery. JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

FOR SALE, cheap.—A pair of VARIEGATED ALGUES, grand plants, nearly 6 feet in diameter. Apply to H. SLARK, Kingswood Grauge Gardens, Hockley Heath, Birmingham.

FOR SALE, or EXCHANGE, 3 PALMS.—Thrinax elegans, 8 feet high; 2 Latania borbonica, 3 feet high; all in good condition.—Apply to T. HAMBLEY, The Gardens, Hillworth House, Devizes.

COELOGYNE CRISTATA.—For Sale, a quantity of Plants, in splendid condition.—Apply, G. W. DUTTON, 'Summerfield,' 15, Crnzon Park, Chester.

FERNS.—1000 Polypodiums, in small 60's, extra strong, fit for potting into 48's, 15s. per 100, 47 per 1000. Packing free. Cash with Order. B. PRIMROSE, Blackheath Nursery, St. John's Park, Blackheath.

PTERIS VICTORIE.—The best new plant of the year, nice plants, 3s. 6d. each; 2 for 6s.; 6 for 15s., free by post. AS LENIUM PTEROPUS.—New and rare, long shining dark green fronds, beautifully recurved, a splendid market or table Fern. Nice plants 2s. 6d. each; 2 for 4s. Post free. Cash with order. WILLIAM GOLBY, Edgond Nursery, Brierfield, near Burnley, Lancashire.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to SANDERS, St. Albans. The finest stock of Orchids in the World. 30 minutes from St. Paucras.

SHARPE'S VICTOR POTATO, EARLIEST OF ALL.

Now is the time to procure; and to prevent disappointment, Order direct of the Raisers.

Plant "VICTORS" now for using at Christmas, or put into boxes to sprout for planting out-of-doors early in March.

Prices on application, to
CHARLES SHARPE & CO.,
SEED FARMERS AND MERCHANTS,
SLEAFORD, LINCOLNSHIRE.

LILIUM WALLICHIANUM SUPERBUM.

HUGH LOW & CO.

Have to offer a large quantity of the above exceedingly fine and rare Lily. The plants are strong and healthy, in flower and bud.

Price, 5s., 7s. 6d., and 10s. 6d. each.
Price to the Trade on application.

CLAPTON NURSERY, LONDON, N.E.

DUTCH and CAPE BULBS and PLANTS, DIRECT FROM THE GROWERS AT GROWERS' PRICES.

ROOZEN BROTHERS, OVERVEEN, HAARLEM, HOLLAND.

Delivered entirely free in Aberdeen, Belfast, Bristol, Cardiff, Cork, Dover, Dublin, Edinburgh, Glasgow, Gloucester, Goole, Grangemouth, Greenock, Grimsby, Guernsey, Harwich, Hull, Isle of Man, Leith, Limerick, Liverpool, London, Londonderry, Middlesbrough, Newcastle-on-Tyne, Plymouth, Portsmouth, Southampton, or any other port in direct communication with Rotterdam or Amsterdam.

Orders over £2 10s. sent free to destination to any place in England, Scotland, or Ireland. Club (Joint) Orders for the same amount also delivered free to destination. No charge for packing or packages.

Full particulars of our enormous Collection of Bulbs, with List of splendid Novelties, will be found in our NEW LIST for 1891, eighty-eight pages in English, which will be sent to all applicants, post-free.

ROOZEN BROTHERS, OVERVEEN, HAARLEM, HOLLAND.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.

A LARGE AND SELECT STOCK IS NOW
OFFERED FOR SALE.

The Illustrated and Descriptive Catalogue of
Fruits, post-free.

The Descriptive Catalogue of Roses, post-free.

THOMAS RIVERS & SON,
THE NURSERIES,
SAWBRIIDGEWORTH, HERTS.



BUYERS SHOULD COME AND VIEW THE STOCK.

SEEDLING PLANTS

OF CHOICE

Florists' Flowers.

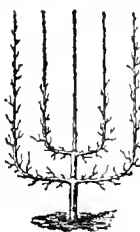
We have much pleasure in offering the following in Strong, Healthy, Transplanted Young Stuff, from our superb strains.

	Per doz.	s.	d.
Auriculas, Alpine, very choice strong young plants, for blooming next season	...	2	6
Calceolarias, herbaceous, splendid strain	...	2	6
Carnations and Picotees, from choicest named flowers	...	1	6
Cinerarias, large-flowered, very fine, per 100	10s.	6d.	1
Hollyhocks, choicest double	...	6	2s.
Primulas, Alba magnifica, Splendid Pure White	...	3	6
" Crimson King, deep Crimson, magnificent colour	...	6	2s.
" Choicest Red, White, or Mixed, per 100	10s.	6d.	1
Hyacinths, Early White Roman, fine selected bulbs	...	1	6
Narcissus, paper White	...	7s.	6d.
" New large-flowered	...	10s.	6d.
" Double Roman	...	7s.	6d.
Lilium Harrisil, fine bulbs	...	5s.	6d.
" Extra fine	...	8s.	6d.

Primulas, double Pure White, splendid for furnishing an abundance of Cut Flowers throughout the Autumn and Winter. Well-rooted, strong young plants, from 3-inch pots. Per 100, 42s.; per dozen, 6s.; 3 for 1s. 9d.

Our Fine Illustrated CATALOGUE OF DUTCH and other FLOWER ROOTS, NEW and CHOICE ROSES, FRUIT TREES, &c., should be read by all intending purchasers before Ordering. Post-free, 3d., or Gratis to Customers.

DANIELS' BROS., TOWN CLOSE NURSERIES, NORWICH.



MARLY LILAC
(Well Budded),
The best of all for Forcing. Thousands
for Disposal.

CROUX ET FILS,
NURSERMEN,
LE VAL D'AULNAY, PRÈS SCEAUX
(SEINE), FRANCE.
Great Specialty in Trained Fruit
Trees for Immediate Planting.
CATALOGUES free on application.

GARDEN.

For whatever is wanted, mentioned or not in these columns, please to write immediately to H. CANNELL AND SONS, whose Seed and Nursery Stock is very complete and extensive, and where nearly everything for the Garden is grown and supplied in large quantities, in the finest possible condition, at the lowest prices, consistent with correctness and superior character. Send for CATALOGUES.

SWANLEY, KENT.

Many Acres of Lilies of the Valley!
T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

Lilium { **G** GRAND well-ripened Bulbs for Forcing and Greenhouse Culture. Circumference 5 to 7 ins., 4s. p. doz., 25s. per 100; 7 to 9 ins., 6s. p. doz., 35s. p. 100; 9 to 12 ins., 10s. 6d. per doz., 60s. per 100. Special rates per 1000.
Harrisil { **DICKSONS**, Nurseries, Chester.

DUTCH FLOWER BULBS.

Miscellaneous, Bulbous, & Tuberos-rooted Plants

THE NEW CATALOGUE (81st year), of these Articles (No. 509), of E. H. KRELAGE AND SON, NURSERMEN, SEEDSMEN, and FLORISTS to the Court, Haarlem (Holland), has been published, and will be sent, post-free, and without charge, to all who apply for it by prepaid letters, direct to

E. H. KRELAGE & SON, Haarlem, Holland.

A RARE OPPORTUNITY

To obtain a Collection of Choice

FERNS AND SELACINELLAS

at exceedingly low prices.

SPECIAL AUTUMN LIST ON APPLICATION.

W. & J. BIRKENHEAD,
FERN NURSERY, SALE, MANCHESTER.

100 ACRES OF
"EVERGREENS"
TO SELECT FROM.
Regularly Transplanted.
Hardily-Grown.
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NOTICE.

The two preceding numbers contain
A Report of the Great International Show at
EDINBURGH,

Together with Notices of the Principal Gardening Establishments in the vicinity, and Portraits of the Marquis of Lothian, Professor Balfour, and various members of the

ROYAL CALEDONIAN HORTICULTURAL SOCIETY

THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 19, 1891.

FERNS, AND THEIR MULTIPLE PARENTS.

COLONEL JONES and myself read a joint paper on "Abnormal Ferns," at the Bath meeting of the British Association, and this has been printed with illustrations in the third volume of the *Annals of Botany*. The paper showed that any particular character of one variety could be imparted to any other variety, and as a fact, the polydactylous character in the Shield Fern has been transferred to the sections known as decompositum, acutilobum, divisolobum, alatum, lineare, and congestum. It was further shown, that a hybrid had been obtained between, *Aspidium angulare* and *A. aculeatum*, the cruciate character of a variety of *A. angulare* having been transferred to *A. aculeatum*. It is right to say, that some botanists consider the two as one species. Hybrids are more or less sterile, whilst crossed varieties have no diminished fertility, and the fact that this plant is almost sterile seems unquestionably to raise these two Ferns to the rank of species, independently of the many important distinctions. The paper further stated, that by sowing the spores of different varieties together it was possible to obtain hundreds of intermediate forms.

Colonel Jones and Mr. E. F. Fox were to me two valuable assistants, who repeated and verified all my Fern experiments. Since the Bath meeting, death has carried both away, and at the present time I have no other help. The paper to-day is a further report of these experiments, and of the astounding discoveries that have resulted. The space on a lecture-table is inadequate to exhibit all the specimens that could have been brought in illustration. At Bath, Colonel Jones and myself had a large tent containing 2000 varieties of British Ferns, and it had been suggested that such an exhibition, on an even more extended scale, should this week have found a home at Cardiff, especially as the bulk of the wild finds, and all the crosses, belong to South Wales, and those counties extending from South Wales to Cornwall. Many of the Ferns were exhibited in London on September 8, at the meeting of the Royal Horticultural Society. See *ante*, p. 310.

Since 1857, other hybrids have been obtained, and although these hybrids are more or less sterile, a few plants (grandchildren of the original parents) have been raised, and they differ so much from the parent, that nearly all resemblance has disappeared. What will be the characters of the great-grandchildren is now in course of proof. There is no difficulty in the case of the offspring of crossed varieties; they

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are very fertile, and when sown alone reproduce their varietal form.

The following fronds show the varieties of *Aspidium angulare* and *A. aculeatum*, from which the hybrid was obtained, the hybrid itself, and two of the grandchildren. It will be seen the latter are of diminished size, and have a rough appearance that is absent in both the parents and the hybrid.

Not only have certain forms been imparted to other Ferns, but even variegation. I have obtained it in the male Fern, the Shield Fern, and the Hartstongue; in the latter, spores from a normal but variegated form were sown thickly with a plumose and a branching form. The examples before us are plants of the parents and their offspring—both the plumose and the branched varieties have become variegated. This frond of the Shield Fern and that of the *Adiantum* form a third.

In repeating the experiments of mixed spores to again verify what had previously been accomplished, the varieties in each case have been limited to three and four, so that the resultant changes could be more narrowly investigated. There were selected varieties of a number of species—in short, twenty-five distinct mixtures were sown in 1887, 1888, 1889, and 1890, and the results in all the experiments established the fact, that the antheridia of more than one variety have assisted in the impregnation. To-day, illustrations of three varieties and of four varieties have been selected for inspection. Those with four varieties were sown in January, 1888, and those with three in March, 1889. The varieties selected had conspicuously distinct characters, and in the example of 1888 the spores were gathered from a dwarf spiral form, a muricate or warty form, an undulate, and a ramose one; more exactly speaking, the varieties were spirale, undulatum, muricatum, and keratoides. The plants are here, as well as three of their children, and the latter have received the names of *echinatum*, *quadriparens*, and *Darwinianum*, the last in honour of a great philosopher, the plant being produced whilst working under his guidance in the capacity of an ordinary labourer.

Let us examine these illustrations obtained from four very dissimilar varieties, they will speak for themselves; in two the characters of the four parents are combined in each plant, and in the third only three. In the hundreds of these seedlings, as might be expected, the majority show only the characters of two parents; on a less, though considerable number, of three, whilst a small number exhibit those of the four parents. The plants in the 1889 experiments are yet small, they are from a muricate, a branched, and a cup-bearing form known as *periferens*; the object being to obtain cups on a branching muricate Fern, as this was a desideratum. There was no previous example of more than one cup on a frond. You will observe in the seedlings, though yet diminutive, a divided frond with cups on each division, a tasselled Fern with a rosette in place of an actual cup; and in another example, a marginal row of small cups, and all are muricate. When the plants are larger, the characters will be more developed. A further experiment from spores sown in July, 1888, of three varieties, viz., *periferens*, *muricatum*, and *pectinatum* (the latter not in my possession), has produced plants of a pectinate and muricate character, but instead of a cup there are small cups on stalks. It is worth remarking that the seedlings from mixed spores never seem to produce any plants that exactly resemble any one single variety, they are all combinations; in other words, a number of antheridia, and not a solitary spermatozoid, are required for the fertilisation.

Understand, that where only two varieties have been sown together, the result has only been a combination of the two, varying more or less according to which predominate: if three only, a combination of the three; whilst if four, there are examples of the combination of all four. In sowing varieties of the Lady Fern, I have raised the combination of five and six, which will be alluded to in my paper on the "prothalli."

These plants that give evidence of multiple parentage were obtained in the identical manner formulated before they had any existence. The only requisite knowledge is care in sowing the spores so thickly that the prothalli intermingle; if thinly sown they are only fertilised from the same prothallus. If we take the reasoning of Sir John Herschel on the doctrine of probability, and apply it to these experiments, the chances against the reasoning adopted being incorrect are as great as that of the hap-hazard distribution of the stars.

The experiments were commenced forty years ago. A firm belief in the Darwinian theory influenced me to persevere in a series of experiments regarding the changes in animal and plant life. All the assertions are based on my own observations, which have been very diverse. Horses, cows, sheep, pigs, dogs, cats, rabbits, swans, turkeys, geese, fowls, ducks, toads, slugs, dragon-flies, flowering plants, and Ferns have each been studied. To the latter we are today confined; still I should like to mention (to some extent) two confirmatory cases—one with animals, and the other with flowering plants. Experimenting on the *Mimulus*, a yellow flower was crossed with a spotted one, and the seedlings were spotted; later on, and further up the same stem, two blooms were this time crossed with a yellow one, but the seedlings were still spotted—the effect of the first cross had become a part of the life-history of the plant. In a second experiment, the same plant was simultaneously crossed with pollen from two other varieties, and several of the seedlings are a combination of the three. To accomplish this cross it required dexterity, as the pistil of the *Mimulus* is as sensitive as the sensitive *Mimosa*.

Turning to animals, a white sow was crossed with a black Berkshire, and the young were black and white; subsequently, one of the red Tamworth breed was substituted, and this time the young were red, black, and white, although there was no black in either parent. It made no difference whether the change was with the male or female. We have now seen the stepping-stones to gradual alteration. Some of these changes will have a diminution of strength, and these the more robust will crowd out—hence the fittest will survive.

The great theory of Darwin requires no defenders, it is a truth that has asserted itself. Natural changes are slow, but culturally we can accelerate the process that continues age after age. The germ once changed retains its new element, which becomes combined with others until the normal appearance is lost. The illustration of the Hartstongue has shown you this alteration, helped on as it were by artificial means that have accelerated the process, and these changes will continue whilst the world lasts.

Affectionate respect causes tablets to be erected in memory of the departed; age obliterates these records. It is, however, far different with the philosopher who has discovered great truths, for he has erected a monument to himself "more lasting than brass." Time wears away the hardest rock, but it will require the crumbling of this world to obliterate the truths that have been taught by Charles Darwin.

FACTS REGARDING THE PROTHALLI, AND THE PROPAGATION OF FERNS.

Occasionally, in a batch of seedling Ferns, there will occur plants of some strongly-marked variety, identical in their characters, and growing so closely together that it is difficult to separate them. I have long suspected that these were produced on the same prothallus; indeed, this seemed evident in four instances of remarkable seedling *Athyriums*, yet the development was too far advanced for absolute certainty.

To examine this carefully, a number of *Scolopendrium*s were planted in the prothallus state, and on the young fronds appearing, two were noticed identical in character, and unusual in form, which, when examined, were found to have their origin in one well-developed prothallus. With a penknife it was possible to divide the prothallus, so as to secure

the two plants, which were planted in a pan, and have not since been disturbed.

Prothalli were then planted from a pan of mixed muricate and undulate *Scolopendrium*s, and these were divided before the formation of fronds into two equal parts; in some examples the two plants resulting were alike, in others they differed, but showed their muricate and undulate origin.

The next experiment was to divide the prothallus into four equal parts. This was done in January, 1888. Every division grew, and spread in a more bush-like manner than is the case with the undivided prothalli, but up to July, 1890, there was no sign of any frond. It appeared evident that the male and female organs of generation were on separate divisions. To test this, in May, 1890, another prothallus was planted in close proximity to one of these; in fact, made to actually intermingle, and in August fronds appeared. The other divisions, except four, were similarly treated, and all have now produced fronds, except the four examples mentioned. The spores had been sown in August, 1887, and divided on January 12, 1888, so that the prothallus before you has been in this condition four years, the usual time from prothallus to frond being only a few months.

In an interesting example of the Lady Fern, previously alluded to, a prothallus produced three plants exactly alike; it was from a mixture of eight varieties, and these show the parentage of six, and now and then seven. They have the lax pinnae of *uncum*, the cruciate pinnae of *Victoria*, the lunulate pinnae of *Frizellæ*, the truncate terminals of *truncatum*, the cruciate pinnules of *crucipinnulum*, the projected pinnae of *projectum*, and occasionally the crested of *multifidum*. This Fern (a frond of which is produced), has therefore reproduced six, and occasionally seven characters. Recollect, referring again to the doctrine of probability, that it is 720 to 1 against the production of six varieties on the same plant, and 5040 to 1 against seven.

Turning to other means of reproduction, experiments are required in order to ascertain why the bulbils that form on some fronds do not always produce plants like the parent, and why it is possible to transfer the bulb-bearing character to other varieties. *Scolopendrium densum* often produces much more coarse and less-divided Ferns than itself; *densum* and one of its coarse bulbils are before you.

The beautiful plumose Shield Fern, known as *plumoso-divisolum*, has produced two plants from its bulbils that are strikingly distinct from the parent and each other. One is densely imbricate, and procumbent, like the parent; whilst the other is as finely divided as *Todea superba*, and is erect in habit.

Again, aposporous plants (that is, those raised from the prothalli direct, without the intermediate spore) also vary, as will be seen from an aposporous plant of the clarissima variety of the Lady Fern.

Even plants raised from bits of the stipes of plumose *Scolopendrium*s have produced a marginal belt.

It is desirable to state that I have never seen any variation in the plants raised from bulb-bearing species, of which there are many foreign examples.

There are so many truths yet to learn with regard to Ferns, that it is desirable that some younger men should take up these inquiries. *E. J. Lowe, F.R.S., F.L.S., &c.* [The two preceding papers were read in Section D. of the late meeting of the British Association at Cardiff, and various illustrative specimens exhibited, as also at the last meeting of the Royal Horticultural Society. Ed.]

FRUIT FARMS.

MARKET PLUMS.—Mr. W. Warren, at Isleworth, has 90 acres of ground under fruit culture, and literally crowded with trees and under-growth, in the shape of bush fruits, Raspberries, and Strawberries. Of top fruits, Plums form the chief portion; indeed, so large is the number of trees grown, that, because there is a good crop this year, Mr. Warren roughly estimates it at about 200 tons; but then, at Isleworth, it will be the produce of thousands of trees, of all ages, varying from ten up to thirty years. Let it not, however, be hastily assumed that this enormous crop is of annual production. No greater mistake can be made by anyone than in supposing

that every year brings its abundance of Plums, or any other hardy fruits. He had a good crop in 1888, and he had then following a couple of barren years. Now we have a heavy crop again, so that were a fair estimate of Plum-tree productiveness to be taken from this fact, it will be found that the triennial crop has to make good the losses incidental to the two other barren years. Some growers will perhaps hold that it is of too roseate a character to say that Plums crop fully even so often as every three years; and it will be more generally accepted, that the fairest way to estimate the productiveness of any breadth of Plum trees, would be by casting the average over seven years, when at least two full crops may be looked for, the other seasons having either very thin crops, or none at all. Looked at in this light, the profit which may be expected to accrue from so enormous a crop of Plums as 200 tons this year, is largely discounted, for if—during

customers is, that the cost of marketing is trifling. At Isleworth, the Early Prolific does, as standards, so indifferently, that none are grown. That is a matter of surprise, when we see other Plums doing so well, and furnishes at once a striking comment upon the fallibility of lists of Plums compiled from one soil or district. Mr. Warren mentions that Early Prolific does best on gravel, and that seems to be the case, as within a few miles, on gravel it fruits very well.

The earliest Plum at Isleworth is the Czar; that is doing wonderfully well, a vast number of trees, some ten years planted, fruiting abundantly, the fruits were putting on colour freely the first week in August. The Czar Plum has a sturdy, clean, erect habit, the stout stems supporting the great weight of fruit carried remarkably well, and in striking contrast to the pendulous and somewhat brittle-wooded Victoria. Mr. Warren was eloquent over the

fruiting freely and putting on rich colour early; Josephine, a Scottish Apple, early and showing very fine colour, and a large quantity of young trees are being gradually employed for mending; Lord Grosvenor, which fruits very finely on the Isleworth ground.

Pears do only indifferently, some old small-fruited sorts of no great merit crop abundantly; but the better-class Pears will not crop well, hence are not much grown. Beneath the trees, Gooseberries—especially Lancashire Lad and May Queen—red Currants, and Raspberries are the chief fruits. When the bushes are done, because the top trees become too thick they are grubbed out, the ground cleaned and manured and then planted with Raspberries and Strawberries, especially of the Grove and Scarlet. After these are exhausted, the tall trees are pretty well too dense to admit of anything doing below. Much of the surplus fruit Mr. Warren boils down into pulp on the place, and thus utilises to the utmost that which other growers would have to waste. A. D.

HYPERICUM MOSERIANUM ×.

ONE of the most effective flower-beds in the Royal Gardens, Kew, this season has been constituted by a dwarf very free-flowering Hypericum, which continues to expand its flowers throughout the summer and autumn. A specimen of the same plant shown at the meeting of the Royal Horticultural Society, on August 25, of the present year, by Mr. Antony Waterer, met with such approval from the critics that they awarded it a First-class Certificate. When it is remembered that we have already *H. calycinum* and *H. patulum*, it will be understood that the award is in this case very significant, and a true expression of merit. *H. Moserianum* ×, is indeed a hybrid raised by M. Moser at Versailles, between the two species above-named, *H. calycinum* being the pollen-parent. M. André, who originally described the plant in the *Revue Horticole*, 1889, p. 463, says that it unites the characteristics of both parents, while it is superior to either—and we concur in his opinion. M. Moser, we learn, tried the reciprocal cross and obtained the same result, which is noteworthy.

ORCHID NOTES AND GLEANINGS.

CATTLEYA LABIATA, Lind.

It is a strange fact, that in recent times many long-forgotten, good, old plants have been re-introduced. For the last half-century innumerable varieties of *C. labiata* have filled every stove; but the true *C. labiata*—the original plant named after Mr. Cattley in 1821, has vanished. We have before us the original description and the original drawing, a masterpiece of Mr. Curtis', in Lindley's *Collectanea Botanica*, and we cite the description, as it is only to be found in one of the rarest and least accessible of books. It runs as follows: "Bulbi fasciculati, epigæi, oblongi subcogoni. Folia solitaria, lanceolata retusa plana cartilaginea, enervia, atroviridia, rubro-marginata. Spatha duplex, exterior maxima, foliorum fere longitudine, acinaciformis hinc fissæ colorata, interior multoties minor. Scapus 1—2 floribus, intra spatham inclusus teres glaber. Flores resupinati suavissime lilacini odorati. Perianthii patentis lacinia, 3 exteriores lanceolata acuminata, interiores patentæ ovato-lanceolata, margine crispæ exterioribus multoties latiores. Labellum obovatum cucullatum carnosum porrectum limbo margine eroso, undulato, intus pulcherrime lateo et rubro venosum versus apicem intense purpureum. . . . The description of the gynostemium is of no interest in this place."

Mr. Curtis's drawing shows us a very handsome flower, about 5 inches across, the sepals and petals more acute than in the varieties now cultivated. The general colour is a very rich rosy-purple, with a light bluish hue; the labellum very slightly serrulated with a deep blood-purple blotch at the top, and bordered



FIG. 38.—HYPERICUM MOSERIANUM ×: FLOWERS YELLOW, ANTHERS RED.

the barren seasons—there is little expenditure incurred in labour and marketing, there is rent, rates, cultivation, &c., to be met; besides that, interest on capital, which adds to the reduction of the average of profits; moreover, because this heavy crop is all crowded into one season, prices are at least 20 per cent. lower than would be the case were the produce spread over the whole of the years. This forms a serious deduction from the profits of fruit culture. It is not at all compensated for by the sale of large quantities of fruit to the jam-makers. Happily for our growers, the preserving trade has become a large one, as but for it we should see, in such a season as the present, enormous quantities of fruit left to spoil, because the public demand would be too small. Still, preservers buy at rates that, to the retail consumer of Plums, would seem to be wonderfully disproportioned to the amounts they have to pay for small quantities. The preservers take in bulk, and the chief advantage in having them as

merits of the Czar, and certainly the general appearance of the trees, and the fine aspect of the crop now carried, justify these eucommiums. The fruits are well in request also, because presenting welcome variety to the Victoria, which will presently literally flood the market. Rather a curious feature in relation to this latter Plum is shown at Isleworth. Trees from a nursery on good deep holding soil have, from the first, never cropped so abundantly as have trees from poorer soil in Surrey. The former have done well, almost too well; the latter have not made much good growth, but crop enormously. A seedling from Goliath Plum seems to be better favoured than is the parent, and produces good crops. So also do Gisborne, a capital hardy pale Plum; whilst Pershore is one that rarely fruits at all. Another poor fruiting sort is the Dove Branch, of which there are many old trees. Of other trees there are Julien Apples, the points dying back remarkably; Lord Suffield, Manx and Keswick Codlins; Greenup's Pippin

with white. The bulb is eight-edged, and the sheath double, the inner one much smaller than the outer. The bulbs, at the flowering time, are about four months old, and not fully matured. These two characteristics are peculiar to the species, and do not usually occur together in other *Cattleyas*. Dr. Kränzlin, Berlin.

THE GARDEN VARIETIES OF CLIVEIA MINIATA.

DR. LINDLEY was the first to use the word *Clivea* [or more correctly *Cliveia*] in relation to this genus, but the plant so named does not seem to bear any affinity to the garden varieties of *Imantophyllum* or *Cliveia*. A beautiful plant flowered for the first time in England in the gardens at Syon House in 1828, which was figured in the *Botanical Register*, tab. 1182, under the name of *Clivea nobilis*, and the Editor, Dr. Lindley, remarks:—"We have named this genus in compliment to Her Grace the Duchess of Northumberland, to whom we are greatly indebted for an opportunity of publishing it. Such a compliment has long been due to the noble family of Clive, and we are proud in having the honour of being the first to pay it." On the very same day, the same plant was figured in the *Botanical Magazine* under the name of *Imantophyllum Aitoni*. Later, Dean Herbert adopted the name of *Cliveia* in preference to that given to it by Dr. W. J. Hooker. *Imantophyllum miniatum* is altogether a different plant, and was introduced by Messrs. Backhouse, of York, from Natal, about the year 1853, the original plant being figured in the *Botanical Magazine*, tab. 4783. There is a supposed natural hybrid between this species and *C. nobilis*, which was figured in the *Flore des Serres* under the name of *I. cyrtanthiformum*, but the plant seems to favour most the original species of Lindley, *C. nobilis*.

These preliminary remarks may be useful as indicating the parentage of our garden varieties, and the origin of the names for the garden varieties pass indiscriminately as *Cliveia* and *Imantophyllum*; but the last-named word was first published without the "n." *Cliveia* seems to take precedence; it is the prettier name, and not so difficult to pronounce as the other. Dean Herbert, who carefully cultivated this class of plants, and gave particular attention to any new genus or species. He found *C. nobilis* required no particular care to cultivate it; it was merely sheltered from frost, and flowered freely in the greenhouse if placed near a front light. The berries, he stated, took a year to ripen, and the seeds were often found to have vegetated within the pericarp. Looking through the houses of Messrs. John Laing & Sons, at Forest Hill, the other day, I found the *Cliveias* well grown, and numerous very fine varieties are annually raised from seeds in the nursery. Mr. John Laing, the senior member of the firm, takes a particular interest in these plants; he truly remarked that the handsome deep green foliage was very beautiful in itself, and when the plants were not in flower they would most likely be furnished with clusters of scarlet berries about the size of Gooseberries—they are oval in shape, of a dark red colour, and very effective in winter. Their value as flowering plants is so well known, that there is no need to say anything about them. The seeds when ripe vegetate very freely, and the plants produce their flowers after two years' growth. We have found, as Dean Herbert also ascertained sixty years ago, that they do not need a very high temperature. That which gardeners know as an intermediate-house is best in winter, but they are quite at home in the greenhouse in the summer months. It is easy enough to raise plants from seeds, but the old *C. miniata* is no use now. Mr. Laing has turned it out of the house where his choice seedlings are grown, and those who expect to raise seedlings that would compete with the best of the present day, must obtain good varieties to start with. When the seedlings are obtained, they must neither be forced on in a high temperature, nor potted on into over-large pots. A good strong flowering plant can be produced in a 6 inch pot, either as seedlings, or

propagated as offsets from the named varieties. Good yellow loam, with a little fibrous brown peat added, some decayed stable manure and coarse white sand, will grow them well. They soon grow up into large specimens.

I fancy the first start Mr. Laing made in seedling raising was from a variety of continental origin, and was named Mrs. Laing; it was much admired when first exhibited, the flowers being of large size, good form and colour, and the trusses very large. *Sulphurea* is a distinct variety of a very pale yellow colour; *Orange Perfection* has well-formed orange-red flowers, distinct and handsome; *Meteor* is the richest coloured of any of them. All the above are obtainable at a moderate price now in the trade. One of the most recent and best acquisitions obtained by the firm has been named John Laing: it is of a rich orange-red colour, and has produced twenty-two flowers on one cluster. *Lady Wolverton* is also a decided advance. The flowers are of large size, and the corolla reflexes.

There is a wide field for the hybridists in this genus of plants. Not more has been done than to breed in and in from the specific form, or a variety of it with broader foliage, named *robusta*.

The *Cliveia nobilis* is altogether a distinct thing, and would make quite a new break if crossed with Mr. Laing's best seedlings. *C. Gardeni*, a species discovered in the Natal Colony about the same time as *C. miniata* was introduced, is distinct from *C. nobilis*, and might be even more useful to hybridize with, as the flowers are as large again as those of *C. nobilis*; but it is more nearly allied to that species than to *C. miniata*. They are interesting bulbous plants, and require that some one should make a specialty of them, and bring out their beauties to the best advantage. *J. Douglas*.

ROSERY.

ROSE SHOWING.

THE crumpled Rose leaf that is said to have disturbed the repose of the Roman Emperor has at last appeared on the hitherto soft and pliant couch of the National Rose Society, a Society which has been singularly free from those disturbing elements which so many societies of all sorts and descriptions have to experience at one time or other. There was a slight rippling of the surface when the Society had to define what an amateur was, and when the questions of "gumming Roses," or too-much-alike Roses, were mooted; but owing to the manner in which these were met, and the general good feeling that prevailed, the calm soon came, and no rumbling of the storm survived. This makes one hopeful that the present disturbance will be met in a like spirit, and end in a like manner.

The question which is now before the Rose-exhibiting world is connected with the "grievances of small growers," and it is one of the consequences of a state of things which, I fear, has deteriorated the character of Rose exhibiting, much in the same way as the visit of the Australian cricketers, notwithstanding the fillip it gave to that noble game, had a bad effect in making captains of teams look more for the gate-money than had previously been the case. So I think what is called vulgarly pothunting, in which the great object is the amount of money to be gained, more than any honour that may accrue, leads large growers to pop down into smaller classes, and so swamp the small men. These we are frequently told are the backbone of the Society, a dictum from which I beg to dissent. If you were to take away the exhibits of such men as Messrs. Baker, Budd, Lindsell, Pemberton, Hill, Gray, and Burnside, I wonder how many small growers it would take to make up their loss. I am glad to see small growers, and to see their exhibits multiplied, but they are not, in my opinion, the backbone of the Society, and I find, as a matter of fact, there is more growling amongst them than among the large growers, not only on this, but on many other points.

Well, granted that it is a grievance, that it is very "annoying" when a small grower thinks he has a fair chance, for a giant to come down upon him, and snatch the coveted prize away. My opinion on this point is very decided, *i.e.*, that if an exhibitor cannot show in the classes he has usually done, whether from lateness, or earliness, or any other cause, he had better not show at all. But this is one of those things with which in all cases it is difficult to cope. The great institution of Christ's Hospital was established for the purpose of educating the children of poor and struggling people. We know how it has been abused, and so it runs all through; and as a person may not have the good feeling to consider (and act upon it) that when he is perfectly able to educate his child, if he accepts a nomination to Christ's, he is filling the place of some one who really needs it; so I am afraid there will be cases in which some large growers will absorb what ought to belong to other people.

The National Rose Society has endeavoured to meet these small growers. The schedule is so framed that growers must confine themselves to one division, and cannot pick and choose in what classes they will exhibit; nor can they, when they come to the show, alter it if they find that they are not up to their usual form. Moreover, it has instituted small classes for those who have never won a prize at the Society's shows, and also for suburban growers; and now in this matter it is required to come forward with some sort of grandmotherly legislation to protect the infants from the bad manners of the naughty big boys.

There have been two schemes put forward for the purpose of meeting this difficulty, one by Mr. C. J. Grahame, of Croydon, and the other by the Rev. J. H. Pemberton, of Ilavinger. In examining these, and in pronouncing against them, as I must do, I hope it will be borne in mind that I am not an exhibitor, and can, therefore, perhaps, like the onlooker of a game of chess, take a cooler and more dispassionate view of the merits and demerits of the case. Let us examine Mr. Grahame's proposed revolutionary schedule first. My main objection to it is one of principle. I think, that as it is arranged on the plan of placing an amateur according to the number of the plants he grows, it would lead to a system of espionage and suspicion that would be most hurtful, for who is to count the plants the grower has? Is he himself? and if so, what plants? Mr. Grahame's scheme is confined to the Roses mentioned in the National Rose Society's Catalogue of Exhibition varieties. He cannot, I presume, grow anything else. He cannot grow *Glory of Waltham*, or *Glory of Cheshunt*, *Madame Clemence Joigneaux*, or *Mrs. Harry Turner*, for suppose an enumerator were to come round and take his census, it would be of no use him saying, "I do not exhibit from these." There they are, and they must be counted. And then, what about the weakly ones which the grower hopes to bring round, but from which he does not expect a flower this season? "Oh, no! that is my hospital." "But invalids are enumerated in the census, and so I suppose must these be." "And is this *Gloire de Dijon* to be counted? it is not an exhibition Rose." "That may be, but still it is a Rose," and so on. In fact it seems to me that the plan is utterly unworkable. I have another very strong objection to Mr. Grahame's plan, and that is that it does not touch the state of small growers at all: his lowest class is for amateurs who may grow 1000 Perpetuals and Teas. To my mind that man is anything but a small grower; this I do know, that one amateur, at least, who does not grow beyond this number, exhibits and comes off safer in the class above that to which Mr. Grahame assigns him. No, it is the man who grows 500 Roses or under who is really the small grower, and although I think it quite possible that so small a grower might hold his own against those who grow a much larger number, and indeed have seen instances of it, yet I should be prepared to see a division especially set apart for such men, leaving the other classes untouched, and trusting to the honour of exhibitors to confine themselves to classes in which they are justly entitled to exhibit; and I

think when once an exhibitor has taken his place in a division he ought never to exhibit in a lower one, although the circumstances of the season may be against him. Of course, it is open to him to get into a higher one, as, indeed, ought to be the object of his ambition. I think the cogeny of this will be better seen by looking at the nurserymen's classes. What would be said if the great nurserymen, because the season was unfavourable to them, dropped down into the classes for smaller nurserymen? and the same feeling ought to be experienced when one sees amateurs adopting a similar course.

Mr. Pemberton's plan of regulating the classes not by the number of plants grown, but the character and account of the labour employed is, I think, equally objectionable; it has certainly the merit of not being novel, as it is adopted in many provincial horticultural cut-Rose societies, but is confessedly difficult to work. I have seen the breakups and disputes to which it leads, as to whether the man employed was to be considered a professional gardener or not, a point in which the employer may hold a different opinion to that of outsiders. I rather fancy that the commissioners of assessed taxes could give a little valuable information as to the difficulty of obtaining accurate information on such a subject and I think the same objection that I have to Mr. Grahame's plan applies to this, that it would introduce a system of espionage and suspicion, and go far to mar the good feeling that has hitherto existed amongst the members of the National Rose Society.

And, after all, I wonder how many exhibitors feel themselves aggrieved? There are a number of people who are ready to take up a question of this kind, but that is not the point as to how many small growers feel that they are swamped by the bigger ones. Of course, one always hears on a question of this kind, "Oh, everybody speaks about it, and, unless it is altered, the society will suffer loss." I was always doubtful of these assertions, and am confirmed in my scepticism by recent experience.

The question as to altering the date of the Metropolitan Show because the first Saturday in July comes on the second of the month, was lately mooted, and is still *sub judice*. It was distinctly stated that an overwhelming majority of exhibitors were in favour of postponing the show to the 9th. In order to ascertain whether this was the case, a circular was sent to all exhibitors south of the Trent (as it was a matter in which only southern exhibitors were really concerned), and the result of the poll has been that there is a very small majority in its favour, and probably not a few of these answered under the influence of the present exceptionally late season.

I hope, therefore, that this matter will meet with careful consideration, and that the position will be well considered before any change is attempted. I believe that whatever decision the society may come to, will be loyally accepted by all its members, and the good feeling and harmony existing hitherto be preserved.

There is another matter connected with Rose showing I should like to touch upon, the "too-much-alike Roses," but this I must reserve for another occasion. *Wild Rose*.

BRIAR STOCKS FOR STANDARD ROSES.

All Rose growers who propagate standard Roses largely, are found mourning over the losses in the Rose stocks they purchased and planted up in the autumn. Some are found stating they have lost fifty per cent. of their stocks, others less, and it is supposed to be traceable to the severity of the past winter. But if the intense cold would kill twenty, thirty, or fifty out of a hundred—why not all? I am not disposed to attribute these losses so much to cold and frost, as to dryness at the roots. Stocks or standard Roses are those of the Dog-Rose dug from the hedgerows. In the deep loam of the hedge, fertilized by vegetable mould, the strong stools of the Dog-Rose throw out from around them numerous vigorous suckers. These are cut off with a thick knob forming the root, but often with scarcely a fibre attaching to them. They are tied up in bundles and

carted to the nurseryman, and by the time they reach him, from exposure and other causes, what little remains of fibrous roots has become nearly or quite dried up. They are generally laid in roughly by the heels, until a convenient time for planting them out permanently in nursery quarters; and when this is accomplished, it is at a season of the year when the stocks get perhaps the smallest help from Nature in the way of assisting them to root. Now, as the ground was unusually dry last autumn and winter, it is reasonable to suppose there was not sufficient moisture in the soil to induce the putting forth of fibrous roots, consequently many perished, while those who possessed enough of these root fibres to act as feeders, managed to exist.

I was speaking some time ago to a nurseryman, who is a considerable grower of Roses in the West of England, and he informed me that a few years ago he ordered a large number of Rose stocks for standards, and to his surprise a quantity was delivered early in September when the weather was hot and dry, and when his staff was too busy about other matters to be able to plant them. As they appeared to have suffered from the drought, he at first hesitated to take them, but afterwards agreed to do so at one-half the price usually paid, the remaining half to be paid in the event of the stocks growing—an eventuality he thought hardly probable. He gave orders for the stocks to be placed in a pond of water until they could be dealt with, and there they remained for several days. In due course they were planted, and scarcely a failure occurred, and the original price was paid for them. The conclusion this nurseryman came to was, that by thoroughly soaking the root-stocks in water, they were helped to put forth fibres; or, at any rate, they imbibed enough moisture to carry them along until such times as they put forth roots.

I think, therefore, dryness of the soil is a very probable cause for failure with Briars during the past winter. I was astonished on several occasions to see, after the frost broke up, how very dry the earth was a foot or so below the surface. It seemed inconceivable, after so wet a summer as that of 1890; but we had a warm, dry autumn, and the dryness continued almost up to the time when severe winter set in, and put a stop to outdoor operations for a considerable period. *R. D.*

BASS, OR PIASSAVA.

ABOUT forty years ago, a great deal of interest was excited about a new product that was then becoming generally used for road brooms and brushes. It was a stiff dark-brown material, and for some time was generally supposed to be split whale-bone. The truth, however, soon came out that it was of vegetable origin, and finally that it was the stiff fibre from the sheathing bases of a Palm, that it was known as piassaba, piassava, or bass, and that it came from Brazil. A very great demand sprang up for it, and it was soon discovered to be produced by two Palms, *Attalea funifera* in Bahia, and *Leopoldinia piassaba* in Para. The introduction of this bass or piassava is due to the perseverance of Mr. Arthur Robottom, who has lived to see the material become an article of the greatest importance in British trade, so great, indeed, that the demand has of late years exceeded the supply, and the price has consequently been advancing. To meet this demand, other articles of a similar character have been brought into the market as substitutes, but none have proved equal to the original bass, not even when, a few years ago, a true piassava of a closely similar nature, but much finer and not so elastic, was introduced from Madagascar. This has since been proved to be the produce of an undescribed species of *Dictyosperma*. The most valuable substitute, however, and one that promises to become a formidable rival, is that which now appears in the trade circulars as African piassava, and is furnished by *Raphia vinifera*, which is known in Lagos as the "Bamboo Palm." A full account of this new article of commerce was published in the

Kew Bulletin for January last, where, in some notes on this subject by the Governor of Lagos, it is stated that "the Bamboo Palm or *R. vinifera*, is, perhaps, the commonest tree in the swamps and lowlands which line the waterways of the colony. Dense thickets of these Palms, traversed only by the Palm-wine-gatherer or the Bamboo-cutter, push their way into the lagoons and extend over the flood-grounds, and even to a distance of from 15 to 20 miles up the river valleys into the interior. The area occupied by these *Raphia* forests it would be impossible to calculate, but it may be accepted without doubt that they extend throughout the length of the colony, and to a distance of at least 15 miles from the sea coast, and that over this area of about 5000 square miles they form a considerable portion of the vegetation."

The bass consists of the stiff and wiry fibres extracted from the petioles or leaf-stalks of the Palm, and is of a dark brown or chocolate-brown colour. It can be readily obtained in lengths of from 3 to 4 feet, and its supply in Lagos alone is said to be practically inexhaustible. So rapidly has this new bass fibre taken hold of the English market, that in recent quotations it has commanded prices equalling, and even exceeding those of Para and Bahia. The development of these new sources of a most useful and necessary article of commerce, illustrate in a marked degree that the vegetable kingdom is far from being exhausted in her supplies of new products. To those acquainted with market reports, who have so long been accustomed to see under the head of Piassava, quotations only of the Bahia and Para sorts, it does seem strange now to see Madagascar and African regularly added. But there is no reason why the supplies should stop here; there are plenty of other Palms in the tropical parts of the world which, upon examination, might yield similar products. *John R. Jackson, Museum, Kew.*

FRANÇOIS LEGUAT'S PLANTS.

(Concluded from p. 159.)

MAURITIUS.

DURING Leguat's residence in Mauritius, although it lasted three years, he had not so much leisure to study the plants of the larger island as he had enjoyed in his more remote home at Rodriguez. The parts of the island which he visited were first, the various estuaries and bays along the south coast as far as the Ile Furneaux—so named, it may be supposed subsequently after Captain Furneaux—thence round the point of the Morne, where Lacaille afterwards measured a base line, and so to Black River. At Black River the adventurers remained a month, until they proceeded by boat to Port Louis, and thence by land across the northern part of the island to Flacq, where the Dutch Company had their farm and plantations, which supplied the garrison and Dutch ships with fresh provisions. The passage to South-east Port, where the Dutch Governor resided, was accomplished by boat within the reef from Grand River, South-east. At Fort Frederick Hendrik, Leguat remained nearly six months, until he and his comrades were transferred as prisoners to the Vaques Islet, the centre one of the three islets, between Isle de la Passe and Fouquet I. (where the lighthouse now stands), then called the Three Brothers. After an imprisonment of two years on this desolate rock, the survivors were again brought to Fort Frederick Hendrik, but kept in confinement until they left the island; and thus Leguat does not give any detailed description of the Mascarene flora—with one notable exception, which has caused some confusion in its identification. Unfortunately he has not attempted to give any illustration of it, although perhaps it might not have made us any the wiser. It is possible that the notice given of this plant in the *Gardeners' Chronicle* may lead to some additional light being thrown on the real plant which Leguat noticed. His account of this "Strom-boom," or Stink-tree, is as follows:—

"Il y a une espèce d'arbuste qu'ils appellent Stront-boom, ou Arbre du M-rde, qui est extrêmement venimeux. Le milieu de son tronc est plus gros que ni le haut, ni le bas. Le bois est molasse; & la feuille ressembleroit beaucoup à celle de nos Saules, si elle n'étoit pas un peu plus large. Je n'y ai vu ni fleurs ni fruits. Le bois & l'écorce sont un poison prompt & violent, & à ce qu'on m'a dit est sans remède. Un jour, comme je passois dans les bois, au retour de la chasse, j'en rompis par hasard une petite branche, & j'en portai sans reflexion, & sans avoir jamais ouï parler de cet arbre, un petit éclat à ma bouche. Je le rejetai incontinent, sans rien avaller, & cependant j'en pensai mourir. Pendant 24 heures, il me sembloit que quelqu'un me serroit la gorge, & je l'avois si enflée qu'à peine pouvois-je respirer. Dans les pays qu'on ne connoit pas il faut être d'une grande circonspection sur ces sortes de choses. On m'assuré que la manière ordinaire, dans ces Isles, de discerner les fruits venimeux d'avec ceux qui ne le sont pas, c'est de les présenter à quelque siége de l'Isle même; parce qu'on peut à coup sûr manger de ce qu'il mange, comme on doit aussi laisser ce qu'il persiste à refuser."

Leguat's account as to the poisonous qualities of some plant in Mauritius is confirmed by the well-known author of *Paul and Virginia*, M. Bernardin de St. Pierre, who nearly eighty years subsequently, writing from "The Port," October 8, 1768, states:—"Some days ago I perceived a large tree in the middle of some rocks, and, being desirous of cutting a piece with my knife, was surprised at the whole blade entering without my using the least force. It was of a substance like a Turnip, and of a very disagreeable taste; for some hours after (although I did not swallow any part of it) my throat was much inflamed, and felt as if pricked with pins. This tree is called Mapon, and is looked upon as poisonous." Baron Grant also mentions this tree in similar terms, having derived his information probably from M. de Saint Pierre.* Mr. Baker says:—"Mapon, in Mauritius, is *Vitis Mappia*, a harmless Vine. Boia mapon, more than one species of *Pisonia*, also harmless purgative perhaps, but not actively poisonous." He adds, "I should think the poisonous tree would most likely be a *Stillingia* (*Euphorbiaceæ*) or something of that kind. . . . There is a *Stillingia anguina* in Mauritius, which I infer from the name is poisonous. Those sorts of plants have an acrid milky juice, and the Seychelles ally is superstitiously dreaded by the natives, and called Bois Jasmin."

The Mapou tree of the Plaine des Caffres in the neighbouring island of Bourbon is mentioned by Maillard, and stated to be *Monimia rotundifolia*. "This *Monimia rotundifolia* of Mauritius, in the herbarium at Kew is labelled," says Mr. Scott Elliott, "Bois de Tierle."

Professor Balfour writes with regard to *Monimia*:—"It may be worth noting what may, however, be merely a coincidence—the allied genus *Tambourina* has a species Bois Tambour (there is the translator's T. tree?), and some species of *Tambourina* have been called *Mithridateæ*, and this genus was founded by Commerson, the father of so many Mascarene genera, and taken up by Schreber. I do not find any poisonous qualities now attributed to the *Monimiaceæ*; but if the tree had not some reputation in connection with poison—antidotal, or itself venomous—why should Commerson give it such a name? At least it should be a medicine-yielding tree. Unless some evidence from the nomenclature takes one to *Stillingia*, I should prefer to trust to the clue which such evidence affords, and seek for the plant either among the *Vitaceæ* or *Monimiaceæ*. . . . I cannot conjecture what it (the Stront-boom) might be. It would be strange if the name of so conspicuous a tree as the Mapon must have been in Leguat's time, was transferred to another tree, without its properties, even if the original Mapon were exterminated."

Colonel Pike, whose work on Mauritius is well

known, relates that when wandering in the woods of Mauritius, in 1867, his guide was constantly calling attention to different plants medicinally used by the Creoles. "He showed me one that he said would produce death in a short space of time after the juice had been taken into the system. I did not know its name, but found it was a species of *Euphorbia*. He said, if a branch was bruised, and thrown into a pond, it would destroy the fish. He especially pointed out one that would cure a person that was addicted to the use of ardent spirits (pity it is not generally known), with many other wonderful things, to all of which we listened with becoming attention."

Leguat is the only authority who has described the Géan, or Giant Bird, which, according to his account, was a struthious bird, some 6 French feet high, with long legs and neck, with short wings, and which the Dutchmen ran down with dogs.

Leguat's editor figures this bird—but the figure has been taken from an ancient engraving of some Indian bird, also unidentified, drawn by the artist, Collaert, a hundred years before.

Here it is out of place to discuss the veracity of Leguat's ornithological descriptions, which have been dealt with by Professor Newton of Cambridge, Milne-Edwards, and other authorities; but the plate may be noticed, because it is possible that the remarkable tree behind the bird may have been intended by the artist to represent the Strontboom with Willow-leaves, as the branches are indicated drooping, so as to suggest a weeping Willow. Should this republication of Leguat's notice of the Strontboom meet the eyes of anyone at the Botanical Gardens of Pamplemousses, in Mauritius, it may serve to reawaken some interest in the subject, and lead to its identification.

During the greater part of 1697, Leguat was either a prisoner or serving as a soldier at Batavia, and of the Javan flora, like the Mauritian, he does not say much that is remarkable; he says:—"This island (Java), moreover, as you may very well imagine, has its own particular plants. Here follow two of them, which one of my friends who has apply'd himself to that study has curiously design'd for me: I think they are little known; they say they only grow naturally in some of those little islands which lie between Borneo and Java."

The two illustrations represent certainly two very extraordinary plants, one has a faint resemblance to the illustration given by De Rochefort, as the Yam, Topinambore, or Batate. Whilst at Java, Leguat mentions the poisonous sap of a tree which grows in the island of Borneo. "The inhabitants of that island," he says, "make use of it to poison their little darts which they shoot out of sabercanes" (*i.e.*, blow-tubes). Major Thorne, who was on the staff of the English army which captured Java, on the other hand, mentions an antidote. He writes, "A sap, extracted from the juicy leaves of the Magas or Kiati tree, is held in high estimation as an effectual cure of wounds made by crises and spears that have been dipped in a poison composed of the blood of the Gekko, and other ingredients." Dr. Charles Pickering, in his *Chronological History of Plants*, states this poison-tree to be the "*Antiaris toxicaria* of the Siamese countries and Malayan Archipelago. The Bohun Upas is a large forest tree, sometimes called 'antsjar,' and the knowledge of its exudation seems implied in the prohibition against poisoned arrows in the Institutes of Manu. Claspings the poison-tree is mentioned by Bhavabbhuti. *Antiaris toxicaria* is known to grow as far as N. lat. 19° in the neighbouring portion of Burmah, and its exudation continues to be used by the Karcus to poison arrows. Further south, a tree in the Malayan Archipelago, according to Jordanus (Col. Yule's edit. Hakluyt Society, vol. xxxi.), is said, when in flower to kill every man that cometh near it; an account not strictly true, but *A. toxicaria* has been shown by *Rumphius*, ii., pl. 87, L. de la Tour and Blume, to be virulently poisonous; it is known to grow particularly in Java, Baly, and Celebes." The *Strychnos tierite*, also of Java, a climber, 120 feet, or *Upas radja*, is another poisonous

plant, whose root yields one of the most dangerous poisons known, acting like *Nux vomica*. As a background to Leguat's figure of the hooded snake, his artist has inserted an exact copy, reversed, of De Rochefort's Goyavier; and in rear of his drawing of an ourang-outang ape, an American *Opuntia* is depicted.

We may now examine the remaining plates in Leguat's book, and it will be found that in the illustration of the rhinoceros, the draughtsman has inserted an Acajou from De Rochefort's volume; again, behind the Hottentot man in full summer undress, he has planted a "Banane, Figuier ou Pommier de Paradis," also after Rochefort; and beside the Hottentot woman, without her petticoat, a Papayer from the same source. All these identifications which, as far as I know, have never before been pointed out, go far to prove that the majority of Leguat's illustrations are not original, but derived from some previous source. It is evident that we cannot trust to the drawing of the Giant bird of Mauritius, or to the caricature intended to represent the famous Solitaire of Rodriguez.

Undoubtedly the Solitaire did exist, as his skeleton has been found, and an almost perfect restoration effected by Professor Newton and his brother Sir Edward Newton, which may be seen in the Museum of Zoology at Cambridge; but the skeleton shows a bird which could hardly be represented by the misshapen caricature of it given by Leguat, and reproduced in a more finished style by Buffon in his *Ornithologie*. S. P. Oliver.

SIR TREVOR LAWRENCE'S COLLECTION.

SIR TREVOR is such a keen gardener, that any visitor to his pretty homestead at the foot of Boxhill, naturally expects a great deal. Unlike the generality of cases, the realisation exceeds the anticipation; for it is not only in the matter of Orchids that there is room for comment, but in nearly every other class of plants. In the lovely grounds, which have for background the abrupt woody slope of the hill, there is, to my vagabondish view, one eyesore—on either side of the main approach is an avenue of stiff sentinel-like *Cupressus erecta viridis*. When one is delighting one's soul with the natural loveliness of the background, these stiff formal things keep obtruding themselves into view. The bedding is almost entirely confined to Begonias, and very pretty the various shades of pink, scarlet, and yellow were. The herbaceous beds in the garden are also somewhat original; there is not a medley of plants, but plots of the various species. The effect is charming, and the contrast of large quantities of the red and white *Spiræa*, the blue *Platycodon* and *Echinopsis*, the yellow *Chrysanthemum maximum*, a white *Larkspur*, and the gossamer-like *Gypsophila paniculata* were very striking. In the borders in front of the houses some planted-out *Crinums*, chiefly Moorei and Powellii, were flowering most luxuriantly; they are left out all the year, being simply protected by a mulching in the winter. A rather uncommon plant in the herbaceous quarter was the *Cerunthe*; three varieties of this curious *Boragewort* are grown.

The greenhouses were very bright. There is an extensive collection of the new continental Begonias, and a large number of seedlings bearing flowers of great substance. Flowering basket plants were extremely well cultivated, one of the prettiest being *Lotus peliorhynchus*. Besides the *Vallotas* and *Pancratiums*, other noticeable plants in flower were *Chianthus Dampieri*, *Alstroemeria pelegrina alba*, *Tweedia oxypetala*, *Exacum macranthum*, *Costus igneus*, and the striking new *Streptocarpus* hybrids. The stoves contain most of the rare, curious, and beautiful tropical plants that are at all amenable to culture. The collection of *Anthuriums* is well known, many new varieties such as *Burfordiense* × have been raised here, and the present batch of seedlings show great promise. *Bertolonias* and *Sonerilas* are extensively grown, and very curious

* The botanist, Aublet, is also represented by a contemporary anonymous traveller as having nearly poisoned himself during his botanical rambles in the forests of Mauritius.

to study were the various Tillandsias, *Ataccia cristata*, and *Cochlostema Jacobianum*. The lattice-leaved plant from Madagascar, *Ouvrandra fenestralis*, is most successfully cultivated, and it is quite a source of wonder to the many visitors. A distinct Fern, *Aglaomorpha Meyeniana*, the Bear's-paw Fern, also causes great curiosity. The fronds are dimorphous, the fertile and sterile segments being totally unlike in form; only one species has been found hitherto, and that in Luzon.

The Orchids are so well-known to your readers, and so many have seen some of the finest at the Temple shows, that long comment would be superfluous. The *Cypripediums* in flower in August were *Stonei*, *calurum*, *orphanum*, *Godefroyæ*, *Harrisianum*, *superbum*, *Schroederi*, *javanicum*, *cardinale*, *Morganii Burfordiense*. Many of the *Masdevallias* were in flower also, very interesting were the hybrids *Hinksiana* and *Reichenbachiana*. The plants of *Grammatophyllum speciosum*, *Renanthera coccinea*, and *Vanda Sanderiana* are among the largest in the kingdom. The brightest house, however, at the time of my visit was the *Sobralia*-house, the centre stage was entirely devoted to them, and the beautiful delicate crisping and creamy flowers were produced in the greatest profusion. There was also in flower the finest variety of *Cattleya aurea* I had ever seen; the gold-lacing was much deeper than usual. A number of plants of the brilliant scarlet *Hubenia militaris* livened up a stage wonderfully. *Vagabond*.

NURSERY NOTES.

ORCHIDS AT ST. ALBANS.

WHEN visiting the great Orchid-growing nursery of Messrs. F. Sander & Co., as range after range of vigorous healthy specimens, many of them reputedly difficult to manage, are passed, the visitor naturally enquires what has become of the unhealthy specimens or invalids? for the eye fails to detect one in the whole of the seemingly endless labyrinth of Orchid houses. The answer is, that the unmanageability of any species of Orchid is not believed in at St. Albans, as long experience has proved to Mr. Sander and his clever manager, Mr. Godsell, that they have only to construct quarters according to the light of that experience, and from hints afforded by the collectors as to the conditions under which the plants grow in their native countries, and the most difficult plant becomes grateful and amenable to cultivation, and requiring but little pains to grow and flower it well. A few of the conquered ones may be noted in *Phajus tuberosus*, *Dendrobium Dearei*, *Oncidium ampliatum majus*, and the fine new *Grammatophyllum Measuresianum*, all of which, together with other difficult plants, as they are called, are growing in quantity in the warm house prepared for them, and which has a tank extending from end to end in which the red and blue Water Lilies were, at the time of my visit, beautifully in bloom. The Orchids are suspended over the tank, and have been ever since their arrival in this country, and yet even the most critical observer cannot detect an unsightly or sickly plant. So also in the quarters prepared for the handsome *Oncidium splendidum*, *Odontoglossum citrosimum*, and various other rare species which are grown by the hundred, and especially with *Phajus Humblotii*, which is only now declaring its full beauty, the scores of spikes on the batch at St. Albans, exhibiting it as white, or pink, or rose, or purple, of various shades, but always beautiful. With a view to carrying out this idea of building special houses for special plants, extensive as the establishment was before, Mr. Sanders is now just finishing another suite of ten very cleverly-constructed houses, their ends abutting on the large *Cattleya*-house, and which are intended chiefly for some expected new arrivals, from a quarter of the globe not stated. In these new houses are some novel features, worthy of a visit to see. One of the features is a system of water supply communicating throughout the whole

block. The ventilation and staging arrangements are also good, and embody some new ideas.

THE ROCKERIES,

which are here so well constructed, and planted with so much skill and venture, as regards the Orchids planted in them, contain many new plants of the foliage or climbing plant classes, sent over by the collectors with the Orchids, and some of which will doubtless become standard plants in our Stove-houses. Among plants of this kind, some of which are in pots, we noted a new and beautifully-marked *Philodendron*, some pretty new *Marantas*, a new variegated form of *Dracena fragans*, the elegant *Phoenix Roebelenii*, and the equally graceful and still rarer *Cocos Pynaertii*.

As regards the Orchids planted in the rockeries, it is stated that no failures have to be recorded, although some species do far better than others. In the cool rockery, *Cypripedium caudatum* is one of the most satisfactory, its leaves growing quite twice the size of those of pot-plants, and their long riband-like petals appearing to the greatest advantage, as they hang clear of the rocks. *Alsiophila ferox* clad with *Zygopetalum Gautierii*, and *Lomaria Boryana* with *Zygopetalum graminifolium*, also form pretty objects, the Orchids thriving better than usual by reason of their being still left on the native Tree Ferns on which they were found by the collector.

FOR THE GENERAL COLLECTION,

suffice it to take a hasty glance at the more prominent objects, containing specimens in flower. Of these, the greatest show is in the *Cattleya*-houses, where the various forms of the *labiata* section have many in bloom, such as *C. gigas*, *C. Mendeli*, and *C. Gaskelliana*, of which there are some very handsome and curious forms. One is the counterpart of *Cattleya Mossie Keineckiana*, another has flowers like those of *C. Wagneri*, and a third could scarcely be distinguished from a fine form of *C. labiata Warnerii*. *C. Gaskelliana* contains more bad varieties than any other species, but the good ones are equal to any form of *C. labiata*, and the redeeming feature of even the colourless or poor varieties is, that they are delightfully sweet. A fine show of *Cattleya Schofieldiana* and also of the ordinary form of *C. grandulosa*, also appears now in bloom; and a fine lot of *Odontoglossum Phalenopsis*, *O. Rozeilii*, and scores of great masses of the white *Lælia anceps Sanderiana*, *L. a. Stella*, *L. a. alba*, and other marked forms are marvels of good culture. In the large *Cattleya*-house also are plants of a very interesting cross between *Epidendrum ciliare* and *Lælia anceps*, which are approaching maturity, and are watched with a like interest to that bestowed on the curious crosses between *Bollea celestis* and *Zygopetalum*, and other strange hybrids in the quarters set apart for them. Among the *Aerides*, those two superb things, *A. Lawrenceæ* and *Sanderiana* are in bloom in many examples. The main difference between the two is, that the flowers of the former has a white ground, and the latter a yellow. Among the fine display of *A. Sanderiana*, there is a new *Aerides* in the way of *Sanderiana* in flower, and which may be regarded as the largest and most beautiful of known species of *Aerides*. It is a very stout grower, and sends out long sprays of flowers, even larger than those of *A. Lawrenceæ*. The colour is clear yellow and rich purplish-crimson, a quaint crescent-shaped blotch of the latter tint appearing at the tip of each segment, and a bright tinting of it on the spur and labellum, which is broader and more open than in the other species. To crown all, the noble variety is delightfully fragrant. The cool-houses, with their thousands of *Odontoglossum crispum*, *O. Pescatorei*, *O. blandum*, and indeed all the good species still continue in grand health, and give their quota of flowers. The house of spotless specimens of *Miltonia vexillaria*, also has some in bloom. The *Phalenopsis*, which do well at St. Albans, have many *P. Sanderiana* and some of the lesser species in flower; and among other good things noted, were a specimen of *Calanthe vera trifolia*, with fifteen spikes; *C. Masuca*, *C. Domin-*

iana, *Oncidium hæmatochilum*, *Aeranthus grandiflorus*, the new *Dendrobium dicuphum*, *D. Phalenopsis*, and other *Dendrobiums* from the Torrea Straits region; a batch of white *Lycaete Skinnerii*, *Cattleya velutina*, *C. Eldorado Wallisii*, *Epidendrum Wallisii*, *Sobralia xantholeuca*, *Lælia elegans Turnerii* varieties, *Cycnoches chlorochilon*, *Cataetum Bungerothii* (female), *C. callosum*, and various species of *Masdevallias*, *Cypripediums*, &c.

FORESTRY FOR SEPTEMBER.

Now that the ground is thoroughly saturated with moisture, the planting of evergreen shrubs, both for covert and ornament, should be proceeded with. When lifting the plants, care should be taken not to mutilate the roots, but sometimes roots are occasionally fractured and peeled to a certain extent by accident, even by the most careful workmen, and the bruised part should always be cut off by placing the knife below the root, and cutting upwards and outwards. When removing large Hollies, Yews, Portugal Laurels, &c., if a little soil adheres to the roots in the shape of a ball, it will prove beneficial in promoting the growth of the plants at the start. In cases where the soil consists of hard, infertile matter, mix a little leaf-mould or bog-earth with the staple before the shrubs are planted, and finish by staking, tying, and mulching them, if these operations are thought to be necessary. When planting groups of ornamental shrubs in exposed situations, it is a capital plan to erect a screen of evergreen branches on the exposed side of the group or plant, as the case may be, removing when the plants have taken to the soil.

Plant ornamental hedges and screen-fences of evergreens where desirable, and, if necessary, break up the ground thoroughly, pulverising it with a pick before planting. Hedgerow trees and isolated specimens should be examined at this season, and such as are showing marks of decay, or are past recovery, had better be cut down. It is, however, sometimes advisable to stub out hedgerow trees by the roots, and either plant another tree on the spot, or trench the ground and plant Quicks. Standard park trees often get greatly damaged by the elements, and by the soil becoming waterlogged through the bursting or the choking of drains in their vicinity, and when this is found to be the case no time should be lost in applying the proper remedy. No better time of the year could be chosen for cleaning out and sorting drains of this kind than autumn, in order to render the soil dry during winter; and in cases where the soil has become exhausted, a dressing of rich soil, leaf-mould, or well-rotted manure will be found beneficial in promoting the formation of fresh roots. It is also an advantage to have this sort of work carried out at this season, so that there shall be no interference with growing farm crops. These remarks apply to Conifers as well as to hard-wood trees.

SEED SAVING AND SEED SOWING.

Tree seeds should now be looked after, and collected as they become ripe—such as the cones of the *Abies* or Silver Fir tribe, as well as some of the rarer species of *Pinæ*, including the pretty little *Pine*, *P. parviflora*, whose cones are now matured, and if not looked after the seeds are sure to drop out and be lost. The cones of *Cupressus Lawsoniana* and others should likewise be collected as they become ripe, and stowed away in a dry place till they are wanted in spring. Sycamore and Maple seeds, of which there is a grand crop this season, should now be collected and kept in a dry place till wanted in the spring.

This is also the best time to make a selection of Cherry-stones, which should be sown at once on well-prepared friable soil formed into beds 4 feet wide. Sow the stones or seeds broadcast in a regular and uniform manner, and cover them with about 1 inch of fine soil. Birch-seed are generally matured at this season, and should be gathered in fine dry weather. These may either be sown at once, or mixed with damp sand, and kept till spring.

The best ground for Birch-seed is that of a mossy texture, formed into seed-beds about 4 feet wide. The seed should be sown broadcast on the surface, and trampled down in a uniform manner with the feet, which is all the covering that they require. Those who are anxious to have the true Weeping-Birch for embellishment, should collect the seeds from the best weeping varieties of the tree to be found in the natural forests of the Mar district of Aberdeenshire. Sow the seed at once where they are to remain without being transplanted, as transplanting alters the form and contour of this tree to a large extent; hence the many complaints that I have heard from proprietors, that they cannot get the true variety of this tree to purchase from the public nurseries.

MISCELLANEOUS.

Prepare a piece of sharp sandy soil on a northern exposure, and plant cuttings of Yew, Box, Laurel, Privet, and other hardy evergreen plants that are usually propagated by that method. Particular attention should be paid at this season to prevent weeds in the nursery or elsewhere from maturing and shedding their seed on the spot. Dig between the rows of forest and ornamental trees and shrubs, to keep down weeds and encourage root-action. Seedling Hollies and other small evergreen plants should now be removed from the seed-bed, and planted into nursery lines 12 inches asunder, and a few inches between the plants in the rows, choosing damp cloudy weather for the operation. *J. B. Webster.*

TREES AND SHRUBS.

PINUS RIGIDA.

Our excellent contemporary, *Garden and Forest*, has an interesting article on this tree, accompanied by a characteristic illustration of a weather-beaten old tree. It is one of the trees known as Pitch Pine, though it is not the one which yields the commercial product of that name. Pitch Pine of commerce is either *P. palustris* from the Southern States, or *P. ponderosa* from the North-west. Our contemporary adds, that there are a dozen other species to which the term Pitch Pine is locally applied, another instance not only of the nuisance, but of the mischief inflicted by the employment of uncontrolled names. In this country we note that *P. rigida* is specially liable to the formation of adventitious shoots from the trunk, so that if the top were destroyed the shoots in question would develop into a bush-like head.

BERBERIS CONGESTIFLORA HAKEOIDES.

When I saw this little shrub in flower against one of the walls in the Coombe Wood nursery, I thought it was the oddest Barberry I had ever seen, and so unlike any other in foliage and flower. It has small round leaves, beset all round with sharp spines, and quite glaucous on their under surfaces. The small bright yellow flowers are crowded into dense clusters in the axils of the leaves all along the young shoots, and looks like a long string of golden knobs. It appears to be similar in habit of growth to other Barberries, but being against a wall one could not tell. I suppose it is hardy, as it comes from Chili, as so many others from that region are. It is quite a choice shrub for those who take special interest in hardy shrubs. *W. G.*

PLANT PORTRAITS.

IPOMEA CAMARUNENSIS, Tauhert, sp. nov.—A tuberous-rooted species, with cordate ovate leaves, and a cymes of pink funnel-shaped flowers, *Gartenflora*, t. 1352.

JOCHROMA GESNERIODES and *J. WARSCEWICZII*, *Bulletin della R. Società Toscana di Orticultura*, July, 1891.

LOASA AMBROSIIFOLIA, *Westnik*, St. Petersburg, August, 1891.

MASDEVALLIA MACRURA, *Orchid Album*, t. 431.

NARCISSUS FENZII (*N. Pseudo-Narcissus* × *Cypri*, Haworth), *Garden Flora*, p. 429, 1891. *N. Cypri* is one of the *Tazetta* section. The hybrid is said to flower in January. Flowers white, intermediate in form between the two parents; corona yellow.

ODONTOGLOSSUM BERGMANNI, *L. Lind.*—Perhaps a white form of *luteo-purpureum*. *Lindenia*, t. 286.

ODONTOGLOSSUM MULUS HOLFORDIANUM, *Orchid Album*, t. 429.

ODONTOGLOSSUM POLYXANTHUM, *Revue Horticole*, August 16.

PEACH THE BRIGDEN, *Canadian Horticulturist*, July, 1891.

FRANCS HEMBLLOT, *Garten Flora*, t. 1353.

PHALENOPSIS SPECIOSA.—A species brought home by General Berkeley, and remarkable for its deep rose-lilac flowers. *Lindenia*, t. 288.

PINK MADAME ERNEST BERGMAN, *Illustration Horticole*, t. 131.—Pure rose flowers, free-flowering and fragrant.

PINUS CEMBAROIDES, *Garden and Forest*, July 29, 1891.—A rare Californian and Arizonan species, found more abundantly in Mexico, where the seeds form an article of food.

POPULUS MONTICOLA, *Garden and Forest*, July 15.—A new Californian Poplar, figured for the first time.

QUERCUS ALNIFOLIA, *Garden*, Aug. 1, 1891.—Leaves, bright gold coloured on the under surface.

TROLLIUS EUROPEUS, and *AURANTIACUS*, *Garden*, Aug. 1, 1891.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

PEACH-HOUSES.—When the fruits are cleared off the earlier trees, the latter are too frequently left without attention of any kind. This should not be, but the syringing of the trees should be performed every evening till the wood is mature, and the leaves have begun to take on the colours of autumn. Neglected Peach trees get infested with red-spider, which plays havoc with the foliage, premature ripening and loss of vigour following. Syringing will prevent this mishap, if it be supplemented by good root-waterings occasionally. The neglect of the latter, I am sure, often leads to bud-dropping when the trees are started. If a good thick mulch was afforded the trees, the border can be kept in a moist healthy state, and the need of root-waterings much reduced, but it should be examined occasionally, and its condition ascertained. Every ventilator should be put wide open. The borders in later houses require similar attention, as during the ripening of the fruit the borders will have been kept dryish, and the foliage not rendered clean by syringing. Remove all shoots that are weak, as also those which have borne fruit this year; doing this will admit light and air to those that remain. The late-fruiting trees should not be allowed to suffer from dryness at the roots, which will certainly spoil the flavour of the fruit.

Now is a good time to make notes of varieties to be purchased, lifted, or removed altogether. Young trees usually grow too fast, and transplanting is best for them; older trees which are growing too fast, being partially lifted. Peaches and Nectarines on the Plum stock soon make new roots after removal, which should take place as soon as the leaves part readily from the twigs. Trees in the early Peach-houses will now be ready for manipulation, and if any of them make too luxuriant growth, no manure need be mixed with the compost of good loam and mortar rubble and waste charcoal. After well watering the trees after planting, place a good mulch over the roots. I will give the names of a few good varieties:—Alexander, Early York, Hale's Early, and Condor; these all come in so much earlier than the older varieties, that when grown with others a break in the supply occurs, so that when these are planted in the second early house, they are often as early or earlier in coming into use as those in the first house. I would advise when these sorts are grown to give them a small house to themselves, or to plant them in the coolest part of the earliest house, and to plant only old early varieties. Early Mignonne, Dr. Hogg, Dymond, Royal George, these will follow those that I first named; Noblesea, Violette Hâtive, Barrington, Walburton Admirable, and Princess of Wales are also good varieties to succeed these. The large-fruited Peaches of recent introduction have only their size in most cases to recommend them, and in sunless seasons they are more lacking in flavour than those. The Nectarine requires the same treatment as the Peach, but the selection of varieties is

more limited, although of late years some fine new varieties have been brought out by Messrs. T. F. Rivers & Son. I have a great liking for Lord Napier for early fruiting, and it is our best Nectarine on the open walls or under glass. In some districts and soils it may not be so good as here on our light soil. Dryden is an excellent new Nectarine; I also like Darwin for its earliness; its flesh is of an orange colour. Elruge, Hardwicke Seedling, Humboldt, and Pine-apple, are excellent; this last is a grand fruiter. Pitmaston Orange is still one of the best, but it is delicate in constitution. Victoria and Violette Hâtive should not be omitted. The above give a fairly large list to select from, and I may here add, that I have grown them all, and others equally good and worthy of cultivation. *G. Wythes, Syon House, Brentford.*

PLANTS UNDER GLASS.

THE COOL CONSERVATORY.—At this season of the year this structure should be put in order, cleaned, painted, and repaired, all the wood-work being washed with soap and water; movable shading material should be taken down, dried and repaired, if necessary, before storing it away. Climbers will require thinning out and regulating, especially strong growers like *Tacsonia Van Volxemii*, *Cobæa scandens*, and several of the *Passifloras*, cutting the shoots back to their allotted space. Plants of *Plumbago capensis* and *P. c. alba* should be examined, and if found to be infested with thrips, they should be thoroughly cleansed of this insect by washing them with Gishurst soap or other insecticide. See that the borders in which are the plants are sufficiently moist, and in the case of exhausted borders, the application of a fertiliser will have a good effect on the flowering of these plants.

Lapagerias in bloom will require care, so that no injury be done to the flowers by scale insects, and thrips, which are very partial to this plant; and, should any of them be found harbouring on the plants when in bloom, the foliage should be washed with a sponge and tobacco-water.

Plants of any species which have stood out-of-doors during the summer—Camellias, Palms, Grevilleas, Rhododendrons, &c.—which are used in furnishing the conservatory, should be cleansed, the pots or tubs in which they are standing may be washed or painted as may be necessary before bringing them indoors. The display of flowering plants may consist of Balsams, Fuchsias, Coleus, Celosias, Begonias of various species, placing the last-named at the warmest end of the conservatory. *Nicotiana affinis* is a useful plant at this season, as is also *Cassia corymbosa*, which is also a very good autumn-flowering plant. The early-blooming *Chrysanthemums*, such as *Madame Desgranges*, yellowish-white; *Précocité*, creamy-white; *St. Mary*, white; *Gustave Wernig*, deep yellow; and *Roi dea Précoces*, crimson; will also be found of value in keeping up the gaiety of the display till the later *Chrysanthemums*, *Primulas*, &c., come into bloom.

HARD-WOODED GREENHOUSE PLANTS.—Preparations should be made to house all those subjects which have been stood out-of-doors, as after the third week in the present month it is no longer safe to trust tender plants outside, although the temperature may not fall so low as to injure the plants, but should it do so but a few degrees below 32°, the foliage becomes unsightly for a long time. In cases where a light framework of wood was erected, and coverings of some kind run over it at night and in wet weather, the plants may be left out-of-doors till the end of the month, without fear of them being damaged by too low a temperature. The return of bright sunshine will be very beneficial to this class of plant, providing means exist of preserving the plants from injury. Epacris, Boronias, Adenandras, and Darwinias should be amongst the first taken in, they being the first to suffer injury by low temperature. Carefully look over the plants, and free them from red-spider, thrips, and aphides before taking them indoors. These plants should occupy a position near the glass. Azaleas, Heaths, Neriums, and Acacias, *Telopeas*, *Banksias*, and *Eucalyptus*, may be kept out a few days longer than the first-mentioned. The Heath-house and other structures, in which these plants are placed, must be well cleaned, walls lime-washed, &c. Less water will be required than in the height of the growing season, but great care must be taken in not allowing the soil to become so dry as to stop root-action, as the stronger-growing subjects will still continue to push out roots, although there may be no top-growth discernible. *R. Milner, Penrice Castle, Swansea.*

THE KITCHEN GARDEN.

CAULIFLOWERS.—Plants raised from seeds sown in August should be pricked out when large enough in beds in a warm aspect. In drawing these plants from the seed-bed, reject all those with crooked stems, or otherwise weak and unhealthy, and clear them of damaged leaves. Plant in rows about 4 inches apart, and do not bury the stems deep in the soil. Gently water them with a fine rose-pot, so as not to break their leaves, or wash the earth into the heart of the plants. If the plants are small or backward in growth, a frame may be placed over the bed, and the lights made use of till the seedlings have taken root, shading them lightly if the sun be very hot. The lights need not be put on unless frosts threaten, or during heavy rain. Any Cauliflowers which were planted out early in July for the Michaelmas crop, will soon begin to show their flower-heads, and should be encouraged in growth by hoeing between the rows, and drawing soil up to the stems; if the weather should continue dry, it will benefit the plants to form a basin round each, and afford water or liquid manure abundantly, if large succulent heads are desired.

SEED SOWING, ETC.—Continue to plant out Lettuce and Endive as the plants become ready. Make small sowings of Lettuce, Endive, Radish, Cauliflower, and Cabbage for late planting, these often coming in very useful when hard weather has killed earlier-sown ones.

CHICORY.—Some of the largest may be lifted, the leaves cut off half an inch above the neck, and placed in the dark to get blanched, using for this purpose wooden boxes filled with light mould, or making a bed of similar material. When planted, afford one good watering, and keep all light away from them.

TOMATOS.—Remove growing shoots, and expose the fruit to the sun; any that are nearly ripe being plucked, and placed on the shelves in any dry greenhouse or vinery to ripen.

CAPSICUMS.—Plants growing out-of-doors may be pulled up when a sufficient number of ripe fruits are to be found on them, hanging up the plants indoors, so that the fruits may mature. Another way is to gather the pods as they become ripe, and dry them in the shade. Lights should be put over plants of Aubergines growing on borders.

TURNIPS.—The late Turnips should now be thinned out to suitable distances, and the hoe plied amongst them until such time as the leaves touch each other. Late-sown Spinach should be weeded and thinned, using when the soil is dry a small hand hoe for the purpose. In wet weather this kind of work is best done by hand-pulling. *C. J. Waite, Glenhurst, Esher.*

THE ORCHID HOUSES.

EAST INDIA-HOUSE.—The temperature of the past week has been more favourable for the ripening of the growths of those Orchids that are grown all the year round in this house, and the bottom and top ventilators have been open at all times, and artificial heat has been seldom made use of. It is better practice now to be a degree under than to go over 70°. Many of the *Phalenopsis* will now be finishing up their leaves, and showing flower-spikes; and if the house be kept too moist and very warm, their leaves are apt to prematurely break away, and the plants seldom finish properly; but by affording good ventilation and a little lower temperature, premature starting can be prevented.

Angraecum sesquipedale should be placed in a warm part of the house, where moisture is more abundant than elsewhere, the plants being now in full growth; and they will not rest until the flowering is past. *A. Scottianum* seems to be a species that will flower at any season; it grows freely, and is seldom found in an unhealthy state. *A. Sanderianum*, a splendid introduction, is somewhat difficult to manage; the small and pretty *A. hyaloides* is always admired when in flower, and it grows well when hung up in small baskets, as does *A. citratum*, and both like strong heat and a temperature laden with moisture. The plants in this house should be looked over occasionally for thrips, these insects being specially injurious to the young leaves. It is safest at this season to keep most of the plants somewhat on the dry side, the next six weeks being, perhaps, those during which it is the most difficult to keep plants in a healthy state.

THE CATTLEA-HOUSE.—Where the convenience exists, it will now be an advantage if plants of *C. Skinneri* are removed to warmer house to complete their growth. The amount of moisture in the house

should be reduced, or the rotting of the unripe pseudobulbs may ensue, and especially if the plants have been in sufficiently ventilated in summer, and growths which appear in fine condition one day, in two days afterwards may be rotting. A temperature of 66°, with much less moisture, will keep the plants sound. *A. G. Catt, Parkfield, Hallow.*

THE HARDY FRUIT GARDEN.

With bright sunshine let us hope that, notwithstanding the late season, the wood, by the end of the season may get thoroughly ripened, so that we may build up hopes of a good crop of fruit the next year.

PEACHES AND NECTARINES.—These, owing to the strong heat, are ripening their fruit very fast, and will require going over daily, gathering the fruits a little under-ripe than otherwise, placing them with care in an airy and well-ventilated fruit-room to finish. These fruits, I find, at this season of the year, are always much better in flavour, and more juicy, than if left on the trees to ripen. Some gardeners go to the extent of placing nets over the trees, making them secure at the bottoms to catch the fruits as they fall; but this, I maintain, is a great error, as the fruits not only get bruised, and spoiled in appearance, but the flavour is very deficient, and the flesh woolly. I find the best plan is to take the handbarrow, placing either a layer of cotton wool, or short grass, on the bottom, putting the fruit carefully on it; they may then be carried to the fruit-room without fear of damage. Keep a careful watch on all later trees heavily cropped, and should the roots get dry, water abundantly with slightly tepid water, assisting the trees also to finish the crop with manure water or other stimulants. Early trees, whose fruits have been cleared, should also receive attention, both at roots and overhead, syringing thoroughly in the morning. To keep the foliage clean and healthy, always give the foremost attention to those trees bearing the best and heaviest crops of fruit to help them to maintain vigour, and keep up their regular cropping.

APRICOTS.—If mildew put in an appearance, dust thoroughly with flowers-of-sulphur. Dryness and impoverished soil are the main causes of this evil, consequently, water thoroughly and feed well; this will greatly benefit the trees, and strengthen the buds for the following year's crop. I attribute the loss of nine parts of the flowers which open early in spring, only to drop, to dryness of soil and want of nourishment at the roots at this season of the year.

MORELLO CHERRIES.—As the fruits are gathered and the trees cleared, remove the nets, and neatly bundle them up in pieces, labelled for their different purposes, together with the size of each piece. A few good dressings at the roots will also be beneficial to the trees, though not unfrequently they get neglected. These bearing on spurs the new wood should be pruned accordingly, always laying in plenty of it to keep the trees thoroughly supplied with fruiting shoots all over them. A slight pruning after the fruits have been gathered will be of great assistance to the ripening up of the shoots reserved for this purpose. *H. Markham, Mereworth Castle, Maidstone.*

THE FLOWER GARDEN.

THE BEDS.—The fine weather experienced during the last week has greatly improved the appearance of the beds and their surroundings. Fuchsias and Lilliums, also pyramids of Pelargonium Madame Crouse, Heliotrope, Calceolaria amplexicaulis, Petunias, &c., are now as gay as they have been at any time during the season. The above subjects either growing in pots plunged below the rims in the green sward irregularly in appropriate places, with similarly trained plants of *Acacia lophantha* and *Abutilon Thomsonii* intermixed, or planted in large beds carpeted with blue or yellow *Viola*, and edged with *Coleus Verschaffeltii*, are very effective. There are nooks and corners in most gardens that would be rendered more beautiful in this manner. They are of easy culture, and rapid growers, and may be trained into any shape. In order to prolong the flowering period as long as possible, the seed-pods should be kept picked off all flowering plants from the time it is desirable to allow them to flower until the flowering time is over. Fuchsias are likely to be used on the flower garden more extensively in the future than they have been in recent years. They are showy and graceful. I refer to them now, so that those who contemplate using them next year in the manner indicated may propagate a stock forthwith.

LOBELIAS.—Those having a good strain of *Lobelia* should pot-up a dozen or two plants from the mixed beds for propagating in early spring. Take the plants up with nice balls, and place them in pots 4½ or 6 inches in diameter, using light sandy mould, and about 1½ inches of crocks, with a few half-decayed leaves over them in the bottom of each pot for drainage; afterwards giving water to settle the soil, and placing the plants in a cool pit, where they can be kept close and shaded for a few days until re-established, when they should be gradually given plenty of air. Before potting, cut away all flower-spikes and straggling roots. See that the necessary number of stock plants of the several varieties of the *Alternanthera*, *Mesembryanthemums*, *Ageratums*, *Salvias*, and *Verbenas* are struck.

CALCEOLARIAS, ETC.—Cuttings of *Calceolarias*, *Leucophytons*, *Gnaphsliums*, *Violas*, and *Pansies* that strike best in cold frames, should be seen to, lest the young growths get injured by frost. A shallow frame placed on a hard surface, gravel or clinkers covered with cinders and coal-ashes, in front of a south wall, is best. Put a layer of short dung to the thickness of 2 inches in the bottom, then about 3 inches of light loam with a surfacing of sand. In this insert the cuttings, which should be from 2 to 3 inches long, in rows about 4 inches apart, and at the same distance from plant to plant in the rows, making the soil firm about them with the dibber, then giving water to settle the soil. Keep the frames close, and shade the cuttings for a few weeks until they have callused, when a little air may be admitted; damp the cuttings overhead in the afternoon of bright days when closing the frames. As soon as they show signs of being rooted, admit plenty of air to them on all favourable opportunities, drawing the sashes off and replacing them at night; the object being to prevent them making much growth before spring. *H. W. Ward, Longford Castle, Salisbury.*

THE APIARY.

WAX REFINING.—It is but seldom that one sees directions given for refining bees-wax. Prizes are offered at nearly all the leading honey exhibitions, and examples are often shown that do not come up to the mark. The finest and best-coloured wax is made from new comb and wax cappings; old black combs yield but very little, and should be melted down by themselves. The wax-extractors ordinarily sold are very good for making small quantities, but to make them more effective, the perforated comb-holder should be enclosed in a flannel bag, so that all the impurity is left behind at one operation, and the wax is of finer quality if run into warm water when it leaves the extractor. Another plan is to place the combs in a flannel bag, and suspend it in an oven over a pan of water; but perhaps the best way for large quantities is to use a copper. In this case, a hoop of wood or stout wire should be made a little larger than the top of the copper, and have a piece of flannel sewn to it, so as to make a shallow bag, in which to place and suspend the combs. The copper should be about half full of water, but care must be taken that it does not touch the flannel—the steam only is required for the operation. When the water cools, the wax can be taken off in a cake perfectly pure, and then remelted and run into moulds for show or other purposes.

RE-QUEENING.—There is still time to furnish stocks with young queens, which may be obtained from skeps that have been saved from the sulphur-pit, and the safest way to introduce the new queen is by placing her in the tubular cage, plugged with candy at one end, and corked at the other, and pressed down between two combs. Driven bees should now be placed on frames containing built-out combs, and ted up as rapidly as possible with syrup at a temperature of about 100°.

PREVENTION OF INCREASE.—Some bee-keepers who have as many stocks as they require, complain of the difficulty they experience in preventing increase. An easy, and at the same time a good way, if swarming cannot be prevented, to accomplish this, is to have a nucleus hive of about seven frames capacity standing by the side of the swarmed stock, into which transfer some of the brood-combs with adhering bees, and return the swarm to its old quarters. In the autumn the old queen can be deposited, and the nucleus containing the new one united to the original stock, by which means it would be in the best of condition to commence another season's work, and there would be no loss of honey. *Expert.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

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

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, SEPT. 22.—Royal Horticultural Society, at Drill Hall; Lecture on "Insect-eating Plants," by Messrs. R. Lindsay & Lewis Castle; and Exhibition of Insect-eating and Pitcher Plants, Flowers, Fruits, and Vegetables.

SALES.

MONDAY, SEPT. 21.—Great Clearance Sale of Plants, Greenhouses, &c., at Beves' Nursery, Acton, W., by Protheroe & Morris (four days). Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.

TUESDAY, SEPT. 22.—Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 23.—Dutch Bulbs and Plants, at Protheroe and Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.

THURSDAY, SEPT. 24.—Dutch Bulbs, at Protheroe & Morris' Rooms. Stove and Greenhouse Plants and Orchids, at Camden House, Sutton, by Protheroe & Morris. Greenhouse Plants at Enfield, by Protheroe & Morris. Special Sale of Dutch Bulbs, at Stevens' Rooms.

FRIDAY, SEPT. 25.—Collection of Established Orchids, formed by the late H. J. Eucban, Esq., of Southampton, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 26.—Dutch Bulbs, at Protheroe & Morris' Rooms. Greenhouse Plants at Eltham, by Protheroe & Morris. Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—56°·3.

The season of the year will soon arrive when the dwellers in our great cities will have to endure the miseries which fog, *i.e.*, that is, in their case, mist mixed with the products of the combustion of coal, will bring them. To know what are the opinions of experts, who have given considerable attention to the subject of town fog, and to know how the evils attendant on the non-combustion of coal smoke may be best met and minimised, may afford those of us who are constrained to live in or near cities, or to carry on gardening operations under such untoward circumstances, some kind of satisfaction. We therefore lay before our readers a report of some recent proceedings.

At the International Congress of Hygiene and Demography, Dr. W. J. RUSSELL, F.R.S., read a paper on "Town Fogs and their Effects," in which he dealt, first, with the circumstances which lead to the formation of fogs, and pointed out that dust particles are necessary for their production, but may be filtered out of the air by passing it through cotton-wool. He then referred

to AITKEN's experiments on dusty and dust-free air, and pointed out the smallness of the amount of matter capable of determining the formation of fog, and that even purely gaseous products cannot pass away when a fog exists, as is shown by the accumulation of carbonic acid which then takes place. Taking 4 in 10,000 volumes as the amount of carbonic acid in London air, he had found it increased in a dense fog to 14·1, which must represent a very serious accumulation of the general impurities of the air. Products of complete combustion are capable of acting as fog producers. There is great variation in the character of fogs, from wet fogs to dry fogs, and they may be made to give their own account of their constituents by analysis of the deposits they leave. As to the meteorological conditions under which fogs usually occur, the persistence of fogs above the dew-point is noticeable; some fogs do not reach the ground, but exist only in the higher regions. The impurities in the air of towns are absorbed by fogs. An estimation of sulphates, chlorides, and organic matter in London fog, and comparison of amounts, show that they are greater than in the air of the suburbs. Quantitative determinations have been made of fog-deposits collected at Kew, Chelsea, and Manchester, showing the quantities of soot and dust contained in them. At the Kew Orchid-houses 20 square yards of roof yielded 30 grammes of deposit, representing 22 lb. to the acre, or 6 tons to the square mile. Mr. DYER said the deposit at Kew was "like brown paint." An examination and analysis had been made by the Manchester Committee, and important and interesting experiments there carried out showed the presence of a large amount of metallic iron and magnetic oxide. Evidence showed that fogs have increased in London and other towns, and that there is a relationship between the increase of dark fogs and the consumption of coal in London. In regard to the effects produced by fogs, it was stated that a three days' fog at Manchester produced a deposit containing per square mile 1½ cwt. of acid and 13 cwt. of blacks. The general effects on the human subject were serious, and statistics showed that the death rate is seriously affected by fogs. In the London district (an area of 15 miles round London) in 1875, 4,880,000 tons of coal were consumed, while, in 1889, the consumption had risen to 6,390,000 tons, and supposing only one per cent. of the sulphur escaped and accumulated in fogs, that would represent a serious impurity. A marked effect was produced by them on plant life, as shown by the experiments made at Chelsea by Dr. FRANCIS OLIVER for the Royal Horticultural Society. Town fog has a powerful destructive action on many kinds of plants, and interesting results had been obtained from an investigation of the nature of the specific poisons which may exist in fog. Fogs are, in almost all cases, produced by a sudden and great reduction in temperature, with a large resulting increase in the death-rate, which is, however, attributable rather to the sudden fall in temperature than to the fog itself. Fogs have a great action in absorbing light, and have a special power of absorbing the more refrangible rays. An estimation of the amount of gas burnt in London to compensate for the light absorbed by fogs gave 25,000,000 cubic feet in London in one twenty-four hours' day during the winter. Deleterious effects on health must arise from this absorption of light. A comparison of the amount of sunshine in London with that in the neighbourhood, and some other places, resulted much to the disadvantage of the metropolis. Experiments on the distances at which objects are visible during a London winter showed the density and opacity of London fogs. Upon the questions whether fogs can be abolished from towns, and whether, if not abolished, they can be rendered free from foreign matters, the answer was that as long as coal is burned in towns dense fogs must form. Fire-grates, kitcheners, and furnaces might be much improved, but it was improbable that the improvement would be so great as to ensure perfect combustion. The alternative was to adopt gas and coke for fuel. Even then the presence of sulphuric acid

in the air would still have to be considered, but our fogs would at least be whiter. The social aspect of the question still remained, namely, how to compel people to give up using coal, for it was impossible at the present day to do as was done in the reign of EDWARD I., that was to try, condemn, and execute a man for burning coal in the City of London. Mr. HARTOG, in reference to the investigations and experiments which had been made on the subject in Manchester, said, the first thing they desired to ascertain was, the amount of sulphur as an indication of what the presentible impurities were, which, of course, included the products of combustion in animal bodies, sulphuric acid being of course due wholly to coal combustion. Significant results were obtained. In the centre of Manchester, during three days' snow, 10 milligrammes of sulphuric acid per metre were found deposited on the first day, 19 on the second, and on the third it had risen to 31. Three miles from the centre of the town only 7·5 milligrammes were found on the third day. This showed the necessity of having various stations for obtaining trustworthy information. Other experiments in Manchester led to similar results in regard to the impurities in the atmosphere, and great advantage might be obtained from experiments of the same kind in other large towns in the country. An interesting description was then given of the apparatus for determining the amount of sulphurous acid in the air. Dr. RUSSELL had collected the dust from the air by using cotton-wool, and his example was followed in the Manchester experiments. They also used permanganate according to TRIVY's method. With Dr. RUSSELL they entirely agreed also as to the serious effects from want of light in foggy weather. Like him, the Manchester Committee was unable to prescribe a panacea for fog, but their object was at all events to take the first step of ascertaining and describing its symptoms.

Professor F. W. OLIVER, of Kew, then read a paper upon the "Effects of Fog upon Plant Life." He said those effects were found to be very marked in Orchid collections, and were injurious to the leaves, foliage, and young shoots of plants and flowers at even 40 miles distance from London. Their nutritive organs were affected and destroyed, and they died. As regards the injurious constituents of London fog, sulphurous acid was conspicuous; in Manchester, hydrochloric acid. By experiments in closed chambers, he had been able to produce upon plants all the effects and phenomena of London fogs. The changes produced were a gradual swelling, and then breaking down of the protoplasm, resulting in the death of the plant in three-quarters of an hour or less. No doubt the sulphurous acid in fogs was the chief cause of mischief to both animal and vegetable life. The tissues of leaves absorbed metallic oxides, particularly iron from fog deposits. It had been found necessary for the preservation of plants at Kew, as for the protection of legislators in the House of Commons, to filter the air through cotton wool, and to supply the deficiency of light in foggy weather by electric illumination.

THE APPLE AVENUE AT WALTHAM CROSS.—

The illustration (fig. 39) represents an avenue of fruit trees, 400 yards in length, in Messrs. WILLIAM PAUL & SON'S Nurseries at Waltham Cross, Herts. There are 500 trees, each of a distinct kind, 2 yards apart, 250 on each side, varying from 20 to 30 feet in height, mainly pyramid Apples on the Crab stock, but comprising also Pears, Cherries and Plums. It was planted about thirty years ago, but since that time many trees have been discarded as worthless, and better sorts put in their places. The soil is a tenacious loam, 2 to 3 feet deep, lying upon pebble-gravel subsoil; it is well drained, and the only manure ever used in the nurseries is rotted stable-dung, and that sparingly. That the place is well adapted for fruit culture is seen in the healthy state of the trees, absence of canker, and other diseases. Besides being a trial-ground, the avenue of old trees is used as a source of buds and grafts, thus ensuring correctness in nomenclature. Summer pinching is

persisted in to allow the sun to enter the interior of the trees, and to develop fruit spurs the whole length of the branches. All the best varieties of fruits were here, and bearing abundantly such Apples as Worcester Pearmain, Ribston Pippin, Cox's Orange Pippin, Lord Suffield, Lord Grosvenor, Devonshire Quarrenden, Meloo, Peasgood's Noosuch, Lord Derby, Emperor Alexander, New Hawthornden, &c. A variety like Cox's Orange Pippin, named Mabbett's Pearmain, a mid-season Apple, was particularly fine. Plums, such as Kirke's Czar, Quillin's Gage, Jefferson, Victoria, &c. Pears were very fine, Thompson's, Doyenné Bonssoch, Beurré d'Amanlis, and a coloured variety of the latter called Punachée, with crimson and gold stripes; Pitmaston Duchess, and several others.

BRITISH MOSSES.—The Rev. H. G. JAMESON has reprinted from the *Journal of Botany*, his useful *Key to the Genera and Species of British Mosses*, which may be had from Messrs. WEST, NEWMAN & Co., 51, Hatton Garden. It is based upon HOBBIK's *Synopsis* and BRAITHWAITE's *British Moss Flora*. A plate giving illustrations of some of the terms used is very useful. It is interesting, too, to note the germination of Mosses with or without a protonema.

CINGALESE PLANTS.—We have received a copy of the "Catalogue of Orchids, true Ferns, Cycads, Palms, hulbs, &c.," to be had of Messrs. J. P. WILLIAMS & BROS, Heneratgoda, Ceylon. The list is an interesting one to plant lovers and wholesale dealers.

227 trees of various descriptions which they would be very glad to place at the disposal of any parties who would claim them, and pay the expense of planting them. Otherwise, the whole thing must drop to the ground. Mr. WIGHAM RICHARDSON moved— "That inasmuch as the Newcastle Corporation are about to apply to Parliament for further powers in connection with their bye-laws, the Tree Culture and Protection Society respectfully suggests that special powers be taken to plant and maintain trees within the precincts of the city, and to enforce the laying out of new streets, and particularly of main thoroughfares, of such a width that trees may be planted either in single or in double rows along each side, or in single or several rows along the middle of any street or thoroughfare which the Corporation



FIG. 39.—THE APPLE AVENUE IN MESSRS. W. PAUL AND SON'S NURSERY. FROM A PHOTOGRAPH. (SEE P. 340.)

GREAT MALVERN.—It is arranged to hold a large Chrysanthemum and Fruit Show at Great Malvern in November. An influential list of patrons and a good committee having been secured to carry it out, a good exhibition may be expected. Mr. ARTHUR D. MELVIN, Madresfield Estate Office, is Hon. Sec.

SIR TREVOR LAWRENCE, M.P., has been spending the recess in the Hartz Mountains. Lady LAWRENCE, who accompanied the Hon. Baronet, returned to Burford Lodge, Dorling, recently. Sir TREVOR, who was detained in Belgium, returned to be at home on the coming of age of his eldest son on the 17th inst.

NOVA SCOTIA APPLES.—The Apple crop, on the whole, is not expected to reach the average.

TREE CULTURE AND PROTECTION SOCIETY.—A meeting of the committee of the Newcastle Tree Culture and Protection Society, says *The Newcastle Daily Leader*, was held in the studio of Mr. T. H. CAMPBELL, Pilgrim Street, Newcastle-on-Tyne, last week, under the presidency of Alderman W. D. STEPHENS. The financial statement showed that there had been received £52 7s. 6d., and after meeting all liabilities there remained a balance in hand of £3 12s. 6d. The sum of £2 had been received towards defraying the cost of planting trees in Belgrave Terrace. The Chairman thought the society could not undertake the planting of trees in Belgrave Terrace, which would cost £30. They were willing to give the trees, provided the people in that particular district subscribed towards the cost of planting them. They had

may determine." It was decided to forward a copy of it to the Council for consideration.—Mr. WIGHAM RICHARDSON stated that the County Council of Northumberland, in conjunction with that of Durham, intended to consider the river smoke nuisance. He believed that was due very much to the work of their society. Sir MATTHEW WHITE RIDLEY had interested himself in the subject, but the difficulty seemed to be to find a prosecuting body. He thought it would be discussed at the next meeting of the County Council, and he understood the question would be put, whether the Tree Culture Society would interfere so far as to prosecute. Alderman STEPHENS said, if the County Council would find the cost of prosecuting, they would do the work willingly.

ROYAL DUBLIN BOTANIC GARDENS.—We find

in the *Daily Graphic* of September 15, the following brief account of the above Gardens, together with illustrations of the Palm-house, Curator's house, a Sequoia gigantea, and the bridge and lake; and, curiously enough, a bunch of Sarracenias, labelled Orchids (!), raised in the Gardens. "Just one hundred years ago, the 'Right Honourable and Honourable Dublin Society' obtained a grant from the Irish Parliament for the establishment of a Botanical Garden for promoting scientific knowledge in the various branches of agriculture, and to foster and increase a taste for practical and scientific botany. A site for the garden was chosen about 2 miles from Dublin, on the banks of the Tolkat, a picturesque trout stream running through the village of Glasnevin. The neighbourhood is one not only of great natural beauty, but also of much classical and historical interest. Here at various periods have lived SWIFT, ADDISON, SHERIDAN, THOMAS PARNELL—who assisted POPE in his translation of the *Iliad*, DEAN DELANY, 'Stella,' and other literary celebrities. The ground selected had formerly been within the demesne of TICKELL, the poet, by whom many of the trees still growing in the gardens were planted, and whose house is at present occupied by the Curator. From their establishment down to 1834, the gardens did not undergo much alteration or improvement. In or about the year 1834, however, Mr. DAVIN MOORE was placed in charge, and under his energetic Curatorship of upwards of forty years, public attention was drawn to the gardens, and very much undertaken to bring it to its present order. The gardens now cover an area of more than 40 acres. They are admirably laid out, and can boast of a splendid range of conservatories, together with an enormous Palm-house. This was built in 1884 to replace the first one, which had been destroyed by the storms of the previous autumn. There is also a house for Ferns, and what is called the 'Victoria House,' in which during the summer floats the splendid Victoria Regia Water Lily. In the conservatories there are many rare and beautiful exotic plants. It is here that the annual display of Chrysanthemums, which always proves such a source of attraction to the good folk of Dublin, is held every autumn. The great Palm-house also attracts many visitors. Until 1887 the gardens remained under the control of the Royal Dublin Society. In that year, however, they were transferred to the Government; the whole is now being placed in connection with the Science and Art Department. Dr. MOORE died in 1879; it is his son, Mr. W. F. MOORE, who is now in charge as Curator."

DEATH FROM DRINKING A WEED-KILLING COMPOUND.—On Saturday, the 12th inst., an inquest was held at Cirencester by Mr. Deputy-Coroner SMITH on the body of H. L. SMITH, aged about two years, who died on the previous Wednesday. The father of the boy, the Superintendent of the Cemetery, had been using a preparation called the "Luda," for the purpose of destroying the weeds on the walks. He had measured out the liquid with a jug, and left the jug turned upside down, which the child afterwards placed to his mouth. The fluid was thick, and would adhere to the rim of the jug, and although only a small quantity could have been swallowed, the child died within eight hours. Too much care cannot be taken to keep these deadly preparations out of the reach of children and others. It comes as a surprise, in view of the stringent regulations enforced in regard to the sale of poisons not a whit more dangerous, than these excessively poisonous weed-killers can be purchased freely by anyone.

WILD MAIZE.—Mr. SERENO WATSON, in the last part of the *Proceedings of the American Academy of Arts and Sciences*, p. 158, mentions a wild species of Maize found in the State of Guanajuato (Mexico), seeds of which were grown in the Botanic Garden, Cambridge. The plants flowered this season, and were found to be quite different from ordinary Maize. It was at first thought that the original

wild state of the cultivated Maize had been secured, but on careful comparison, Mr. WATSON comes to the conclusion that the plant in question belongs to a new species.

CHAMÆDorea PRINGLEI.—This is a newly-discovered Palm, growing in San Luis, Potosi, and the most northern locality known for any species of this genus. It is described by Mr. SERENO WATSON in the *Proceedings of the American Academy*, vol. xxvi. (1891), p. 157.

AN ELECTRIC GARDEN ENGINE.—Messrs. MERRYWEATHER & SONS, of 63, Long Acre, have a novelty in small pumps, worked by the electric current. As many of our country seats are now supplied with electric lighting machinery, it may be well to consider how the electric "stream" may be further utilised. Messrs. MERRYWEATHER's pump is well suited for garden work, as it is only necessary to fix it by a pond or fountain, and attach a suction and delivery pipe, when the little engine will project the water in the usual manner.

JAMAICA.—Mr. W. FAWCETT, the Director of the public plantations, has printed a useful Index of the economic products derived from plants native to Jamaica. The list will be very useful for reference.

SEEDLING SUGAR CANE.—In the twenty-fifth annual report of the Queensland Acclimatisation Society, Mr. SOUTHER, the manager, records that on visiting Bundaberg, in the Wide Bay district, he observed almost every plant producing "arrows" (inflorescence). Seeds were collected and sent to Brisbane, where, ultimately, seventeen plants were raised, representing five varieties.

FUCHSIAS AT THE CHARTERHOUSE.—In the gardens of the Charterhouse there is, said the *Daily Chronicle* recently, perhaps the finest collection of Fuchsias in this country—certainly in London. Mr. HENRY HAMMERTON, who has charge of the gardens at the Charterhouse, estimates that he has 190 Fuchsias at present in all the pride of bloom. The plants are arranged in little groups at the doors of the houses, or spread out in rows along the sides of the wall in, say, "Old Wash-house-square." For ten or a dozen years Mr. HAMMERTON has gone on cultivating the Fuchsias, to the growing pleasure of their natural guardians, the brothers of the Charterhouse. Strictly, the Charterhouse Gardens are not public, but the permission to visit them is merely a matter of form. The show—that word may fairly enough be used—includes about 10 varieties of the Fuchsia. Only the varieties which can stand the smoke and dust and destructiveness of a London atmosphere are cultivated. But they are cultivated to remarkable perfection; some stand 8 feet in height, others 6, others 3 or 4. All are alike in the richness of their flowering, and in the shading and deep colouring of their petals. No doubt it is a triumph to grow Fuchsias so successfully in the heart of London, but it is a triumph involving immense care and trouble. In winter the plants are protected in a 40° temperature, and during the spring, summer, and autumn they are carefully nurtured on a specially prepared diet, whose ingredients need not be discussed. One of the most successful Fuchsias at the Charterhouse is that which gardeners know as Scarcity, so called because fanciers cannot get enough of it. A brother of the name of JOHN HUGHES introduced this variety to the Charterhouse, and so the brothers call it John Hughes. Another species, Lady Elizabeth—its petals are marked with white, against the purple and blue of Scarcity—also does unusually well, and the same can be said of the variety Dan'l Lambert. Yet another member of the Fuchsia tribe, Neptune, is remarkable less for the grace of Lady Elizabeth, or the magnificent petals of President Garfield, than for the length of time it keeps in bloom. Lincolnshire White does very well, but, as a gardener would say, "flowers itself to death," and wants a lot of tying up. A new plant, known as White Petticoat, has been introduced at the Charterhouse, but it

remains to be seen whether it can grow and thrive upon our London air. People who want to know more of the Charterhouse Fuchsias should visit them; the gardens in which THACKERAY and HAYLOCK and JOHN LEECH played as boys make a fine lung in our metropolis.

MESSRS. KEYNES, WILLIAMS & CO.'S NEW CACTUS DAHLIAS.—Among the numerous excellent stands of Dahlias staged by the above firm, but not for competition, at the Wilts Horticultural Society's Show, held in Salisbury on the 12th inst., was one containing twelve seedlings of the Cactus, which will put many of the older varieties completely in the shade. They are St. Catherine, bright yellow, the back petals being shaded amber, a true Cactus, surpassing Juarezii in its long gracefully-pointed petals—the best Cactus Dahlia hitherto seen; awarded a First-class Certificate. Keynerith, light crimson with a tinge of golden-yellow at the base of the petals, of splendid Cactus form, and in every way a decided acquisition; a First-class Certificate. Dr. Masters, light blush, a good addition to the light class of decorative Dahlias. Baron Schroder, pleasing shade of bright purple, of the light Cactus form, and in every respect an improvement; First-class Certificate. Mrs. Arthur Newall, reddish-chocolate, new in colour, and quite distinct. Lady Pembroke, a pinkish shade of lilac, quite new in colour; First-class Certificate. Lady Radnor, a pinkish shade of salmon, with the base of the petals primrose, one of the prettiest shades of colour.

NARCISSUS VICTORIÆ ×.—In the last number of the *Garden Flora*, M. SPRENGER describes a hybrid Narcissus between *N. pseudo-Narcissus* and *N. aureus*. The flowers are in tufts, yellow, with a deeper-coloured cylindrical crown.

"JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—The last part issued contains various papers read at the meetings of the Society on Cyclamen, Snowdrops, Lachenalias, Cape Bulbs, and Hybrid Rhododendrons. The latter paper, by the Rev. Professor HENSLOW, is a valuable and original contribution to the subject of cross-breeding.

BOURNEMOUTH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The third annual excursion of the above association was made to the Earl of RADNOR's garden at Longford Castle, Salisbury, on Wednesday, September 9. The party included Dr. HITCHCOCK (President of the Association), and Messrs. J. A. FYLER, J. J. SWAFFIELD, G. WATTS, jun., W. WATTS, and J. PHILLIPS, nurserymen. A pleasant walk from Alderbury Station brought them to an entrance of Longford Park, where they were welcomed by Mr. WARD, the head gardener, two of his sons, and Mr. WARDEN the gardener at Clarendon Park, who conducted the party over all parts of the garden. The bedding-out on the terrace, the fine crops of fruit under glass and in the open air, the capital kitchen gardens, &c., all came in for a share of admiration. After a luncheon in a tent, kindly lent by his lordship, the afternoon was spent in cricket and other amusements, the party returning to Bournemouth delighted with their excursion.

EUCALYPTUS.—Messrs. D. McALPINE and J. R. REMFRY have published, in the *Transactions of the Royal Society of Victoria*, an interesting communication, illustrated by lithographs, showing the structure of the petiole in some thirty species of this genus. There can be no doubt that the minute anatomical characters are valuable for the purpose of discrimination; but before we can decide upon the degree of value they have, it will be necessary to study the anatomy of the different species in different stages of growth, and from specimens taken from plants growing under different circumstances. The thickness of the hard bast, or skeletal tissues, for instance, probably depends on the conditions under which the plant is growing. It is obvious, therefore, that extensive comparative research is necessary before the value of the

characters relied on by Messrs. McALPINE and REMFRY can be fairly estimated; but, in the meantime, those gentlemen have earned the thanks of the botanists for their careful researches, and stimulated their hopes for further results of a similar kind.

THE PRESENCE AND FUNCTION OF SULPHUR IN PLANTS.—Messrs. BERTHELOT and G. ANDRÉ, two well-known French scientists, have recently been investigating the rôle played by sulphur in the economy of plant life. They examined the following plants: *Sinapis alba*, *Camelina sativa*, *Allium cepa*, *Lupinus alba*, *Urtica dioica*, *Tropæolum majus*, and *Avena sativa*; and determined the sulphur in the seed and in the plant at the various stages of germination, flowering, and fructification. It seems that the total quantity of sulphur increases continually from germination to inflorescence, but the relative quantity is about one-third higher in the earlier stages of growth. The organic sulphur reaches a maximum when the plant is in flower, and afterwards decreases. Since organic sulphur is found in the roots, especially during the time of flowering, it is probable that the sulphur is not absorbed from the soil entirely in the form of sulphates. The proportion of these two forms of sulphur varies considerably in different species, and the final reduction of the proportion of organic sulphur is due partly to elimination in the form of volatile compounds and partly to reoxidation during fructification.

THE RAISING OF A GOOD SEED POTATO.—In a paper on this subject, F. BLENSON states that the whole method of culture in Potato-growing seems to exert a somewhat deleterious influence on the plant, and that, therefore, degeneration easily occurs in Potato varieties. Sufficient care is not bestowed upon the selection of the seed: smooth, medium-sized tubers are the best for producing heavy crops of full-sized tubers. Then the planting must be more carefully attended to. The distance at which the sets should be placed from each other is of great importance; if the plants get plenty of air there is much less danger of disease. Only ripe tubers should be used for seed, and in harvesting all others should be rejected for the purpose. Instead of taking the small Potatos from the general crop, our market gardeners would do well to select and grow specially the tubers for seed with more care than they bestow on the main crop.

THE NEWCASTLE HORTICULTURAL SOCIETY.—In reference to the appeal of the Mayor of NEWCASTLE for subscriptions to meet the losses incurred by the Society on the occasion of its last attempted show, when a gale swept away their tents, the public have come forward in a handsome manner, and up to Saturday, September 5, money had come in to the amount of £525. It is to be hoped that the efforts of this Society in the future may be crowned with the success which it so richly deserves.

THE PEOPLE AND PRIVATE GARDENS.—Lady WOLVERTON, who has a beautiful garden attached to her residence, Coombe Warren, near Kingston, very kindly last week placed it at the disposal of a local association for the purpose of a public *fête*, or garden party. The gathering comprised several thousands of persons, young and old, and various amusements, including dancing, as well as enjoyments of a more solid nature, were indulged in to a late hour. Happily the weather, which had just previously been remarkably wet, was on that occasion very dry. We refer to this fact, because her ladyship's excellent gardener, Mr. WOODGATE, was enabled to report next morning that, practically, no harm whatever had been done to the grounds, the shrubs, or flowers. This is very pleasing, because it shows how great is the confidence those who possess beautiful private gardens may repose in what is ordinarily a well-conducted mass of respectable people. So charming a garden as that of Mr. BERTRAM CURRIE, near by, was employed for a similar purpose last year, and with similar results. It is very pleasant to be able to refer to cases of this kind, which may easily be largely multiplied if desired, as they show how

greatly the public appreciate privileges of this description. Would that we could find many of the beautiful gardens of the country thus freely thrown open to a public, too largely, except in favoured

the year, on payment of a small fee. That some gardens have been so utilised, does but show that there are hundreds which might help if equally utilised; for everywhere experience shows that the public know how to appreciate the privileges they thus are permitted to enjoy.

SOUTH KENSINGTON AND AGRICULTURAL CLASSES.—It has been decided by the Science and Art Department, South Kensington, to inaugurate a series of science classes dealing with agricultural subjects in rural districts during the autumn and winter. Such classes would receive not only the grant, but also such grants as the County Councils may see fit to award. Prize-money will be given to those who pass the examination with a first class to the extent of £2, and to those who pass in the second class the prize will be £1. The department is endeavouring to stimulate interest in these subjects, on the part of local schoolmasters.

THE SALE OF PLANTS AT MILLBANK, EDINBURGH.—The celebrated collection of plants at Millbank was sold by auction on the 10th inst., by Mr. DAVID MITCHELL, 6, Comely Bank, Edinburgh. The occasion of the Caledonian Show brought a large company to witness the dispersion of the splendid *Ericas*, greenhouse *Rhododendrons*, *Azaleas*, &c. Buyers were not numerous, yet the prices obtained were fairly good. Specimen *Azaleas* brought from 3 to 5 guineas, *Ericas* from 3 to 7 guineas, *Palms* from 50s. to 63s. *Orchids* generally went cheap, but a specimen *Masdevallia Walkeriana*, about 2½ feet across, brought 19 guineas.

THE GREAT INTERNATIONAL SHOW AT EDINBURGH.—We have received various protests against the manner in which some of the southern exhibitors in the non-competing classes were treated at Edinburgh. The complainants are under the impression that their exhibits, which did much for the success of the show, were unfairly ignored. The truth, we believe, is that the Council has not yet decided upon the nature of the awards to be made, and it is probable some time will elapse before a decision is arrived at. This delay is unfortunate, but we are loath to believe that it implies any want of recognition on the part of Caledonians of the efforts of their southern brethren. Other complaints relate to the removal of exhibits and to the consequent confusion, but when the gigantic proportions of the Show, and the necessity of absolutely vacating the building in time for the Saturday market, are considered, much allowance must be made for the officials.

CYPRIPEDIUM MACROCHILUM,

n. gr. hyb. (LONGIFOLIUM ♀ LINDENII ♂).

This new production of Messrs. J. Veitch & Sons, and which was awarded a First-class Certificate at the Royal Horticultural Society, on August 11 this year, is one of the most extraordinary which the skill of the hybridiser has yet produced. Using the pollen of the practically pouchless *C. (Uropedium) Lindenii* on *C. longifolium*, the unexpected result in the progeny of an extraordinarily large and elongated labellum or pouch, as seen in the illustration (fig. 40), was produced. The plant has the usual bright green leaves of the *Selenipedium* section of *Cypridium*, and the one from which the illustration was taken had a four-flowered scape. The upper sepal is creamy-white, slightly tinged with green, and having greenish lines thereon, the lower sepals are similar to the upper. The petals, which resemble those of *C. caudatum*, have purple hairs at the base; they are greenish-white, tinged and streaked with rose-colour and deepening in hue towards the tips. The staminate node has a fringe of purple hairs, and the labellum which forms the striking feature in the flower is ivory-white, tinged in places with pale green, and the veinings coloured, and between them tinged with reddish-brown. The labellum is curved forward, and its unfolded lobes are white, beautifully spotted with rose. In delicacy of beauty, if not in stature,



FIG. 40.—CYPRIPEDIUM MACROCHILUM X REDUCED.

localities, denied good garden privileges. What a considerable addition to the Gardeners' Orphan Fund could be made were many of our beautiful private gardens thrown open, if but for a few days in

it takes rank above even its ally, the stately and favourite *C. grande* × (*C. longifolium* var. × *C. caudatum*), *J. O'B.*

HOME CORRESPONDENCE.

NEW PLANTS.—Amongst interesting new plants I have recently heard of, are a pure ivory-white-flowered tall and vigorous-growing *Kniphofia* from the Drakensberg Mountains, in South Africa; and a yellow-flowered *Pancratium maritimum* from Algiers, and the latter I hope to bloom shortly, when I shall have more to say about it. *W. E. Gumbleton.*

JUDGING OF POTATOS AT EXHIBITIONS.—Being an exhibitor at the Edinburgh International Show, and not knowing the true types of Potatoes, and the points they should be judged upon, I shall feel greatly obliged if any qualified judge will inform me, through your columns, what special points of merit a Potato should possess to fit it for the exhibition table. It was remarked, by some men capable of knowing, that the best exhibits of Potatoes lost the awards at the International Show at Edinburgh. I should also like to be informed how many types of Potatoes there are? *One Who Wishes to Learn.*

WHAT IS A HARDY PLANT?—It is very hard upon judges at flower shows when they are called upon to interpret some imperfectly worded and perhaps misleading class in a schedule. It is equally hard upon a horticultural show committee when judges, either wilfully or stupidly, misinterpret the obvious meaning of a class as given in the schedule. Take the case referred to by "E. W.," at Bridgewater. There the committee, in leaving the wording so literally as "hardy perennial and bulbous plants," are careful to admit of a liberal and wide interpretation. The judges limit that interpretation in a singularly restricted sense. What is *Hydrangea paniculata* but a hardy plant? It has proved itself to be so almost everywhere. It passes through our severest winters unscathed [?], and comes up and blooms superbly every autumn. What is it but a herbaceous perennial, just as a herbaceous *Phlox* is? Really, there is absolutely no distinction between them in hardiness and habit, except that the growths of the *Hydrangea* are rather more woody or hard than are those of the *Phlox*. The same may be said of the growths of a *Polygonum*, or of many other herbaceous plants, which some class as shrubs, but really are not shrubs, because the growths disappear in the winter. If *Roses*, and all ordinary hard-wooded shrubs, which are not herbaceous, but are perennial, are excluded from classes termed hardy perennials, it can only be by some general understanding, because "hardy perennial" is a term which includes every hardy thing which grows. If a footnote were added "excluding *Roses*, shrubs, and trees," then it would be pretty well understood that any hardy plant not found in either of those three sections could be admitted. Still, there is the point to be determined, are hard-wooded plants of annual growth from the roots in the ordinary acceptance of the term "hardy herbaceous perennials," or "hardy herbaceous shrubs?" I say, they are of the former section. *A. D.*

WATERLOO STRAWBERRY.—I was glad to see your correspondent Mr. Divers speak well of the Waterloo Strawberry, and I can confirm his remark that it has cropped better this year than formerly, although with me it always crops well; and I consider it has the finest flavour, and that it is the best variety I have grown. It may not be a market fruit, being too dark in colour, the colour of the pulp being deep crimson; but it is sugary, and the fruit ripens well up to the point. It has not the fine flavour of Filbert Pine, British Queen, and Dr. Hogg, nor the robustness of Noble—but Noble is the coarsest, most flavourless Strawberry that I know of, and for my table it is not worth growing. Waterloo maintains the high reputation given to it when sent out by Messrs. J. Veitch & Sons, Chelsea. *J. Pope, Northfield, Birmingham.*

DOES IT PAY TO CROW APPLES?—I was pleased to read the remarks by "S. H." at p. 274 of the *Gardeners' Chronicle*, although they are rather hard upon me, but that is a small matter if we can add anything to the knowledge we already possess. I would like to say, that I had not the least intention of making invidious comparisons between any class of men, and do not wish to be misunderstood in this. I am thankful to say that my lot has always been

cast where I could order a suit of clothes to be made; nor did I ever contemplate a district where there were no tailors. It is not of much consequence, but I have found that men following sedentary occupations like tailors and shoemakers, are more fond of their gardens than farm labourers who have to work hard in the fields all day, and are often too tired to do anything at night. Gardening is a rest to the other class of men. I quite admit that the four-tined fork is a superior implement to the more clumsy spade. We use up four forks to one spade for digging in our garden. I gave the prices paid for steam cultivating at Loxford Hall some ten years ago, and the same price was paid on a neighbouring farm last year; but as I was quoting from memory, I wrote to Mr. C. H. Binney, of Ilford, who contracts for such work, and quote his letter *in extenso*:—

"Dear Sir,—I am in receipt of yours in reference to steam cultivation in the preparation of the land for fruit growing. There is no doubt that it is very beneficial. A few years ago, my engines were employed upon a large farm at Cheshunt, and previously to that at Enfield, doing just what you say; and where it was necessary to go through the land once, 15s. per acre, as the price for hire of the tackle, would be about right; but if the land needed that the cultivator should go through it a second time, it would be 22s. to 24s., according to the character of the land. Heavy land, never having been steam-cultivated, would cost 24s. per acre for hire of engines only; but at double this, the work would pay the grower, and be cheaper than spade husbandry."

The above is Mr. Binney's letter, and he has a large experience in steam cultivation. As to the prices of the fruit, I gave exactly the prices received from the salesman in the Borough Market. I wish some other growers would record the result of their experience in fruit growing, and failures would be as useful as successes. *J. Douglas.*

LATE BROCCOLI, VEITCH'S MODEL.—I am at one with Mr. Wythes, as to the excellence and bardiness of this variety; here, on a cold heavy clayey loam, it grows rampantly, and not planted too thickly, it withstood the severity of the past winter, where others failed. As late as June 27 this year we cut some nice heads of this variety. *G. Ward, Brant Broughton, Newark.*

EXOTIC FRUITS AT EDINBURGH SHOW.—The display at the exhibition in Edinburgh must have generally realised expectations. The fruits, with one exception, consisted solely of the ordinary fruits grown, the exception being *Passiflora edulis*. Are there no other *Passifloras*, for instance, grown with edible fruit? Besides this fruit, there are Cape Gooseberries, Guavas, *Monstera delicosa*, and various others which are surely worth having some attention given to them, and encouragement shown to the growers. *W. M.*

POTT'S SEEDLING AND LORD GROSVENOR APPLES.—In reply to "X.," respecting these varieties, I have grown Pott's Seedling in these gardens for the past fifteen years, and have never known this variety to fail bearing a heavy crop of fruit annually during that time, no matter what the season has been. It bears fruit the year after planting, is a very free grower, quite free from canker, and the blossoms escape frosts. The same can be said of Lord Grosvenor. I have planted and grown this variety during the past twelve years; it is a codlin of good size, not quite so large as Lord Suffield, being a very free grower, and wonderfully productive. I have used this variety largely to replace Lord Suffield, which kind I have nearly abandoned, on account of its liability to canker, the branches of the trees dying away from this cause till they become so unsightly as to render it absolutely necessary to uproot and replace them with others. The above two varieties can either be grown as standards or bushes, with a certainty as to their fruitfulness. Added to these, Ecklinville Seedling and Stirling Castle—these four, in my opinion and experience, constitute the cream of the early culinary varieties, for the large size of their fruits, earliness, and great productiveness, either for private use or market purposes. *Edward Ward, Hewell Gardens, Bromsgrove.*

POTT'S SEEDLING APPLE.—In reply to "X.," on p. 286, as to Pott's Seedling Apple, I have found it to be an excellent cropping Apple, and of good quality, keeping with me well into January. I have here an old tree that has not failed a crop for many years; it does not appear to grow to a large tree, but is quite free from canker. I have some young trees,

planted two years since, also carrying good crops having had a few good fruit on last year. The Jolly Beggar I cannot speak of from experience, but Dr. Hogg, in his *Fruit Manual*, speaks of it as a certain cropper. The soil here is a sandy loam on gravel. *J. Howard, Benham Gardens.*

RAINFALL IN WILTS.—The rainfall of August, 1891, exceeds in this part that for any month since 1871. In the past month, 8.19 inches fell on twenty-three days, the greatest fall being on the 20th, viz., 1.20 inches. The previous greatest rainfall in any month, of which I have a record, was in October, 1875, when the total was 7.66 inches; and the next was in August, 1879, when the rainfall amounted to 6.81 inches. Much farm and garden produce has suffered; and, if the weather does not soon change, there must be very serious results. Already all varieties of Potatoes are going off rapidly with the rot; fruit is cracking and falling, notably Plums, Apricots, Gooseberries, and Cherries; and Wheat in the ear has started to grow; Hay is lying upon the ground spoiled. Turning to the decorative part of the garden, we find scarcely a flower in beds and borders. All the finer and more sun-loving flowers are spoiled, and those that survive are badly blown about. Fine foliage plants are spoiled entirely, through gales and storms we have experienced in this part of the country. Thunder and lightning occurred nearly daily, and the old inhabitants say they do not remember to have noticed so much before. If the rain does not soon cease, we shall feel it next year as well as now. *W. A. Cook, Compton Bassett Gardens, Calne.* [Publication delayed.]

[PASSIFLORA CONSTANCE ELLIOT.]—In the gardens at Chaddlewood, South Devon, there was a large specimen of this plant, growing against a north wall, which last year bore hundreds of white flowers. But the winter proved to be more than it could stand, and it was cut back to the main stem, within a few feet of the ground. This wall, although facing north, is sheltered from north winds by a plantation of Fir trees, some yards distant. The blue variety, *P. cœrulea*, growing alongside of it on the same wall, was also cut, but not to the same extent. They are both shooting again, but it will be some time before they cover the same space they did before. I infer that *P. Constance Elliot* is not quite hardy, and that *P. cœrulea* is much the hardier of the two. There were also two *Constance Elliot* replanted in the autumn, but one was killed outright, and the other to ground-level, but is shooting again from the bottom. I should also add that the thermometer on one occasion stood as low as 10°, or 22° of frost. *H. Grillage.*

POTATO DISEASE.—Having tried the comparative merits of high moulding and the sulphate of copper remedy, we think the results may be interesting to others. We selected a nearly square piece of ground, planting ten varieties in parallel rows right across the piece. Stable manure was employed, and a fair dose of lime; and the soil, a good loam, is situated above a clay subsoil. The varieties planted were mostly new, or of recent introduction, being such as The Dean, Village Blacksmith, The Gentleman, The Amateur, The Cottager, The Bruce, a new American variety named Pride of the West, and two new varieties to be sent out by us next season, Prodigious and The Bishop. A space of 8 feet at each end of the drills and across the piece was measured off, and on one of these spaces high moulding was tried; on the other, the salts of copper mixture; and the middle portion left alone. On digging the piece last week, the results were striking and convincing. That portion treated with salts of copper showed a very much heavier yield of sound tubers, because, with the exception of the Dean and the Village Blacksmith, none of those so treated were diseased more than to about 1 or 2 per cent. The end of the rows treated on the high-moulding method was diseased to the extent of 10 to 15 per cent., while the larger and middle portion suffered a good deal, the disease reaching quite 30 per cent. in the case of the Dean and the Village Blacksmith, and in the other sorts the percentage of diseased tubers varied from 10 to 20. The net result of our experiment was, in round figures, that the relative proportion of sound tubers lifted from the piece right across, was—for the salts of copper treatment as 6, for the high-moulding method as 4, for the "trust to Providence" theory as 3. What struck us, however, as especially noteworthy in the experiment, was the fact that the piece treated with the mixture grew stronger and more vigorous haulm; the stalks remaining longer green, even, in some

cases, up to the time of digging, and apart from the question of disease, yield a much heavier crop. In short, the mixture, as well as being of remedial value, acted as a fertiliser and stimulant, by keeping the plant in a healthy and growing state. In applying the stuff, the varieties with rough foliage seemed a little burned after its application, the smooth-leaved sorts suffering no ill-effects. The mixture we used was that recommended by M. Prillieux, and given in the *Gardeners' Chronicle* of July 4 last, namely, 3 lb. of sulphate of copper, 1 lb. of quicklime, 20 gallons of water, applied at the rate of 140 to 150 gallons per acre. As the disease did not show itself early amongst our Potatoes, we did not apply the mixture until July 24, and only gave them one dose. The cost of the mixture would be about 5s. per acre. *Robert Veitch & Son, Exeter, September 14.*

HARDINESS OF HYACINTHUS CANDICANS — I see in last week's issue, Mr. Earley asks the question as to the hardiness of *Hyacinthus candicans*. I planted some here four years ago, and they have flowered well every year; and last winter they had no protection at all, which proves it to be a very valuable hardy plant. Last autumn I also planted fifty more bulbs, 6 inches deep in the soil, and covered them, when done, with about 4 inches of coal ashes, and these all came up, and flowered well. *H. Hatch.*

— In answer to William Earley's questions as to the hardiness of *Hyacinthus candicans*, I am happy to inform him mine have stood out in a bed of *Hellebores* sloping towards the north for five years without any protection. They have never been lifted, and are now in flower, consequently may be considered as perfectly hardy. *The Hon. Mrs. Hope, Belmont, Murrayfield.*

THE VARIEGATED ENGLISH ELM.—There is a large specimen of the above growing in the shrubberies attached to the pleasure and flower gardens here, it being the only one we have. I have watched it very closely during the past fifteen years, and from the very slow growth it makes, I should judge it cannot be less than about one hundred years old. A wet season affects the variegation very much, it being much more effective in a dry summer. From my experience of the tree, it is not a variety that I should care to plant largely for effectiveness, at least, not in this district. *Edward Ward, Hewell Gardens, Bromsgrove.*

— Forty or more years ago, there was growing just outside the Foxfield Gate, on the Amphill road, on the right hand side, a very handsome plant of the above tree, and at that time I should say it must have been 30 feet high, and a perfect pyramid, with variegation from the lowest to the highest twig, and I recollect that it was on a high bank close to the road, which would account for its very fine variegation (see Mr. J. Perkins, *Gardeners' Chronicle*, p. 284, September 5). Should any of my old colleagues be still in the land of the living, they may be able to give a better account of this handsome plant than I can at this distance of time. Mr. Forbes was head gardener at Woburn Abbey, Mr. George Dodds was foreman of the pleasure grounds, and Mr. Simpson was in the kitchen garden; the apprentices that I can recollect were—Thomas Cannon, James Wood, Charles Hume, Charles de Fraim. Visitors to the kitchen garden at Woburn Abbey will, I am informed, still find this Elm flourishing on the spot I have indicated. *Henry Davies.*

— With reference to the interesting article in recent issues relating to the variegated Elm at Ealing, I would remark, that a very fine specimen exists in the garden of Henry Knox, Esq., Sonning Grove. Mr. Knox informs me, that it is as near as possible 11 feet round at a foot from the ground. I can myself testify to its being a very fine tree, and the first one of the kind I ever saw. The circumference of the Ealing tree does not appear to be recorded. *John Colebrook.*

— Mr. R. Dean does well in calling attention to this handsome and highly ornamental variety of the English Elm—*Ulmus campestris albo-variegata*. The Elm, in its old age, is nearly always stately, but this variety has a beauty of its own. One of the finest specimens I have seen in the west of England is on the estate of Mrs. Grant, of Hilliersdon, near Cullompton. The tree must be pretty old, though in robust health, for it is over 70 feet high; while another specimen, planted about twenty years ago, hard by it, is 40 feet high. This Devonshire specimen stands amongst other fine timber. I think

it is a pity that variegated Elm is not oftener met with, for it certainly is a highly ornamental tree. *A. Hope, Exeter.*

SCOTLAND.

EDINBURGH CONFERENCE ON FRUIT GROWING.

IN connection with the International Fruit and Flower Show of the Royal Caledonian Horticultural Society, the British Fruit Growers' Association held a conference on fruit-growing in the Waterloo Hotel, Edinburgh, on the 10th inst. Councillor Colston, Edinburgh, presided; and in opening the proceedings, he explained that the objects of the Association were to promote the profitable culture of fruit in Great Britain and Ireland; to facilitate the distribution of fruit to the consumer, and to disseminate practical information on the subject of fruit-growing.

Mr. George Gordon, Vice-Chairman of the Association, gave a communication on "The Present Condition and Prospects of Fruit-Growing for Profit." At no time, he said, had fruit-growing been carried on so successfully as at present, yet there was room for much improvement. Those acquainted with the midland and western counties of England were well aware, that notwithstanding the favourable conditions for fruit-growing which existed in those counties, there were tens of thousands of acres of orchards which did not pay because of long-continued bad management. From the same cause, and also the erroneous idea that fruit-growing would not pay, the formerly magnificent orchards of the Carse of Gowrie had almost disappeared.

Observations made in Ireland last year led him to the conclusion that fruit growing there was in a discreditable condition. In Ulster, thousands of acres were occupied with orchards planted sixty or seventy years ago, the produce of which generally was unfit for market. The owners appeared to hold the opinion that the orchards would not pay for good cultivation. The speaker's opinion was, however, that the unprofitableness was not the cause, but the consequence of neglect. In orchards in the same district, in which good management was practised, crops of the highest excellence were found, the produce of which realised good prices in the market, a sufficient proof that neither the soil or the climate were at fault. Well-managed trees yielded good results, and it was the endeavour of the British Fruit Growers' Association to enforce this fact.

Mr. Malcolm Dunn, Dalkeith, took exception in some degree to the statement of Mr. Gordon, that the orchards had almost disappeared from the Carse of Gowrie. He admitted that the magnificent fruit formerly produced in those orchards had to a large extent disappeared, but there were still to be met with examples of superior culture, which always brought good results. He could not advise anyone to go in for fruit culture without the necessary training; at the same time, he thought the difficulties of our climate were exaggerated.

Mr. Cannell, Swanley, Kent, said it seemed to him them gardeners made more of the difficulties of fruit-growing than was warranted. Proper breaking up of the ground, suitable varieties, proper planting and staking, manuring from the surface, and pruning, then really the thing went on almost of itself. He thus got big Apples and big Plums, and they sold well.

Mr. Hugh Dickson, Belmont, Belfast, said that he had taken an interest in fruit-growing in the north of Ireland, and he had been surprised to find how much attention was paid by farmers to fruit culture. They seemed to be well-up in a knowledge of the new varieties. The weakness of their system was that they did not classify their Apples in sending them to market.

Mr. Sinclair, market gardener, East Linton, read a practical paper on "Strawberry Culture." Firm clayey soil, well drained, he considered the best for

Strawberries, and trap-rock the best foundation for such a soil. In order to have fruit in the market early, it was necessary to plant in the sunniest aspect; but otherwise it was not desirable to have a full southern exposure. He preferred preparing his runners in autumn and planting in March, to planting at any other season of the year. As regards varieties, he considered that the fewer a market gardener grew the better. Vicomtesse Iléricart de Thury and Duke of Edinburgh, he considered the two best varieties for market purposes in Scotland. It did not pay to grow such late varieties as Elton Pine, as they had to compete with Green Gage Plums and other fruits. After eighteen years' experience in artificial irrigation, he considered that it paid, even at heavy cost, if done thoroughly when necessary. His practice was to give a thorough soaking once a week, and he had spent as much as £13 per week on watering his Strawberry crops. Speaking on the subject of markets, he thought the time was near when the greater number of growers would confine themselves to the supply of the jam manufacturers. He spoke of the unfair competition which market gardeners were exposed to, in so far as nearly every landed proprietor now sent the produce of his garden into the market. He did not object to that, but did complain that he should have to pay more taxes on 23 acres of land than were paid on any nobleman's establishment in the county.

Mr. J. Cheal, Crawley, read a paper on "Gathering and Packing, and Storing Fruit," in which he advocated greater care in gathering, sorting, and packing of fruit for market; described various facilities for packing and storing, and the management of late fruits in the storing-rooms.

Mr. Alex. Milne, Edinburgh, moved a vote of thanks to the Association, and the proceedings terminated with a similar compliment to the Chairman.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 3.—A meeting of the Fruit and Vegetable Committee was held at Chiswick on the above date. Present: Dr. Hogg, F.L.S., in the chair; and Messrs. Wright, Pearson, Saltmarsh, Dean, Denning, Willard, Norman, and Cummins. The committee examined the collections of Potatoes, Turnips, Runner Beans, and Tomatoes growing in the gardens.

Potatoes.—The crop in general was found to be inferior, the tubers large and coarse, and most of the varieties greatly diseased. The following sorts were selected by the committee for appearance, cropping, &c., and then cooked:—Malshanger Kidney (Knelner), Radclyffe Kidney (Selby), The Gentleman (Veitch), Lord Salisbury (Wiles), The Times (Ross), Ellington's Prolific (Ellington), Seedling (Studd), Mottled Beauty (Wiles), Market Favorite (Ellington), Crawley Prizetaker (Cheal), Renown (Nye), Mottled Beauty, Ellington's Prolific, and Crawley Prizetaker receiving three marks (x x x) each.

Turnips.—Of these, forty-eight lots were grown, the following receiving x x x:—The Early Milan (Veitch, Benary, Harrison), the Early White Strap-leaf American Stone (Vilmorin), the Large White Globe Purple-Top (Vilmorin), the Large Green Globe (Vilmorin), and Early Snow Ball (Veitch).

Scarlet and other Runner Beans.—Forty-four lots. These were found to be scarcely in condition for examination, with few exceptions. A First-class Certificate was awarded to Sutton's Tender and True—a Runner Bean of the dwarf kidney section, with fine, long, straight pods.

Tomatoes.—Of these 117 lots were grown under glass, the following receiving x x x:—Golden Sunrise (Veitch, Barr, Daniels), Golden Nugget (Sutton), Italian Wonder (Hooper).

Committee Awards.

Meeting at the Drill Hall, Tuesday, September 2.

FLORAL COMMITTEE.

Awards of Merit.

To *Gladiolus* Sir Arthur Sullivan, Sheila, W. S. Gilbert, George Meredith, and Lady Brooke, from Messrs. Kelway & Sons.
To *Dahlia* Arthur Rawlings, William Powell, and Mrs. Keith, from Mr. West.
To *Dahlia* Claxton's Harlequin, from Messrs. Paul & Son.

To Croton Golden King, from Mr. H. B. May.
To Athyrium f.-f. superbum densum and f.-f. revolveas, from C. T. Drury, Esq., F.L.S.
To Scolopendrium vulgare muricatum superbum and v. m. crispum, from E. J. Lowe, Esq., F.R.S.
To Aspidium angulare grandiceps coronale, A. a. setosum gracile, A. a. plumoso-divisilobum gracile, and A. aculeatum cristatum adnata, from E. J. Lowe, Esq.
To Asplenium ceterach var. multifolia-cristata, from E. J. Lowe, Esq.

First-class Certificate.

To Athyrium f.-f. plumosum Druryi, from C. T. Drury, Esq.
To Scolopendrium vulgare crispum decorum, from E. J. Lowe, Esq.
To Scolopendrium supralineatum Moona, from E. J. Lowe, Esq.
To Scolopendrium rameo-inequale laudabile, from E. J. Lowe, Esq.
To Asplenium f.-f. lunulatum Neilliae, from E. J. Lowe, Esq.
To Aspidium angulare grandiceps taeda, from E. J. Lowe, Esq.
To Aspidium a. cruciatum Nympha, from E. J. Lowe, Esq.
To Aculeatum cristatum hybridum, from E. J. Lowe, Esq.
To Nephrodium palacaeum Willsii, from E. J. Lowe, Esq.
To Osmunda regalis capitata, from E. J. Lowe, Esq.

Botanical Certificates.

To Picea Omorika and Davallia assamica, from Messrs. Veitch & Sons.
To Scolopendrium vulgare periferens var. Nepenthesoides, from E. J. Lowe, Esq.
To Aspidium aculeatum cristatum circumglobatum, from E. J. Lowe, Esq.

Commended.

To Strain of Quilled Asters, from J. Walker.

Medals.

Silver Flora.

To Messrs. Kelway & Son, for group of Gladioli.
To Mr. G. Phippen, for group of Dahlias.
To Mr. G. Phippen, for group of Lilies, &c.
To Mr. E. J. Lowe, for group of Ferns.

Bronze Banksian.

To Messrs. J. Veitch & Sons, for group of hardy plants.
To C. G. Van Tubergen, for group of Gladioli.

FRUIT COMMITTEE.

Silver Banksian Medal.

To Messrs. J. Veitch & Sons, Royal Exotic Nurseries, for collection of Plums.

Award of Merit.

To Melon Halstead Favourite, from Alfred Gibson, gr. to T. F. Burnaby Atkins, Esq., Halstead Place, Sevenoaks, Kent.

ORCHID COMMITTEE AWARDS.

First-class Certificate.

To Miltonia Blunthi var. Lubbersiana, from Baron Schroder (gr., Mr. Ballantine).

Cultural Commendation.

To Angraecum articulatum, from C. J. Lucas, Esq. (gr., Mr. Hasham).

Botanical Certificate.

To Cattleya granulosa var. Djanceana, from Messrs. Sander & Co.
To Mormodes fimbriatum var. aurea, from Messrs. Hugh Low & Co.
To Catasetum fimbriatum, from Mr. G. Parrot, gr. to W. Wright, Esq., Denmark Hill.
To Catasetum fimbriatum, from Hugh Low & Co., Clapton.

CRYSTAL PALACE.

GREAT EXHIBITION OF FRUIT, September 4 and 5.

—Judges: Messrs. A. F. Barron, Smith, Wythes, Earley, Coomber, Hudson, Ford, Dean, Willard, Laing, Whalley, and Wynne.

Fruit (open classes).—Collection of fruit, two competitors—1st, Earl of Haddington, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre); this lot consisted of Black Hamburg, Muscat of Alexandria, Barbarossa, and White Tokay Grapes, Violette Hative and Rivers' Orange Nectarines, Noblesse and Bellegarde Peaches, Kirke's and Golden Drop Plums, Queen and Cayenne Pines, Victory of Bath and Conqueror of Europe Melons, Worcester Pearmain Apple, &c., all in good condition; 2nd, Earl of Radnor, Longford Castle, Salisbury (gr., Mr. H. W. Ward), who showed handsome Sea Eagle and Prince of Wales Peaches, St. Michael's Orange, Vicomtesse Hélicart de Thury Strawberries, &c.

Collection of twelve dishes of fruit, two competitors, 1st, J. H. Rolls, Esq., The Hendre, Monmouth (gr., Mr. Thomas Comber), a nice lot, consisting of Gros Maroc and Muscat of Alexandria Grapes, Pine-apple Nectarine, Bellegarde Peach, Kirke's Plum, &c.; 2nd, Earl of Radnor, Longford Castle (gr., Mr. H. W. Ward), with Trebbiano and Gros Guillaume Grapes, Duchess of Oldenburgh Apple, Brown Turkey Figs, &c.

Collection of eight distinct dishes of fruit (four competitors)—1st, Mrs. McIntosh, Havering Park, Romford, Essex (gr., Mr. A. Ocock), with Black Hamburg and Muscat of Alexandria Grapes, Noblesse Peach, Havering Park Melon, Pittmaston Orange Nectarine, Red Astrachan Apple, Williams' Bon Chrétien Pear, Brown Turkey Fig; 2nd, Duke of Beaufort, Badminton, Chippenham (gr., Mr. W. Nash), who had good Black Alicante and Muscat of

Alexandria Grapes, large Barrington Peaches, nice dish of Beauty of Bath Apple, &c.

For a collection of ten kinds of Grapes, W. C. Watson, Esq., Clarendon Park, Salisbury (gr., Mr. C. Warden), was awarded 1st prize for the only lot shown; he had good Gros Maroc, Black Alicante, Buckland Sweetwater, &c.

Two competitors for a collection of five kinds of Grapes: 1st, Mr. George Reynolds, Gunnersbury Park, Acton, with fine bunches of Gros Maroc, Muscat of Alexandria, Chasselas Napoleon, Black Hamburg, and Alicante; 2nd, Mr. Thomas Osman, Outershaw Park, Chertsey, Surrey, having beautiful Lady Downes, Alicante, Mrs. Pearson, &c.

For best three bunches of Black Hamburg Grapes, there were ten competitors. Earl Cowley, Draycott House, Chippenham, Wilts (gr., Mr. J. Gibson), was an easy 1st.

Six exhibits of three bunches of Muscat of Alexandria Grapes, Sir Charles Phillips, Bart., Picton Castle, Haverfordwest (gr., Mr. J. Dumble), being 1st, with large bunches of handsome berries; Mr. George Reynolds, Gunnersbury Park, being a good 2nd. The latter was also 1st, among four competitors, for best three bunches of Gros Maroc Grapes; Hon. W. P. Talbot, Glenhurst Park, Esher (gr., Mr. C. J. Waite), coming 2nd. For best three bunches of Madresfield Court Grape, there were six exhibits, Earl Cowley, Draycott House (gr., Mr. J. Gibson), coming 1st.

Among seven competitors for best three bunches of Alicante, Mr. W. Marsh, 9, Henrietta Villas, Bath, was 1st, with beautiful rich black bunches; Henry Tate, Esq., Park Hill, Streatham Common (gr., Mr. W. Howe), being 2nd, with large bunches, but not so well coloured. The prize for three bunches of any other white Grape went to W. C. Watson, Esq., Clarendon Park, Salisbury, for Buckland Sweetwater. Six competed. The prize for three bunches of any other black Grape was awarded to Earl of Radnor, Longford Castle (gr., Mr. H. W. Ward), for very large bunches of Mrs. Pince's Black Muscat; Mr. George Reynolds, Gunnersbury Park, was a good 2nd, with well-coloured Alwick Seedling.

Four dishes of distinct Peaches, three competitors—1st, Earl of Cork, Marston House, Frome (gr., Mr. W. Iggulden), showed Sea Eagle, Walburton Admirable, Barrington and Crimson Galande, of fine size and colour; 2nd, J. T. Hopwood, Esq., Ketton Hall, Stamford (gr., Mr. W. H. Divers), with Bellegarde, Crawford's Early, Prince of Wales, Grosse Mignonne, also very good. The latter exhibitor was 1st in Class 16, four dishes of Nectarines, consisting of Pine-apple, Lord Napier, Victoria, Rivers' Orange; Mr. J. McIntosh, gr., Hutton Hall, Guisborough, being 2nd, with Pine-apple, Humboldt, Darwin, and Spencer, four competed.

For best single dish of Peaches, thirteen entered, A. Willis, Esq., Lovell House, Crawley, Sussex (gr., Mr. W. Lawson), taking 1st with Grosse Mignonne; Earl Radnor (gr., Mr. H. W. Ward), being 2nd with Sea Eagle.

Seven entered with one dish of Nectarines, J. T. Hopwood, Esq. (gr., Mr. W. H. Divers), being 1st, with beautiful Lord Napier Nectarines. He was also 1st, with collection of six dishes of Peaches, and six dishes of Nectarines—two competed.

Twenty-four competitors exhibited green-fleshed Melons, the best-flavoured being a finely-netted variety, Halstead Favourite, shown by T. F. B. Atkins, Esq., Halstead Place, Sevenoaks (gr., Mr. A. Gibson); the 2nd prize went to Earl of Harrington, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre), for a smooth-skin variety.

Twenty scarlet-flesh Melons were exhibited; the best was Sutton's Triumph, exhibited by Mr. W. Palmer, Kingston-on-Thames; the 2nd being Blenheim Orange, from W. Stride, Esq., Coulsam Grange, Caterham, Surrey (gr., Mr. J. Mathews).

Four dishes red Plums, eleven entered.—1st, Viscount Falmouth, Mereworth Hall, Maidstone (gr., H. Markham), with Victoria, Goliath, Prince of Wales, Sultan—beautiful fruits; 2nd, Earl of Cork, Marston House (gr., Mr. W. Iggulden), with Victoria, Prince of Wales, Angelina Burdett, and Pond's Seedling. The latter was 1st, among eleven competitors, with four dishes of yellow Plums, consisting of Oullin's Golden Gage, Golden Esperen, Transparent Gage, and Jefferson; 2nd, Mr. J. Neighbour, Bickley, Chislehurst, with Jefferson, Magnum Bonum, Pershore, and Green Gage.

Four dishes purple Plums, ten competitors.—1st, Earl Amburst, Montreal, Sevenoaks (gr., Mr. Alfred Bolton), with Prince Englebert, Prince of Wales, Dymond, and Kirke's; 2nd, Earl of Radnor (gr.,

Mr. W. H. Ward), with Kirke's, Dymond, Mitchellson, and Belgian Purple.

R. Sneyd, Esq., Keele Hall, Newcastle, Staffordshire (gr., Mr. John Wallis), was 1st, with three dishes of Figs (the only entry).

Basket of black Grapes, above 12 lb. in weight.—J. Parrott, Esq., East Barnet, Herts (gr., Mr. D. Macintosh), was 1st; W. J. Twigg, Esq., Croxsted House, West Dulwich (gr., Mr. E. Longley), was 2nd, both showing well-grown Gros Maroc; nine competed.

Three competitors showed baskets of white Grapes above 12 lb. in weight.—1st, Mr. W. Lane, King's Ride, Ascot; 2nd, W. Maw, Esq., Walk House, Barrow-on-Humber, Hull (gr., Mr. G. Winter), both with Muscat of Alexandria, in good form.

Two collections of 12 kinds of orchard-house grown Apples were staged, the 1st prize going to Messrs. George Bunyard & Co., Maidstone, Kent, who showed beautiful Lady Sudeley, Queen, Warner's King, Ribston Pippin, Peasgood's, Bismarck, Melon, Washington, Emperor Alexander, Stone's Apple, Mother, and Red Bietingheimer, all very fine.

Three collections of ten kinds of orchard-house-grown Pears were put up, Mr. J. McIntosh, Hutton Hall Gardens, Guisborough, taking 1st, with large specimens of Beurré d'Amanlis, Louise Bonne of Jersey, Brockworth Park, Souvenir du Congrès, Beurré Clairgeau, Clapp's Favourite, Van Mons, General Todleben, Pittmaston Duchess, and Doyenné du Comice; Messrs. G. Bunyard & Co., taking 2nd, with nice fruits, including rich yellow examples of Dr. Jules Guyot.

Three collections of open-air autumnal Apples were shown.—1st, Messrs. G. Bunyard & Co., with forty-three kinds, including richly-coloured Beauty of Bath, Worcester Pearmain, Cardinal, Early Strawberry; also fine Lord Grosvenor, Golden Spire, Northern Dumpling, &c. 2nd, H. L. C. Brassey, Esq., Preston Hall, Aylesford (gr., Mr. A. Waterman), with nice collection, including good Worcester Pearmain, Duchess of Oldenburgh, Cox's Pomona, Golden Spire, Queen, &c.

The only collection of open air autumnal Pears came from Messrs. George Bunyard & Co., who had twenty-eight sorts, including the new American Lawson Pear, rich crimson and yellow with fine aroma; Early Benoit, bronze-crimson; and very good Doyenné Boussoch, Durondeau, &c.

Nine collections of six distinct Tomatos were shown; 1st, Mr. R. Spinks, Florist, Horley, Surrey, who had splendid Acme, Trophy, Goldfinder, New Jersey, Dedham Favourite, and Turner's Hybrid; 2nd, Mr. Arthur Rawlings, Dahlia Nursery, Romford, with Trophy, Stamfordian, Perfection, Livingstone, Earliest of All, &c.

Flowers (open classes).—Two collections of 100 Gladioli spikes: 1st, Messrs. J. Burrell & Co., Nurserymen, Cambridge, for a nice lot of Gandavensis and Lemoine's Hybrids, among them Grand Mogul, vermilion, striped slate, large and open; Pactole, clear lemon-yellow; Pasteur, pink, striped rose; Amalthee, white, crimson eye. 2nd, Mr. W. H. Fowler, Claremont, Taunton, also very good, including Flamboyant, vermilion-scarlet; and Grand Rouge, glowing scarlet with purple eye.

Eight stands of two dozen quilled Asters.—All were good, the 1st going to Mr. John Walker, nurseryman, Thame, with bright distinct flowers; 2nd, Messrs. Saltmarsh & Son, nurserymen, Chelmsford, for neat pretty flowers. The last-named were also first among fourteen stands of twenty-four French Asters; this lot had been "dressed," making the flower incurved with an outer ray of expanded florets. The 2nd prize here went to Mr. W. F. Catlin, 9, Lower Midsummer Buildings, Bath, for some flowers with nice colours.

Three exhibits of twenty-four Hollyhock blooms.—1st, Messrs. Webb & Brand, Nurserymen, Saffron Walden, the best being Vesta, blush-pink; and Mulberry Gem, purple crimson.

Two boxes of stove and greenhouse cut flowers were staged.—1st, T. F. B. Atkins, Esq., Halstead Place (gr., Mr. A. Gibson), with tastefully-arranged lot, including four varieties of Dipladenias, also Ixora, Eucharis, Plumbago, Lapageria, &c., set up with Maidenhair.

Two lots of six Cockscombs in pots.—1st prize going to W. M. Bullivant, Esq., Homewood, Beckenham (gr., Mr. Thomas Crosswell), for dwarf compact plants; 2nd, T. Nothard, Esq., York House, Sydenham (gr., Mr. J. Slater), both lots had good combs.

Three groups of early-flowering Chrysanthemums were arranged, the 1st prize going to Messrs. Reid & Bornemann, nurserymen, Lower Sydenham, for a

large group consisting chiefly of Japanese varieties, with dwarf Pompon in the front; 2nd, Mr. H. J. Jones, Ryecroft Nurseries, Lewisham, for a group of nice plants, covering about 80 square feet.

Cut Flowers.—Amateurs.—Three stands of eighteen Gladioli spikes: 1st, Mr. W. H. Fowler, Claremont, a choice lot, including Pollux, deep rose; Grand Rouge, vermilion; M. Brognian, bluish; Delilah, rose, &c. 2nd, Mr. E. B. Lindsell, Bearton, also very good, including Grand Rouge, Pyramidale, Celmène, Pactole, &c.

Three stands of one dozen Hollyhock blooms were staged, the 2nd prize being awarded to Mr. Thomas Hobbs, St. Mark's Road, Easton, Bristol; 1st, withheld.

Special prizes.—Given by Messrs. Sutton & Sons, for the best collection of nine kinds of vegetables (four competitors): 1st, Hon. W. P. Talbot, Glenhurst, Esher (gr., Mr. C. J. Waite); the collection consisted of Satisfaction Potato, Prizetaker Leek, Mammoth Cauliflower, Duke of Albany Pea, Lemon Rocca Onion, &c., all very well grown; 2nd, Mr. W. Palmer, Kingston-on-Thames, for a good collection, including Mammoth Cauliflower, Perfection Potato, Student Parsnip, &c. Eleven entries of Sutton's Perfection Tomato: 1st, Hon. W. P. Talbot; 2nd, Earl Cowley, Draycott House (gr., Mr. J. Gibson).

Special prizes, offered by Messrs. James Carter & Sons, for the best six fruits of Blenheim Orange Tomato, brought six competitors—1st, Mr. J. Fry, Haydon Hall, Eastcote; 2nd, Mr. Joseph Slater, Shepley House, Carshalton.

Offered by Daniels Bros., for the best fruits of Daniels' Westley Hall Melon—1st, Mr. W. Chessleburgh, Worsted House, Norwich; 2nd, withheld.

NON-COMPETITIVE EXHIBITS.

Messrs. T. Rivers & Son, Sawbridgeworth, had a fine collection of choice Peaches, Plums, Pears, &c., particularly good Monarch and Grand Duke black Plums.

Messrs. John Laing & Sons, Forest Hill, London, had a charming lot of herbaceous cut flowers, arranged with their own foliage, showing what a variety of colour can be obtained from hardy plants. A large bank of Begonias in baskets lifted from the open, interspersed with Maidenhair and Cocos Weddelliana, was brilliant. We noticed a rich lemon-yellow double Begonia Duchess of Teck as being good.

Messrs. Paul & Son, Old Nurseries, Cheshunt, besides herbaceous plants, had a collection of ornamental foliage trees, among them Shepherdia argentea, with brown shoots and silvery metallic foliage; plumose Elder, Ulmus myrtifolia purpurea, small purple leaves.

Mr. T. S. Ware, Hale Farm Nursery, Tottenham, had a large collection of Cactus, Pompon and single Dahlias, some nice dwarf plants of Tree Carnation La Neige, pure white, and a large group of seedling Begonias of most varied colours and shapes.

Messrs. Wm. Paul & Son, Waltham Cross, Herts, exhibited 150 dishes of choice Apples and Pears; specimens of the delicate pink, cup-shaped, Rose Spencer, with recurved petals, a good autumn sort; also Mme. Marie Lavalley, a Tea Rose, habit of Gloire de Dijon, with pale pink, semi-double flowers.

Messrs. Henry Cannell & Sons, Swanley, had a brilliant group of seedling double Begonias, pink, yellow, white, and other tints; the plants were raised from seed sown last January. They also had a new type of Cactus Dahlia, with twisted petals, named Robert Cannell, magenta colour. Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, had a collection of hardy Pears and Apples, also Cactus and bouquet Dahlias. Messrs. John Peed & Sons, Mitcham Road, Streatham, collection of fruit, also Apples and Pears in pots full of fruit.

First-class Certificates were awarded to T. S. Ware, Tottenham, for Begonias Challenger and Double Triumph; and to Messrs. J. Burrell & Co., Cambridge, for Gladiolus Grand Mogul.

NATIONAL DAHLIA.

SEPTEMBER 4 AND 5.

See ante, p. 312.

AMATEURS' CLASSES.

Show Dahlias.—The best twenty-four blooms, fancy varieties being also admissible, came from Mr. J. T. West, gr. to W. Keith, Esq., Cornwall, Brentwood, a very fine lot of blooms, consisting of R. T. Rawlings, H. Keith, Maud Fellowes, Duke of Fife, Mr. Saunders (fancy), Harry Turner, Clara, J. T. West, W. Rawlings, Henriette, Lord Chelmsford, William Powell (a very fine new yellow self), Mr. D. Saunders, Henry Glasscock (fancy), Willie

Garratt, Arther Rawlings (a very fine crimson self), R. T. Rawlings, Mrs. Gladstone, Miss Henshaw, Matthew Campbell (fancy), Shirley Hibberd, Frank Pearce, Glowworm, Mrs. Langtry, and Prince of Denmark. This stand was awarded the *Gardeners' Magazine* Medal for excellence of culture, the blooms being even, of good size, fresh, clean, and well-coloured. 2nd, Mr. Thomas Hobbs, Lower Easton, Bristol, whose leading flowers were J. T. West, Colonist, William Rawlings, Maud Fellowes, George Barnes (fancy), Mrs. Foreman, Prince of Denmark, Mrs. Langtry, T. S. Ware, Joseph Ashby, R. T. Rawlings, Vice-President, Mrs. Gladstone, and Mrs. Harris.

With twelve blooms, the competition confined to show Dahlias only, Mr. A. Ocock, gr. to Mrs. McIntosh, Havering Park, Romford, was 1st, with William Rawlings, Clara, Prince of Denmark, R. T. Rawlings, Maud Fellowes, Mrs. D. Saunders, Mrs. Glasscock, John Standish, Mrs. Gladstone, Majestic, George Rawlings, and Mr. G. Harris; 2nd, Mr. S. Cooper, Hamlet, Chippenham, with R. T. Rawlings, Mr. D. Saunders, Colonist, Crimson King, Mrs. Glasscock, and T. J. Saltmarsh; 3rd, Mr. Thomas Anstiss, Brill, Bucks.

There were ten stands of six blooms, Mr. J. Gilbert, Brooklands, Freshwater, Isle of Wight, who had T. J. Saltmarsh, Willie Garratt, Florence, Earl of Ravensworth, Mrs. Gladstone, and Joseph Ashby; 2nd, Mr. H. Gibbs, Ightham, Sevenoaks.

Fancy Dahlias.—Mr. J. T. West also had the best twelve blooms of fancy Dahlias, and staged excellent flowers of Professor Fawcett, Mrs. Saunders, Duchess of Albany, Rev. J. B. M. Camm, Buffalo Bill, Henry Eckford; 2nd, Mr. S. Cooper, with Duchess of Albany, Mrs. Saunders, Edmund Boston, Dorothy, Frank Pearce.

Mr. A. Ocock had the best six blooms out of nine competitors; 2nd, Mr. G. Boothroyde, with Mrs. Saunders, Rev. J. B. M. Camm, Henry Eckford, and A. F. Barron.

Cactus and Decorative Dahlias.—The best six varieties, six blooms of each, came from Mr. J. T. West, who had Beauty of Brentwood, Marchioness of Bute, Mrs. Rolfe, Mrs. Keith, new yellow and silvery-pink—very fine; Black Prince, and Mrs. Douglas. 2nd, Mr. P. Perry, gr. to J. C. Tasker, Esq., Middleton Hall, Brentwood, who had Mrs. Hawkins, Empress of India, Honoria, William Darvill, Jaurezi, and white Cactus.

There were six competitors with six varieties, three blooms of each, and Mr. H. Glasscock was awarded the 1st prize, with Black Prince, Marchioness of Bute, Robert Maher, Edmund Weekley, Harry Freeman, and Mrs. Hawkins; 2nd, Mr. E. Mawley, Rosebank, Berkhamstead, with Mrs. Hawkins, Jaurezi, Asia, &c.

Pompon Dahlias.—Mr. J. T. West had the best six bunches, ten blooms of each, but unnamed; Mr. H. Glasscock was 2nd, his best varieties being E. F. Jungker, Lady Blanche, Grace, and The Nigger. There were eight exhibitors. Mr. S. Cooper was 1st with unnamed varieties, and Mr. C. Steed, 2nd, who had Ariel, Mdlle. Faconet, H. E. Searle, and Vivid.

Single Dahlias.—The best six varieties, ten blooms of each, came from Mr. T. W. Girdlestone, who had Annie Hughes, broadly edged with rosy-pink; Gwendoline, Yellow Perfection, Demon, rich dark; Lady Helen, yellow tipped with white, small; and Bessie Halton. 2nd, Mr. H. Glasscock. The *Gardeners' Magazine* Silver Medal was awarded to Mr. T. W. Girdlestone for his 1st prize stand in this class. Mr. E. Mawley was the only exhibitor of six varieties, six blooms of each, and took the 1st prize with W. C. Harvey, Amos Perry, Miss Henshaw, Sunningdale White, Miss Roberts, and Victoria.

Messrs. J. Cheal & Sons offered special prizes for twelve varieties, in bunches of six blooms, and Mr. T. W. Girdlestone was placed 1st with Ruth, Edie Clegg, Irene, The Mikado, Evelyn, Phyllis, white, with side-edgings of yellow; Gwendoline, Hector, Dorothea, Marian Hood, Sunningdale, white; Tetta, white, with side-margins of yellow and cerise, &c. 2nd, Mr. C. Osman, who had Mrs. Barker, Victoria, Paragon, Eynsford Gem, Faust, Ainata, Evening Star, and Eclipse.

OPEN CLASSES.

The best six blooms of any dark Dahlia were those of William Rawlings, shown by Mr. C. Turner; Messrs. Keynes & Co. coming 2nd, with the same; and Mr. A. Rawlings, 3rd, with George Rawlings.

The best six blooms of a light Dahlia, and out of seven competitors, six of them staged Mrs. Gladstone; Messrs. Saltmarsh & Son were 1st, Mr. H. Gibbs was 2nd, and Mr. M. V. Seale 3rd, with this charming variety.

The best six blooms of any yellow Dahlia were those of R. T. Rawlings, shown by Mr. A. Rawlings; and Messrs. Keynes & Co. were 2nd, with the same; Mr. S. Mortimer was 3rd, with James B. Service.

The best six blooms of any tipped Dahlia were all Mrs. Saunders (fancy), yellow, tipped with white; Messrs. Saltmarsh & Son were 1st, Mr. A. Rawlings 2nd, and Messrs. Keynes & Co. were 3rd.

Messrs. Saltmarsh & Son were also 1st with six blooms of any striped Dahlia, having Frank Pearce (fancy); Messrs. Keynes & Co. were 2nd, and Mr. G. Humphries 3rd, with Mr. J. Downie (fancy).

The best six blooms of any edged Dahlia came from Mr. J. T. West, who had J. T. West, yellow, heavily tipped with purple; Mr. Seale was 2nd, with Henry Walton; and Messrs. Saltmarsh & Son, 3rd, with J. T. West.

New Dahlias were somewhat largely produced, and Certificates of Merit were awarded to the following:—

Show varieties.—John Walker, a large pure white self, of fine quality, and very constant, as Mr. Walker, the raiser, has on all occasions shown twelve or six blooms of it at one time (J. Walker); William Powell, clear yellow self, a good sized flower, of fine shape and centre (J. T. West); Arthur Rawlings, a fine deep shaded crimson self, of the finest quality (J. T. West); John Rawlings, a clear lilac self, of good quality, and a desirable shade of colour (A. Rawlings). Mr. A. Rawlings also had George Gordon, bright crimson self; Arthur Ocock, orange red self; Mrs. McLintosh, buff yellow; and Mrs. Hurst. Mr. G. Harris had Canary Bird, a large deep yellow self, fine in colour; Mr. J. T. West, Ethel Keith, a light flower in the way of Mrs. W. Slack; and Emma Cornish, deep buff yellow.

Pompon varieties.—Certificates of Merit were awarded to Messrs. Keynes and Co. for Lillian, pale ground, heavily tipped with silvery lilac pink. To Mr. C. Turner for Mars, bright pale scarlet, of good shape; and for Lorna Doone, pale ground, heavily tipped with purple.

Decorative varieties.—Certificates of Merit were awarded to Harlequin, yellow, striped with crimson (Paul & Son); Rayon d'Or, creamy white, the side margins pale orange-scarlet, very distinct (C. Turner); Mrs. Keith, yellow ground, broadly margined with delicate silvery pink, and slight lines of sulphur, very distinct and attractive (J. T. West).

Cactus Varieties.—Certificates of Merit to the following: Beauty of Arundel, dark crimson, tipped with magenta (J. Cheal & Sons); Baron Schroder, rich bright crimson, tipped and flushed with purple-magenta, extra fine (Keynes & Co.); Kyriereth, very bright pale scarlet (Keynes & Co.); and St. Catherine, yellow, with cerise-brown on the edges of the basal petals (Keynes & Co.); Ernest Cannell, very pale orange-scarlet; and Robert Cannell, rosy-crimson, tipped with bright pale magenta—both from Messrs. H. Cannell & Sons, nurserymen, Swanley.

Mr. Geo. Phippen, nurseryman, Reading, staged a number of shields of Dahlias, set up with Ferns and other plants; and Mr. E. F. Such, nurseryman, Maidenhead, had a collection of bunches of hardy flowers, &c.

KINGSWOOD AND WEST GLOUCESTERSHIRE HORTICULTURAL.

August 25.—It is nineteen years since a flower show was held in this thickly-populated district. But during that period the plant-loving residents among the working classes have kept alive their capabilities to cultivate, for the cottagers' tent proved a perfect surprise; good-sized and admirably grown Cissus discolor, Caladiums, the variegated Pineapple, Adiantum Farleyense, Begonias of the Rex type, and Ferns of many kinds were staged that would have done credit to any establishment. Many of these working men have small glasshouses, in which they grow these plants—such plants, indeed, as are very rarely seen shown by cottagers; their cut flowers, hardy fruits and vegetables were very fine.

In the division open to all, Mr. J. Cypher, of Cheltenham, took the 1st prize, with twelve good flowering plants. In the amateurs' division for six Orchids, an exhibitor whose name could not be ascertained, had Cattleya Gaskelliana, C. Harrisonae, and C. Leopoldi; Cyrtopodium longifolium, Dendrobium Dearii, and Aërides Lobbii. Begonias generally well grown in the west of England, were good; and other flowering plants included Fuchsia, zonal Pelargoniums, Cockscombs, Japan Lilies, Gloxias, &c.

With eight fine-foliated plants, Mr. Cypher came to the fore with Croton Newmanii, C. Sunset, and

C. Thompsoni, *Latania borbonica*, *Cordylone indivisa*, *Kentia australis*, *K. Forsteriana*, &c. A fine lot of eight exotic Ferns came from an exhibitor whose name was not placed upon the plants until late in the day. It included examples of *Todea superba* and *T. pellucida*, *Adiantum concinnum latum*, *Davallia Mooreana*, &c.

Cut Flowers.—Messrs. Parker & Sons, St. Michael's Hill Nursery, Bristol, had the best twenty-four Roses, comprising some very fresh and bright flowers. Messrs. Heath & Son, Cheltenham, were 1st, with twenty-four show Dahlias—a fine lot of blooms. In the class for twelve fancy Dahlias, Mr. Hobbs was 1st. A good stand of single Dahlias was shown by Mr. A. A. Walters, Bath; and Cactus Dahlias by Mr. R. Pearce.

Other cut flowers comprised excellent German and French Asters, Phloxes, Gladioli, stove and greenhouse plants, hardy flowers, Hollyhocks, and many others. In some respects, the plants and cut flowers shown by amateurs were superior to those shown in the open classes.

Fruit was not numerous. The best collection of eight dishes came from Captain J. G. Bayley, who had Black Hamburg and Muscat of Alexandria Grapes, Grosse Mignonne Peaches, Pine-apple Nectarine, &c.; Mr. G. Garraway, Bath, was a good 2nd. Alicante and Black Hamburg were the best black, and Buckland Sweetwater and Foster's Seedling the best white Grapes, Dymond and Royal George the best Peaches, Pine-apple and Rivers' Orange the best Nectarines, while Pears were represented by Jargonelle, dessert Apples by Irish Peach and Red Astrachan, culinary Apples by Lord Suffield, Lord Derby, and Cox's Pomona, and other hardy fruits were in excellent condition.

A WORKING-MAN'S FLOWER-SHOW AT NEW CROSS.

ONE satisfactory feature about metropolitan gardening is the fact that flower shows, in which only the labouring-classes compete, are on the increase in London. Lately, what is being done in Bethnal Green was noticed, and this week we were invited to one held at New Cross, in the midst of a small city of streets of workmen's dwellings, that now cover what was formerly South London market gardens. In the midst are the engineering works of Messrs. Stone & Co., and the principals of this establishment built opposite their works what is known as the Welcome Institute, which includes a coffee-tavern, workmen's club, &c., and attached to which is a good-sized lecture-hall, available for concerts, &c. It is in this hall the flower show was held. It was commenced last year; but the second exhibition, which took place on August 28 and 29, was a decided advance in quality.

In addition to the flower show, there was an interesting and instructive exhibition of paintings, drawings, and models, by adults and by youths under twenty-one years of age. All members of the Welcome Institute are allowed to exhibit free, but non-members are charged an entrance fee of sixpence.

Tasteful collections of pot plants were staged, including *Ficus elastica*, *Lilium auratum* and *L. speciosum*, *Nicotiana affinis*, evidently a plant that blooms well in a close atmosphere; Begonias, foliated and flowering; *Coleus*, *Aspidistra lurida*, green and variegated; Fuchsias, *Petunias*, double and single; Stocks and Asters; *Lobelia*, Musk (Harrison's), zonal Pelargoniums; and in one or two of the groups were Tuberoses in bloom.

Considerable zest was given to the competition because a silver cup was offered to the exhibitor who made up the best portion of the show. This was won by F. Bannister, who took five 1st and six 2nd prizes in leading classes.

Very tasteful and effective groups of plants were furnished to help the display by Messrs. E. J. and F. J. Preston, two members of the firm of Messrs. Stone & Co.

Cut flowers included decorative Dahlias, Stocks, Sweet Peas, annual Chrysanthemums, Zinnias, Mignonette, &c. And in the vegetable classes were Cucumbers, Vegetable Marrows, French Beans, and Tomatos; all very creditable, considering the locality which produced them. A band performed each day during the afternoon and evening.

ROYAL OXFORDSHIRE HORTICULTURAL.

AUGUST 27.—This was the third of a series of four shows held annually by this Society in the quadrangle of Queen's College, the plants and flowers

being arranged under the covered colonnade; the vegetables on tables in the open. It is largely a cut flower, fruit, and vegetable exhibition, but the specimen plants which were staged were good. Mr. G. Jacob, nurseryman, Witney, had the best six stove and greenhouse plants—*Latania borbonica*, *Croton Weismanni*, and a fine piece of *Plumbago capensis alba*. The best specimen stove plant was a fine *Croton majesticus*, from Mr. G. Jacob; a *Fuchsia Charming*, from Mr. J. Mattock; the best ornamental-foliage plant, *Latania borbonica*, from G. H. Morrell, Esq.

In the amateur class, for a specimen hardy plant, Mr. W. F. Cross was 1st, with *Staturea incana*. Mr. J. Mattock had the best six Fuchsias, bush specimens.

Begonias were a good feature. In the open division, Mr. J. Johnson was 1st, with six well-grown and bloomed plants of excellent varieties.

Mr. Johnson took the 1st prizes with half-a-dozen of each of Pelargoniums, single and double (zonal's). In the class for six tricolors, Mr. Mattock was 1st, with very fine grandly-coloured varieties, Mrs. H. Cox, Empress of India, Dolly Varden, Lady Cullum, Mrs. Laing, and Mrs. Pollock.

Foliage plants included an excellent half-dozen Ferns from Mr. C. Jacob, Barton, who had *Adiantum tenerum*, A. Farleyense, A. cuneatum, A. grandiceps, A. Williamsii, and a piece of the Bird's-nest Fern. Hardy Ferns were shown by Messrs. Walker and Johnson.

Cut Flowers.—A class for twenty-four bouquets brought a good lot from Mr. J. Walker. Zonal Pelargoniums in three trusses of twelve varieties were superbly shown by Messrs. Mattock and Walker, but in the class for the same number of double varieties, the positions were reversed. Dahlias.—Mr. J. Walker was 1st, with twenty-four excellent blooms. Mr. Walker also had the best eighteen. Mr. Walker was 1st, with Pomponé varieties, and also with singles; and Mr. J. Mattock, with Cactus varieties. Roses were well shown by Mr. J. Mattock; Hollyhocks, in twelve spikes, by Mr. C. Hill, Rowley Nurseries; Asters, German and French, by Mr. J. Walker and the Rev. R. F. Dale, Bletchington Rectory; Zinnias, double, by Mr. J. Walker; Gladioli, by Mr. J. Johnson; and hardy perennials, by Mr. R. Price and Mr. T. Arnall.

A First-class Certificate of Merit was awarded to Mr. John Walker, for twelve blooms of his fine white self Dahlia, J. Walker.

Fruit.—The best Melon was Benham Beauty, followed by Golden Perfection. The best dish of Peaches was Alexander Noblesse, from Mr. C. T. Hawkins, Summertown; Colonel Miller of Shot-over House, 2nd, with Grosse Mignonne. The best dish of Nectarines was Hunt's Tawny, from Mr. G. H. Morrell; Colonel Miller, 2nd prize, with Elruge. The latter had the best dish of Apricots. The best Plums was Oullin's Gage, Reine Claude Violette taking the 2nd prize. The best culinary Plums were Goliath and Pond's Seedling. Green Gages shown in a class by themselves, were plentiful and good. The best dessert Pear was Jargonelle; the best dessert Apples were Red Astrachan, Gladstone, and Quarrenden. The best culinary Apples Domino, Lord Suffield, and Lady Henniker. Black and white Grapes were well shown; Black Hamburg was finely shown for the former; and White Muscat for the latter.

Vegetables.—The soil surrounding Oxford is evidently well-adapted for producing vegetables. A variety of Runner Beans, named Oxonian, raised at Oxford twenty years ago, long, handsome, and tender. The best collection of six dishes of vegetables came from Mr. J. Akers.

For some reason, it is not the practice at Oxford to place the name of the gardener who exhibits on the exhibition-card, though it is generally observed elsewhere. This is the reason why the gardeners' and growers' names do not appear in the foregoing report.

DALKEITH FLOWER SHOW.

THE Dalkeith Horticultural Society held its annual flower show in the Corn Exchange, Dalkeith, on the 5th inst. There was a falling off in the number of entries, as compared with the average of recent years; but the quality of the exhibits was superior. Keen competition took place in certain classes, particularly in hardy cut flowers, that requiring trusses of eighteen distinct species, for which four prizes were offered, bringing six competitors, the combined effect of the several stands being an imposing and attractive feature of the show. Mr.

Cairns, Dalkeith Gardens, was placed 1st, Mr. J. Paterson 2nd, and Mr. T. Pringle (Secretary) 3rd.

A very interesting section of the show is that which is devoted to industrial and art subjects, and on this occasion it exceeded, both in extent and general interest and excellence, any previous collection of the kind.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

THIS Association held its ordinary monthly meeting on the 1st inst., in 5, St. Andrew Square, Edinburgh, Mr. James Greive, Vice-President in the chair. Mr. Mark King, Bonnington, read a paper on "Poisonous Plants," in which he dealt chiefly with those that are indigenous to Britain. Dr. J. H. Wilson gave a lecture on the "Fertilisation of Flowers," which was illustrated by numerous diagrams and blackboard drawings. Some interesting original observations of the lecturer's, on the fertilisation of *Wachendorfia*, *Albuca*, and *Aspidistra*, were much appreciated for their ingenuity. Both the lecture and the preceding paper were accorded warm votes of thanks. Of exhibits, there were very few. Dr. Paterson, Bridge of Allan, sent a specimen of *Glycyrrhiza glabra* in flower, interesting on account of the rarity of its producing flowers in Scotland. Dr. Paterson stated in a note accompanying the specimen that the plant had been known to flower in Scotland only three or four times during the last sixty years. A very nice selection of cut blooms of seedling Carnations were exhibited by Messrs. Methven & Sons.

READING HORTICULTURAL.

SEPTEMBER 2.—The storm of wind which visited the town of Reading on the 1st inst., blew down the tent which covers the site for the exhibitions of this society in the Abbey Ruins, and a series of tents pitched in the Forbury Gardens had to be used; and it seemed as if the entire change in the arrangements pleased the many exhibitors. It was a capital show, and some charming groups for effect were arranged. The best came from Mr. Aitken, gr. to C. Meeking, Esq., Ritchings Park, Slough; Mr. Bright, gr. to P. Karslake, Esq., White Knights, Reading, was a good 2nd. Some small groups were also shown, the best coming from Mr. Bright, gr. to G. Palmer, Esq., Reading. Six excellent stove and greenhouse plants from Mr. Aitken were awarded the 1st prize in class 1; Mr. Mould, nurseryman, Pewsey, was 2nd. The best new or rare plant was *Gymnogramma Pearcei robusta* from Mr. Aitken. Mr. Bright's Fuchsias were very fine, and some good tuberous-rooted Begonias were staged.

Messrs. Aitken and Mould were also 1st and 2nd, with six ornamental foliage plants, the best specimen was a splendid *Croton Queen Victoria*, from Mr. Aitken. Palms, *Coleus*, and table plants were also good. Stove and greenhouse Ferns were a leading feature; Mr. Aitken, and Mr. Hollis, gr. to H. J. Simonds, Esq., Caversham, showing very fine specimens. In the amateurs' division, the exhibits were less numerous than usual.

Cut flowers comprised excellent Dahlias from Mr. Mortimer, Swiss Nursery, Farnham; and Mr. John Walker, Thame. Very pretty bunches of single varieties from Messrs. J. Cheal & Sons, nurserymen, Crawley; Roses from Messrs. Perkins & Sons, nurserymen, Coventry; and Mr. E. F. Such, Maidenhead, staged good Asters, Gladioli, stove and greenhouse and hardy flowers, Zinnias, &c.

Table decorations were, as usual, very pretty and bright, and though small prizes are offered, the competition by ladies is always very keen. Bridal and buttonhole bouquets, baskets of sweet-scented flowers, &c., were all pleasing features.

Fruit was largely and finely represented. Mr. Aitken took the 1st prize with a collection of eight dishes; Mr. Goodman, gr. to Miss Hammersley, Bourne End, was a close 2nd. Mr. Johnston, gr. to A. Gilliat, Esq., Stoke, had the best six dishes. Fine Black Hamburg Grapes were shown by Mr. Turton, The Gardens, Maiden Erleigh; and Mr. Ashman, gr. to J. R. King, Esq., Billingbear. Any other black were represented by fine Alicante, from Mr. Osman, Ottershaw Park; and Mr. D. Pound, jun., gr. to A. W. Sutton, Esq., Reading. Mr. Gilbert and Mr. Cane, of Ascot, were 1st and 2nd, with remarkably good white Muscats; any other white was represented by Buckland Sweetwater from Mr. Ashman, and Golden Queen from Mr. Doey. Peaches were represented by fine Bellegarde, Nectarines by Pine-apple, and Apricots by Hems-

considerably higher than any previously recorded in either of the three preceding months. Over 'England' they varied between 80° and 86°, over 'Scotland' between 74° and 81°, and over 'Ireland' between 77° and 78°. The lowest of the minima were registered at most stations, either on the 6th or 7th, and were rather low generally. In 'Scotland, N. and E.' they ranged from 31° to 35°, over 'Ireland' from 36° to 37°, and over 'England' from 39° in the 'Midland Counties,' to 45° in 'England, S.W.' In the 'Channel Islands' the lowest reading was 51°. The range of temperature during the week was very large; in the 'Midland Counties' and 'Scotland, E.' it amounted to 47°.

"The rainfall has been a little more than the mean in 'Ireland, S.,' but in all other parts of the Kingdom a deficit is shown.

"The bright sunshine has continued short of the mean in 'Scotland, N.,' but in all other districts it has been greatly in excess. The recorded percentage of the possible duration was as high as 89 in the 'Channel Islands,' 73 in 'England, E.,' and 65 both in the 'Midland Counties' and 'England, S.' Elsewhere it ranged from 60 in 'England, S.W.,' to 42 in 'Ireland, N.,' and to only 22 in 'Scotland, N.,"

NOTICES TO CORRESPONDENTS.

AMERICAN BLIGHT: *A Subscriber.* Dissolve 1 lb. of soft soap and 1 gallon of lime in water, to make a thick whitewash. Apply this with stiff brush to the branches now. Keep the ground free from weeds, and see that it is well drained.

BOILERS, PIPES: *A. F.* You may remove these, which come under the designation of trade appliances; but you should leave all in fair order, or the landlord may sue you for damages done to his property. Any glass and wood or iron buildings that may be fixed with bolts to brick or stone foundations becoming, failing an agreement to the contrary, the property of the landlord.

CABBAGE DISEASED: *W. & S.* See reply on p. 257, under "Namea of Plants."

CORRECTION. On page 311, line 43, in our report of Royal Horticultural Society, the Chrysanthemum named Mrs. Whiteley, should be "Miss Whiteley."

DISEASED IVY: *T. D.* Common on Ivy leaves (Phyllosticta hedericola). Pluck off and burn every diseased leaf as soon as the disease appears, and if this is done persistently, it will be stamped out. *M. C. C.*

DISEASED MELON: *S. S.* The roots of your Melons are infested with eel-worms. Turn all the soil out, and burn it along with the plants, and start with fresh material.

FILBERTS: *T. M.* A fairly rich, friable loam of good depth, resting on a rocky stratum, or on gravel. The drainage should be good, and the position open. There is a comprehensive work on the subject in German, entitled, *Die Haselnuss*, by F. Goeschke (Paul Parey, Berlin); and a pamphlet of 230 pages, by Mr. D. T. Fish (Upcott Gill, *The Bazaar Office*, 170, Strand, London, W.C.)

FRUITS FOR EXHIBITION: *R. W. N. C.* Kitchen Apples—Lord Grosvenor, Worcester Pearmain, Cellini, Cox's Pomona, Warner's King, Ecklinville, Peasgood's Nonsuch, Dumelow's Seedling, Golden Spire, Bramley's Seedling, Winter Hawthornden, Emperor Alexander. Dessert Apples—Blenheim Orange, Ribston Pippin, Beauty of Bath, Irish Peach, Devonshire Quarrenden, Cox's Orange Pippin, Melon Apple, Syke House Russet, Red Astrachan, Court of Wick, Annie Elizabeth, Brad-dick's Nonpareil. Gooseberries, 6 best late kinds—Perfection (Gregory's), Red Warrington, Iron-monger, Whitesmith, Pitmaston Green Gage, Red Champagne.

MAGNOLIAS: *J. L.* Magnolias may be cut back into the old wood at this season, taking care to paint over with dark-coloured oil-paint all the large cut surfaces. The next best time is just before growth commences.

NAMES OF FRUITS: *H. T.* 1, Emperor Alexander; 2, Cox's Orange Pippin; 3, Wheeler's Russet; 4, Bramley's Seedling; 5, Tower of Glamis; Plum Jefferson: it is attacked by mussel scale (*Aspidiotus conchiformis*); wash the trees with soft-soap suds and lime water, especially in spring; if on walls, uncoil the trees and paint the wall with cement "slip."—*Led.* 1, Louise Bonne of

Jeraey; 2, Emile d'Heyst.—*M. F.* 1, Probably a seedling; 2, Ribston Pippin; 3, Royal Codlin; 4, Cannot identify.—*J. H.* Apple not known—worthless.—*R. S. G.* Pears, 2, Fondante d'Autonne; 3, Hessel; 4, not known; 5, Vicar of Winkfield; 6, Catshead Apple; Peach Belle-garde; Plum Victoria.—*J. R. M.* 1, Washington; 2, Black Diamond; 3, Kirke's.—*Q. R.* Apple: Kerry Pippin. Plums: 1, Eugène Fürst; 2, Mitchelson's; 3, probably Red Magnum Bonum (fruit smashed); 4, Victoria; 5, Diamond.—*E. G.* Probably, Mr. Gladstone.

NAMES OF PLANTS: *Ivy.* Gypsophila paniculata, hardy herbaceous perennial, from South-Eastern Europe; to be obtained from most nurserymen.—*W. J.* Chenopodium urticum (Upright Goose-foot).—*W. L.* 1, Juniperus chinensis; 2, Thuopsis borealis; 3 and 4, varieties of Abies Douglasi; 5, Retinospora pisifera; 6, Rhus cotinus—wig plant.—*G. N.* 1, Salix caprea (we were in error before); 3, probably S. phyllifolia. We cannot name the others from the materials sent.—*W. H. M.* Actaea spicata rubra.—*H. H.* 3, Cerasus lusitanica azorica; 4, Coreopsis lanceolata; Roses next week.—*L. C. H.* Helianthus rigidus.—*E. R.* Colutea arboreacens, Tropaeolum speciosum.—*J. H.* 1, Polygonum cuspidatum; 2, Lycium barbarum; 3, Casuarina sp.

PLATYCIERIUM GRANDE, RAISING FROM SPORES: *J. M.* The plant being a native of the Malayan Archipelago, its spores, when sown in scalded peat and silver-sand, should be placed in a rather close and warm propagating-case, or under a bell-glass in a Pine-pit. The fertile fronds are stipitate, rising from the sinus of the sterile ones. A good deal of observation is needed, so as to obtain the spores when they are in a mature state.

PLUMS: *G. S.* Your seedling Plums are inferior to many others in cultivation.

ROSES FROM SEED: *G. P.* We have no correspondent at Lagos, but we do not think it likely Roses would do well in such a climate. As no one can tell till he tries, let trial be made and results recorded in *Gardeners' Chronicle*.

SCALE ON BLACK CURRANTS: *H. H. D.* The branches are infested with mussel scale (Mylaspis pomorum). Mix soft-soap suds and tobacco water and a little sulphur powder, rub this in thoroughly with a stiff brush. Repeat two or three times in winter.

SUNFLOWERS: *W. S.* You should either send some flowers and leaves of your new crosses to us for our inspection, or show them at the next meeting of the Royal Horticultural Society.

TWIN DAHLIA: *X.* Two flower-heads were pressed together at a very early stage, and became united in consequence.

CATALOGUES RECEIVED.

JNO. JEFFRIES & SONS, Cirencester—Dutch Bulbs, and other flower-roots.

C. SHARPE & Co., Sleaford, Lincolnshire—Spring Flower Roots for autumn planting.

DORRIS & Co., Rothesay, N.B.—Dutch Bulbs, Roses, Pansies, Violas, Fruit Trees, &c.,

R. CLEAVER, 47, Bore Street, Lichfield—Select Bulbs and Roots.

JOHN T. GILBERT, Anemone Nurseries, Dyke, Bourne, Lincolnshire—Bulbs and Tubers.

JOHN SHARPE & SON, Barduey, Lincolnshire—Selected Seed Wheats.

JOHN JEFFRIES & SON, Cirencester—Select Bulbs.

DANIEL BROS., Norwich—Dutch Flower Roots, Roses, &c.

SAMSON & Co., Portland Street, Kilmarnock—Trees, Shrubs, Roses, &c.

BARR & SON, Covent Garden, London, W.C.—Daffodils, also Dutch and Cape Bulbs.

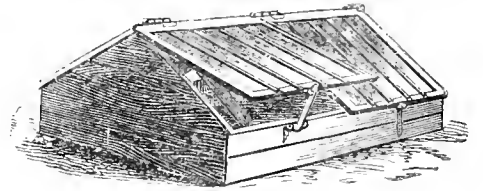
W. TAIT & Co., Capel Street, Dublin—Bulbous Flower Roots.

COMMUNICATIONS RECEIVED.—Dr. Kianzin, Berlin.—*W. S.*—*H. J. & Sons*—*J. C. & Sons*—*W. P. & Son*—*E. J. L.*—*J. W.*—*J. v. V.*, Brussels.—*V. C.*—*P. v. M.*, M-lourne.—*A. B. McD.* (many thanks, but we have no room).—*F. R. L.* (shortly).—*E. H. K.*, Haarlem.—*M. C.*—*T. H.*—*J. R. D.*—*C. P. & Co.*—*A. Woolgate* (kindly send the photograph).—*J. Pounsett*.—*C. W.*—*F. G.*—*T. W.*—*J. R.*—*R. A. R.*—*E. C.*—*W. J. G.*—*W. G.*—*J. R. J.*—*J. W.*—*R. D.*—Northern Newspaper Syndicate.—*P. L. S.*—*J. Lowrie*—*W. N.*—*W. E. Melia*.—*F. A. Ham*.—*J. Macdonald*.—*T. G.*—*W. Horne*.—*E. N.*—*A. H. W.*—*J. B. S.*, Bournemouth.

PHOTOGRAPHS RECEIVED, with thanks.—*Lalia purpurata*, with twenty-two flowers, from J. W., Basingstoke.—Dinner-table decoration, *G. N.*—*J. E. P.*, portrait.

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12 feet " 4 feet "	PRICES,	4	0	0
6 feet " 5 feet "				
12 feet " 5 feet "	CARRIAGE	4	15	0
12 feet " 6 feet "				
	PAID.	5	12	6

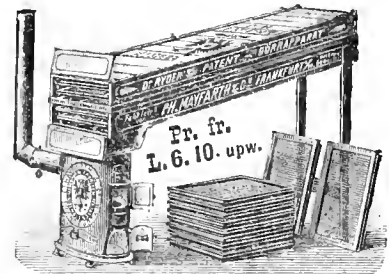
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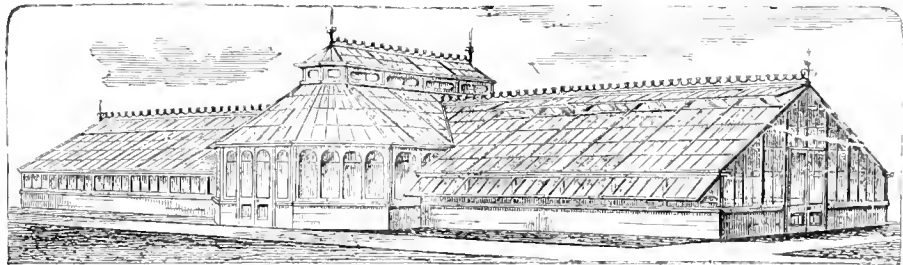
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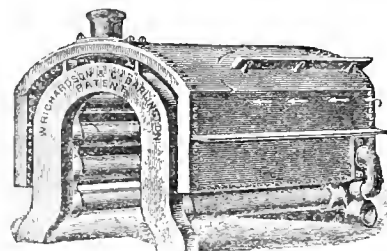
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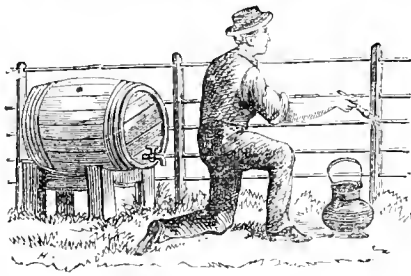
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Extract from letter from R. White, Esq., Ardarrach, Gareloch Head, Dumbartonshire.

July 20, 1891.
I consider the Syringe bought from you one of the cheapest and best I ever had. It is especially good for spraying Odontoglossums.

KILLMRIGHT.

Extract from letter from Mr. J. Young, Head Gardener to the Zoological Society, Regent's Park, London.

July 22, 1891.
It is the best Insecticide I have ever used, and the cheapest.

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Extract from Letter from Mr. T. Wise, Gardener to F. TAYLOR, Esq., Ash Lawn, Heaton, Bolton.

September 20, 1890.
Your Patent Manure has given us every satisfaction.

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"PERFECT" WEED KILLER.



Unrivalled for Destroying Weeds on Garden Walks, Carriage Drives, &c.

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EPPS'S selected PEAT,

For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. **SPECIAL ORCHID PEAT**, in sack only. Rich fibrous LOAM, superior LEAF-MOULD, Concre, Crystal, and Fine SILVER SAND, CHACOAL, C.N. FIBRE REFUSE, fresh SPHAGNUM, Patent MANURES, FERTILISERS, INSECTICIDES, and all other Garden Requisites. **Peat Moss Litter.**
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THE GARDENERS' CHRONICLE

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All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON ST., STRAND, W.C.

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All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d.; 3 months, 3s. 9d. Foreign (excepting India and China), including Postage, 17s. 6d. for 12 months; India and China, 19s. 6d. Post-office Orders to be made payable at the Post-Office, 42, Drury Lane, W.C., to A. G. MARTIN.

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AND

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GARDENING APPOINTMENTS.

Mr. A. HATWELL, for the last three and a half years Foreman to Mr. SMITH, Wootton Gardens, Aylesbury, Bucks, as Head Gardener to Capt. J. R. DYMOND, Brooklands, Charminster, Dorchester.

Mr. C. WOOD, for the past four years Foreman at Pendell Court, Bletchingly, as Head Gardener to the Rt. Hon. Lord HYLTON, Merstham House, Merstham, Surrey.

Mr. T. W. BERRIDGE, formerly Head Gardener to Major FINLAY, Manor House, Little Brickhill, Bletchley, as Head Gardener to J. F. STARKEY, Esq., Bodicote House, Banbury, Oxfordshire.

Mr. G. H. HECKE, Assistant in Hyde Park and Kensington Gardens, has been appointed by the Californian Land and Commercial Company, Manager of their Bakersfield Estate, Kern County, California.

Mr. D. TAPP, late Gardener to Colonel STURT, Llandihangel Court, Abergavenny, as Head Gardener and Manager of Farm to F. S. COLLINS, Esq., Lincoln Hill, Ross, Herefordshire.

Mr. CHARLES RITCHINGS, for the last four years Gardener to W. LINDSAY, Esq., Brandries, Beddington, has been appointed Gardener to Dr. FRANKLAND, F.R.S., F.R.H.S., The Yews, Reigate Hill, Surrey.

Mr. A. WILLIS, late Foreman at Davenham Gardens, Malvern, has been appointed Head Gardener to Sir SAMUEL BAKER, Bart., Sandford Orleigh, Newton Abbot, Devonshire.

Mr. HARRY MUNDEY, previously Head Gardener to the late H. W. TREGO, Esq., The Brokes, Reigate, is appointed Head Gardener to S. T. SOUTHGATE, Esq., Hazlewood, Upper Norwood.

Mr. W. FULLER, formerly with C. F. DAVIES, Esq., Earlsfield, Wandsworth Common, S.W., has been appointed Head Gardener to Geo. H. COX, Esq., The Grange, East Barnet, Herts.

Mr. GEORGE REASON has been appointed Head Gardener to Viscount BOYNE, Brancepeth Castle, Durham.

Mr. A. ABRAHAMS, now Gardener at Hazelholt Park, Bishop's Waltham, to the charge of Ughbrook Park Gardens, the residence of Lord CLIFFORD, Chudleigh, Devon.

Mr. G. FULFORD, formerly Foreman at Haverling Park Gardens, as Gardener to Earl NELSON, Trafalgar Park, Salisbury.

Mr. H. CRAWLEY, for the last two years Foreman at Sandstead Court Gardens, as Head Gardener to Captain PEACOCKE, Efford Park, Lymington, Hants.

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PARTNERSHIP.—ADVERTISER wishes to invest £150 in a going concern. Florist and Jobbing. Middle-aged practical man, well up in general routine.—KENTIA, Booking Office, Sydenham Station, S.E.

Borough of Barnsley.

THE CORPORATION REQUIRE a GARDENER to take charge of the Locke Park. Wages, 30s. per week, with house rent free, and coal and gas. One with a knowledge of Forestry and Landscape Gardening will be preferred. Written applications, with testimonials, must be sent to me on or before Thursday, the 21st inst. Canvassing the members of the council is prohibited.

By Order, HENRY HORSFIELD, Town Clerk.
 September 8, 1891.

WANTED, a HEAD-WORKING GARDENER; aged about 35, married; with thorough knowledge of Flowers, Fruit, and Vegetables. Unexceptionable reference from last place required. Wages, 25s. a week, and Cottage.—Address, L. D. C., Messrs. Deacons, Leadenhall Street, E.C.

WANTED, IMMEDIATELY, a HEAD GARDENER; hardworking, honest, really efficient, and enterprising. Large Grounds; much Glass; several men; also Schoolboys working for Colomes.—F. ADAMS, Wellingore Hall, near Lincoln.

WANTED, a really good SINGLE-HANDED GARDENER, in the Suburbs; accustomed to all branches.—Apply, by letter only, Mr. R. WILLEY, 65, Ludgate Hill, E.C.

WANTED, a SECOND GARDENER, where two are kept. Must be thoroughly trustworthy, able, willing, and industrious. To work out-of-doors as well as in the Houses. Wages 2 s per week.—Apply by letter, stating age, to MR. MOE, Feltham, Wimbledon Common.

WANTED, a GARDENER and WIFE.—Without family. Assistant kept. Orchard, Grass, Vegetables, Hardy Borders, Melons, Greenhouse, and Poultry. Wife as Housekeeper, Cook, and House-servant at end of week. Rooms, fuel, and 23s. per week.—Apply, in own handwriting, before Oct. 1, to J. SPARKES, Exhurst, Guildford.

WANTED, GARDENER and WIFE, at Birkdale, Southport. Gardener must be a thoroughly good all-round Man, respectable, and able to handle a horse. Wife good laundress, and without family. Cottage, coal, and gas provided. Good permanent home for suitable couple. Address, with fullest particulars, and wages expected, to W., 76, C. Birchall, Advertisement Contractor, Liverpool.

WANTED, a competent experienced young MAN, about 30, to take charge of a collection of Orchids, Vines, and Kitchen Garden. Two men to assist. Wages, 35s. a week.—Address, S. H. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a good practical man, as FOREMAN, in the Houses, having had good experience in the Culture of Fruits and Plants, and well up in Conservatory Decoration. Must have first-class references as to character and ability. Wages, 19s. per week, rooms, and Vegetables.—K. BROWN, Chapel Manor, Horsmonden, Kent.

WANTED, as NURSERY FOREMAN.—A thoroughly practical MAN, as out-of-door Foreman.—Apply, stating age and salary required, with testimonials, to JOHN PERKINS & SON, Billing Rd. Nurseries, Northampton.

WANTED, a steady, trustworthy, married MAN, as Kitchen Garden Foreman, with good character. Must have filled a similar situation. Wages, 19s. per week, with cottage.—E. BECKETT, The Gardens, Aldenham House, Elstree, Herts.

WANTED, a Young MAN, to Grow and Propagate Dahlias and Bud Roses. One who has had experience in Growing for Exhibition preferred.—Apply, stating wages required and references, to POPE AND SONS, King's Norton, Birmingham.

WANTED, a young MAN, with a knowledge of Chrysanthemum and Tomato Growing for Market.—State references, and wages expected, to MANAGER, Llys-onen Gardens, near St. Clears.

WANTED, a young MAN, about 21 or 22, as Under Gardener, at a place where five are kept.—Must have good knowledge of the management of Houses and all kinds of Garden work. Good character required.—M. M., The Gardens, Cackley Clay Hall, Swaffham, Norfolk.

WANTED, TWO Young MEN, one who thoroughly understands Kitchen Garden, also one for Kitchen Garden and Pleasure Grounds. Excellent characters.—Apply to Mr. HUTT, The Gardens, Bemben Palace, Hants.

WANTED, AT ONCE, a MAN who thoroughly understands Jobbing. Must be energetic, and well recommended.—State wages to W. CHAMBERS, Westlake Nurseries, Isleworth.

WANTED, married MAN, for the Garden; one used to the Scythe and Lawn Mower, and the usual routine of work outdoors. Must be energetic, and not afraid of work, and of good character. Good Cottage with Garden found. Wages, 17s. per week, with Milk.—Apply to A. ALDERMAN, The Gardens, Ellingham Hill House, Dorking.

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WANTED, a young MAN, with a knowledge of the Seed Trade to act as Second Warehouseman.—Write full particulars to WARD AND CO., Bristol.

WANTED, a TRAVELLER, for the wholesale Nursery Trade. Apply, stating experience, &c., to THOS. CRIPPS AND SON, The Tunbridge Wells Nurseries, Kent.

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WANTED, a CLERK, BOOK-KEEPER, and SALESMAN, and if with some knowledge of the Seed, Bulb, and Cut-flower Trade, so much the better. A young man in the above capacity wanted for the next three or six months, shortly after Michaelmas, in a Tree, Shrub, and General Nursery, close to the South Coast. Wages, 30s. per week.—Apply, with full particulars and references, which must be first-class, to J. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED.—A young MAN specially for Wreath and other Cut Flower work, to fill up spare time in the Greenhouses; also a SECOND MAN for the Houses, with a good knowledge of Growing Plants and Cut Flowers for Market.—State age, wages, and references, to—W. M. TROUGHTON, Nurseryman, Preston.

WANTED, a very respectable young LADY, of good character, with some experience in General Florist Work, to first-class Floral Establishment. Board and lodging in the house.—Apply, by letter, stating age and full particulars, to A. MULLER SOHN, Frankfurt on Maine, Germany.

WANTED, a young LADY.—Must be well up in Wreaths, Bouquets, Sprays, &c., and willing to Serve. Must have good references.—Apply, stating salary required, to T. CHALLIS, Kent House Nursery, Beckenham, Kent.

WANTED, a good SALESWOMAN, for a first-class Florist's Shop. Good maker-up of Poses, Sprays, Button-holes, &c. Good appearance and character indispensable.—TURNER BROS., Florists, Parker Street, Liverpool.

WANT PLACES.

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Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester (Limited), are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address—"DICKSONS, CHESTER."

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

SANDERS, St. Albans, can thoroughly RECOMMEND several first-class HEAD GARDENERS.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, Liverpool, are in a position to recommend a first-rate man as HEAD GARDENER, or GARDENER and BAILIFF; also a thoroughly competent man as HEAD GARDENER, who has a good knowledge of Orchids; unexceptional references in each case.

Head Gardeners.

JOHN LAING AND SONS can at present recommend with every confidence several energetic and practical Men of tested ability and first-rate character. Ladies and Gentlemen in want of GARDENERS and BAILIFFS, and HEAD GARDENERS for first-rate Establishments or Single-handed Situations, can be suited and have full particulars by applying at Stanstead Park Nurseries, Forest Hill, London, S.E.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

GARDENER (HEAD), and ORCHID GROWER.—Age 31; seventeen years' experience in Orchids, Stove and Greenhouse Plants, early and late Forcing, hardy Fruit, Flower, and Kitchen Gardens.—WILLIAM LAKER, Quora Lodge, Loughborough, Leicestershire.

GARDENER (HEAD).—A. MILNE, Gardener to the Right Hon. Earl Ashburnham, Battle, Sussex, can with confidence recommend his Foreman as an energetic workman and good all-round man.

GARDENER (HEAD).—Married; thoroughly understands Glass, and good all round. Excellent references.—C. MARTIN, Vale Nursery, Tiptree, Kelvedon, Essex.

GARDENER (HEAD), where three or more are kept.—Mr. HERSEY, gardener to the Right Hon. Sir H. Selwin Ebbotson, Bart., M.P., Down Hall, Harlow, highly recommends his Foreman, H. Baker, to any lady or gentleman requiring a good practical man, versed in all branches of his profession. Has ten and a half years' good references from first-class places, including two and a half from present place. Is well recommended by the above gentleman. Abstainer.

GARDENER (HEAD).—J. W. SILVER can most confidently recommend a thoroughly good Man as above. An excellent Plantman, Fruit Grower, Flower and Kitchen Gardener. Trustworthy and energetic, and highly recommended.—Streatham and Norbury Nurseries, S.W.; and 3, Marlborough Mansions, Victoria Street, Westminster, S.W.

GARDENER (HEAD); married no children. —To Noblemen, Gentlemen, and Ladies, who market their surplus produce, H. Eldridge is open to engage with anyone requiring the services of a good all round Gardener. Used to sell surplus produce. Twelve years in last place. Any part of England.—3, Springfield Terrace, The Homies, Rexhill, Hastings.

GARDENER (HEAD).—JAMES CHILD, for five years Head Gardener to Bailey Hwkins, Esq., Homdswood, St. Albans, and fourteen years at Gorboun Hall, Ewell, wishes to engage with any Gentleman requiring a good all-round Gardener.—2, Alexandra Road, Epsom.

GARDENER (HEAD).—Single; trustworthy, intelligent, and possessed of an excellent knowledge of his business in all departments. Abstainer. High testimonials. Home Counties preferred.—J. H., 60, Gordon Place, Kensington.

GARDENER (HEAD), or GARDENER and FARM BAILIFF; age 26; thinking of marrying as soon as suited.—Advertiser would be glad to hear from any Lady or Gentleman requiring a practical man as above. Fourteen years' practical experience in all branches of Gardening, under Glass and outside. Could manage a Home Farm if required. Abstainer.—G. H., Messrs. Sutton & Sons, Seed Merchants, Reading.

GARDENER (HEAD), or GARDENER and BAILIFF.—A GENTLEMAN highly recommends his Head Gardener, a thorough practical man in all branches of gardening, also Land and Stock. Life experience in leading gardens. Ten years as Head. Highest references.—K., The Manor House, Ellingham, Leatherhead.

GARDENER (HEAD WORKING).—Age 38, married, no children. Wife could take dairy or poultry, if required. Can be well recommended. State terms, &c., to GARDENER, P. MacArthur, London Nursery, 4, Manilla Vale.

GARDENER (HEAD WORKING); age 31.—Where three or four are kept. Fifteen years' good experience. Five years as Head. Good references.—C. BRANT, Ruffett Cottage, Chipstead, Surrey.

GARDENER (HEAD WORKING).—Age 42, married; thoroughly experienced in all branches, including Orchids. First-class testimonials.—J. STEWART, Potton, Beds.

GARDENER (HEAD WORKING).—Thoroughly competent and trustworthy. Thorough knowledge of Culture of Fruit, Flowers, and Vegetables. Forcing, &c. Well recommended for the above capacity by a Gentleman (late employer) well known in London.—GARDENER, 27, St. Angelo's Road, Camden Square, N.W.

GARDENER (HEAD).—A GENTLEMAN going abroad, can with confidence recommend his Head Gardener (James Cook) who has been with him twelve years, as a thorough practical man in all departments, including Orchids, Stove Plants, Early and Late Forcing. Thoroughly trustworthy. Age 35, married, with family.—S. EZEKIEL, Esq., Camden Square, Sutton, Surrey.

GARDENER (HEAD WORKING).—Age 36, married; twenty years' experience in all kinds of Fruit, Flowers, and Vegetables, Early and Late Forcing. Wife as Laundress, if required. Good character, and well recommended.—B. S., Croxley Grove, Rickmansworth.

GARDENER (HEAD WORKING).—Age 93, married; Abstainer. A thoroughly good practical and competent Gardener. Twenty three years' experience in growing Grapes, Peaches, Figs, Melons, Cucumbers, Tomatoes, Mushrooms, Stove and Greenhouse Plants, Orchids, Flower and Kitchen Gardening. Early and Late Forcing. Highest references.—GARDENER, Bignor Park, Pulborough, Sussex.

GARDENER (HEAD WORKING), where one or two others are kept.—Age 29, married. Thirteen years' experience in Vines, Peaches, Melons, Stove and Greenhouse Plants, Flower and Kitchen Gardens. Good character.—G., Mr. Burt, Albert Road, Cosham, Hants.

GARDENER (HEAD WORKING).—Age 26; thirteen years' experience in Vines, Stove and Greenhouse Plants, Flower and Kitchen Garden. Good character. Abstainer.—C. HOWELL, Westhill House, Gravesend.

GARDENER (HEAD WORKING), where three or more are kept.—Age 30, single; thoroughly experienced in all branches. First-class references.—**GARDENER**, 5, Saultford Street, Cheltenham.

GARDENER (HEAD WORKING).—Married, no family; excellent character and experience.—**THE RECTOR**, Wicken, Newport, Essex.

GARDENER (HEAD WORKING).—Age 31; widower; three children. Thorough practical experience in all branches. Disengaged, October 16.—**W. CLAYTON**, Head Gardener, Maesgwynne, Whitland, S. Wales.

GARDENER (HEAD WORKING).—Married. Good Provincial Nursery. Experienced Fruit and Plant Grower. Eleven years' experience; well recommended.—**W. PHILLIPS**, Greyhound Cottage, Brockton, Lydbury North, Shropshire.

GARDENER (HEAD WORKING).—Age 32, married, two children; thorough practical experience in all branches; seven years with present employer, eight with previous. Excellent character, with references. Leaving through establishment being broken up.—**W. DOUST**, Lamberhurst, Kent.

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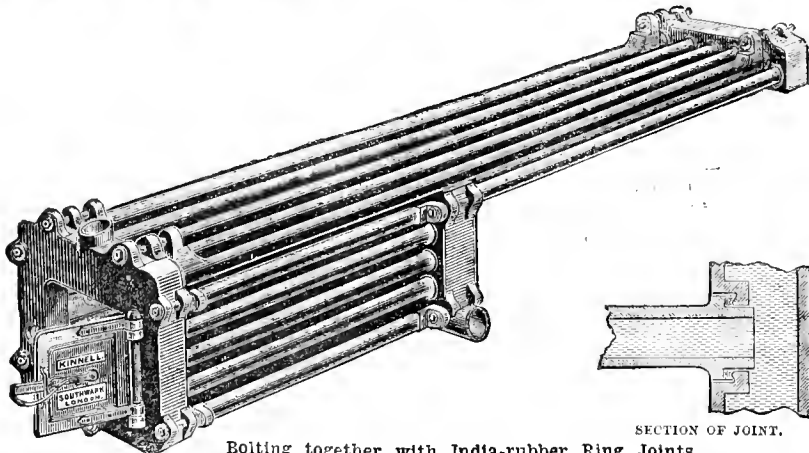
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Dutch Bulbs.—Great Unreserved Sales.

EVERY MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C. FIVE DAYS WEEKLY as above, at half-past 11 o'clock each day. LARGE CONSIGNMENTS of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from HOLLAND. Lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Hammersmith W.

DISSOLUTION OF PARTNERSHIP.

ABSOLUTE SALE, without reserve, LEASE, STOCK, and UTENSILS IN TRADE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Peacock Nursery, Great Church Lane, Hammersmith, on MONDAY, September 28, at 12 o'clock (unless previously sold by private contract), the BENEFICIAL INTEREST in the LEASE of the NURSERY, with 17 GREENHOUSES, and several PITS.

Immediately following the Sale of the Lease, the whole of the Stock will be offered in suitable lots, comprising 1000 PALMS, 1000 CHRYSANTHEMUMS, 150 AZALEAS, 500 BEGONIAS, 100 LILIES of sorts, 3000 FERNS, 10,000 GLADIOLUS The Bride, ICELAND POPPIES, several 2-light FRAMES, POTS, WATER-CANS, MUSHROOM BEDS, &c.

May be viewed any day prior to the Sale. Catalogues may had on the Premises, of Messrs. MEAKIN AND SON, 6, Martins Lane, Cannon Street, E.C., and of the Auctioneers, 67 and 68, Cheapside, E.C.

Friday Next.

2000 OLD LABIATA.

THE TRUE OLD AUTUMN-FLOWERING CATTLEYA LABIATA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 2, at half-past 12 o'clock, a magnificent importation of the TRUE OLD AUTUMN FLOWERING CATTLEYA LABIATA.

The whole importation is offered, and the plants are in magnificent order and condition; from 1 to 6 flower-seats can be seen on the old spikes, many of which are of enormous size and thickness.

ALL THE PLANTS ARE GUARANTEED TRUE.

The genus Cattleya was founded upon the species we now offer. Dr. Lindley first described it from Swainson's plant, introduced in the year 1835, and named it in honour of W. Cattley, Esq., of Barnet. This plant was now re-discovered and re-introduced, is absolutely the CATTLEYA LABIATA AUTUMNALIS VERA from Swainson's original hunting-ground.

CATTLEYA LABIATA, TRUE,

the queen of Cattleyas, and the finest of the genus.

Cattleya labiata was discovered by W. Swainson in 1817, and since that year several small consignments have arrived in Europe; but in about 1830, Mr. Horsfall, of Liverpool, received some through a captain in one of his ships. Again, in about 1855, some plants came to Europe, and in 1882, Mr. Bartlett, of the Zoological Gardens, London, received a small consignment, and he disposed of it to Mr. K. S. Williams, of Upper Holloway; and two years ago a gentleman in Paris received a small importation. Now, however, we have succeeded in securing the enormous quantity above offered, and the whole in grand health; and such a consignment as offered to-day to the public could never have been thought of years ago, and our collectors had to employ more than a hundred men in order to get the plants together, fearing the rainy and growing season would set in. For trade growers, an opportunity like the present to purchase this Cattleya is specially opportune, as all the plants are in splendid order. The old labiata is a free-growing Cattleya, and makes rapid growth, and is unequalled for cut-flower purposes and grandeur of variety as a selling plant.

On view morning of Sale, and Catalogues had.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, October 2, the following valuable Orchids:—

- VANDA SANDERIANA, splendid plant, in bud.
SOBRALIA LEUCOXANTHA, splendid plant.
CYPRIPEDIUM NITIDISSIMUM, finer than GRANDE. First-class Certificate. Splendid specimen.
LELIA AKOUIDIANA, a grand hybrid, which gained the Gold Medal of the Royal Horticultural Society.
ODONTOGLOSSUM HORSMANNIANUM, Reich, and Rolfe, very fine plant, and unique.
ODONTOGLOSSUM HYBRIDUM LONDINENSE, shown at Last Temple Show.
VANDA ROBERTSIANA, new. Will shortly be described.
DENDROBIUM CASSOPHE, fine hybrid between D. nobile album and japonicum.
Also many popular and useful Brazilian Orchids.
On view morning of Sale, and Catalogues had.

Seedling Cypripediums.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, October 2— Nearly 100 SEEDLING CYPRIPEDIUMS, raised by the late Mr. F. HORS, of Dresden. The plants are from 1 to 3 years old, and in fine health.

On view morning of Sale, and Catalogues had.

Derby.

TWO DAYS' UNRESERVED CLEARANCE SALE of STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Mile Ash Nurseries, Derby, about a mile from the Midland Railway Station, on TUESDAY and WEDNESDAY, September 29 and 30, at 12 o'clock precisely each day, Without Reserve, the whole of the STOVE and GREENHOUSE PLANTS, comprising 2000 Arabias, large specimen Roses, 250 large Camellias and Azaleas, suitable for cut flower; 400 Camellias, 2 to 4 feet; specimen Orchids, suitable for cut flower; specimen Palms and Greenhouse Rhododendrons, Lapagerias, 200 Palms, of sorts; 1500 choice Ivies, 4000 Maidenhair Ferns, 6000 Narcissus, and quantities of other Stock. Also brown HORSE, two Spring Market VANS, two Spring DRAYS, GARDEN ROLLER, LAWN MOWERS, and a quantity of GLASS and useful Sundries.

May be viewed three days prior to the Sale. Catalogues had of Mr. COLLING, on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The Sale of the Outdoor NURSERY STOCK will take place on the Premises in October next.

Bagshot.

HIGHLY IMPORTANT THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, which has been carefully prepared for removal, and specially selected for this Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, close to Bagshot Station, on WEDNESDAY, September 30, and two following days, at 12 o'clock each day, without reserve, several acres of NURSERY STOCK, grown to the greatest perfection, and exceedingly well-rooted, comprising a variety of Conifers, splendid specimens, 4 to 7 ft., particularly adapted for effective planting; well-coloured Golden Retinosporas; very fine specimen Gold and Silver Variegated Hollies, 4 to 6 ft.; finely-grown examples of Waterer's Holly; Standards and Pyramids one single specimens; 1000 Green Hollies, 3 to 5 ft.; very fine English Yews, 2 1/2 to 3 ft.; 200 named Rhododendrons, 2 to 2 1/2 ft., bushy plants of the best and newest kinds; Ponticum Rhododendrons in quantity; 3000 Spruce Firs, 2 1/2 to 4 ft., and a quantity of larger plants adapted for Christmas Trees; 5000 Standard Ornamental Trees, 8 to 12 ft.; Purple Beech and Limes, 10 to 12 ft.; thousands of Flowering Shrubs; and other Stock.

Purchasers will be allowed until December 31, 1891, for the removal of their lots.

May now be viewed. Catalogues can be obtained on the Premises, or on application to the Auctioneers, 67 and 68, Cheapside, E.C.

The Chilwell Nurseries, Chilwell, Notts.

Three-quarters of a mile from Beeston Railway Station, Midland Railway.

IMPORTANT SALE of EVERGREENS, CONIFERAE, &c., growing upon two branch nurseries which are required for building purposes by order of Messrs. J. R. Pear-son & Sons.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, above on THURSDAY, October 1st, at 1 o'clock precisely, 1,000 specimen GOLDEN YEWs, a fine collection of Green and Variegated HOLLIES, 800 Bushy AUCUBAS, specimen and half-specimen RHODODENDRONS, of the finest named varieties, thousands of SMALL SHRUBS for potting or growing on, 300 YUCCA FILAMENTA VARIEGATA, the largest number of this scarce plant ever offered, 4,000 LAURELS of sorts, 1,200 CUPRESSUS, including 400 C. ARGENTEA, perfect specimen Standard and Dwarf ROSES, Standard THORNs and other Stock.

This Sale is especially worthy of attention owing to the high-class character of the Stock, all of which has been recently transplanted and grown with plenty of room.

The Golden Yews and Yuccas, for which the Nurseries have long been famous, are the finest lot ever offered by Public Auction.

May be viewed one week prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers, Cheapside.

Enfield Highway.

UNRESERVED CLEARANCE SALE, by order of Mr. George Perry, Jun., who is relinquishing business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, 2, Bedford Road, Green Street, Enfield Highway, N., eight minutes' walk from Brunswick Station, G.E.R., on TUESDAY, October 6, at 12 o'clock, 18,000 HERBACEOUS PLANTS in grand assortment; 12,000 PANSIES, all of the choicest named kinds; 20,000 CARNATIONS (11,000 in pots), comprising Germania, Mrs. Reynolds Hole, Mrs. Frank Watts, Mrs. Worrie Braggart, Mr. G. Perry, Florence Perry, and others; also a large number of choice Seedlings, 10,000 PINKS, 1000 VERONICAS, 5000 ROSES, on own Roots; 800 AUCUBAS and BOX, Erection of Shed, &c. Six weeks will be allowed for removal of Roses. May be viewed any day prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Walham Green.

CLEARANCE SALE of GREENHOUSE LIGHTS, PIPING, and STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, The Nursery, Farm Lane, Walham Green, on WEDNESDAY, October 7, at 12 o'clock, by order of Mr. W. Brown, without the least reserve, 3000 FERNS, 10,000 CHRYSANTHEMUMS, BITCH REPPENS, BEGONIAS, 20,000 GOLDEN and GREEN ETUONYMUS, the erections of eleven GREENHOUSES, HOT-WATER PIPING, BOILERS, 250 PIT LIGHTS, and FRAMES, SHEDS, MARKET VAN, and other items. On view two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Sunningdale, Berks.

ANNUAL SALE, without Reserve.—SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, carefully prepared for removal; by order of Mr. Charles Noble.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the premises, The Nurseries, Sunningdale, close to Sunningdale Station, on MONDAY, October 5, and five following days, at 12 o'clock precisely each day; a splendid lot of Standard and Bush Rhododendrons, of the best kinds, many of them extra fine specimens for which these Nurseries are so famed; good bushy Ponticum Rhododendrons, 1 to 2 1/2 feet; Flowering Shrubs, in great variety. Many thousands of Conifers, 3 to 5 feet, consisting of Cupressus, Thujas, and Myopsis, specially adapted for hedges or borders; a large assortment of specimen Trees and Shrubs, including Gilded Retinosporas, variegated Hollies, Abies, and others for effective planting. 10,000 oval-leaved Privet; a large quantity of Mahonia Aquifolia, Harry Heaths, Ivies; a fine collection of Standard and Pyramid Apples, Damsons, Pyramid Pears, Gooseberries and currants of the most approved kinds; Cob Nuts, and other Stock.

Luncheon will be provided for intending purchasers, and arrangements can be made with Mr. Noble to lift and forward lots to all parts of the Kingdom at the mere cost of labour incurred and material used.

The Stock may now be viewed. Catalogues can be obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Isleworth.

ANNUAL SALE of YOUNG NURSERY STOCK, grown specially for the Trade.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. C. Lee & Son to SELL by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, on THURSDAY, October 8, thousands of young CONIFERS, for growing on, and other Stock.

Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Leyton, E. By Order of the Mortgagee.

The VALUABLE LEASE of the NURSERY, 87 years unexpired; also the ERECTIONS of SEVERAL GREENHOUSES, PIPING, and BOILERS; 6000 CHRYSANTHEMUMS, in 16 and 24-pots; 600 MYRTLES, large WHITE AZALEAS, MAIDENHAIR FERNS, TUBEROSES, TULIPS, and other STOCK; VAN, BARROWS, and TOOLS, in suitable lots.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above by AUCTION, on the Premises, the Nursery, Beaumont Road, Leyton (between Leyton and Hoe Street Stations, G.E.Ry.), on THURSDAY, October 8, at 12 o'clock.

May be viewed. Catalogues had of Mr. HART, on the premises; of Messrs. W. H. SMITH and SON, Solicitors, Gre-sham House, 104 Broad Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Woking.

UNUSUALLY IMPORTANT SIX DAYS' SALE of exceptionally well-grown NURSERY STOCK, in the finest possible condition for transplanting, and embracing the most important lot of stock offered for Auction for many years, the quality of which is unsurpassed in the Trade.

GREAT UNRESERVED SALE by order of the Trustees of the late Mr. George Jackman.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Woking Nurseries, Woking, Surrey, on MONDAY, October 12, and FIVE FOLLOWING DAYS, at 12 o'clock precisely each day, several acres of unusually well-grown NURSERY STOCK, comprising 10,000 Conifers, 3 to 7 feet; thousands of smaller Evergreens and Conifers; 1500 Picea Nordmanniana and Picea; 4000 Box, in variety, 1 to 4 feet; 1000 Arancaria imbricata, 1 to 3 feet; 3000 Aeneas, in variety, 1 to 4 feet; 3000 Laurels of sorts, 2 to 5 feet; 2000 English and Golden Yews, 2 to 7 feet; 1000 Gold, Silver, and Green Hollies; 5000 deciduous Flowering Shrubs; 5000 named Rhododendrons, 1 to 3 feet; 2000 Limes, 5 to 10 feet; 1000 Purple Beech, 6 to 10 feet; 1000 Maples, in variety, 7 to 10 feet; Forest Trees in great quantities; 60,000 common Ash, 2 to 5 feet; 50,000 Quick, 1 to 2 feet; 10,000 English and Turkey Oaks, 2 to 5 feet; 6000 English Laurels, 3 to 5 feet; a splendid collection of Ornamental Trees for park and avenue planting, 10 to 20 feet; 5000 Standard and Feathered Plums; Damsons, Quinces, &c.; 2000 Standard and Feathered Flowering Almonds, Peaches, and other Stock.

Goods can be transmitted from Woking Railway Station to all parts without change of truck.

The Auctioneers have personally visited the nurseries and desire to call attention of intending purchasers to this Sale, as it is undoubtedly the most important Auction of Nursery Stock that has been held for many years.

An inspection will well repay a visit by those contemplating planting during the season.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Windlesham Nurseries, Bagshot, Surrey.

GREAT ANNUAL SALE of the exceedingly well-grown NURSERY STOCK, carefully prepared for removal, and lotted to suit the Trade and large Buyers, by order of Mr. Richard Mason, whose reputation as a Grower of Nursery Stock is so well-known.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Windlesham Nurseries, Bagshot, Surrey, twenty minutes' walk from Bagshot, and 2 1/2 miles from Sunningdale Station, on MONDAY, October 19, and three following days, at 12 o'clock precisely each day, several Acres of exceptionally well-grown NURSERY STOCK. May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

AZALEAS, and OTHER PLANTS from BELGIUM. MESSRS. PROTHEROE and MORRIS will include in their SALE of BULBS, on WEDNESDAY NEXT, a consignment of AZALEAS, PALMS, and other PLANTS, from BELGIUM.

Tunbridge Wells.

About 1 1/2 miles from the South Eastern Railway Station, and 1 mile from Southborough. IMPORTANT to GENTLEMEN, BUILDERS, and OTHERS. MESSRS. PROTHEROE and MORRIS are instructed by Mr. John Charlton to SELL by AUCTION, on the Premises, The High Brooms Nurseries, Tun ridge Wells, on FRIDAY, October 9, at 12 o'clock precisely, a quantity of thriving and well grown NURSERY STOCK, including a great assortment of Conifers and Evergreen Shrubs, 2000 American Arbor Vite, suitable for hedges; 750 Thuja Lobbin, 600 Cupressus Lawsonii, various sizes; 500 Laurels of sorts, 500 Standard and Dwarf Roses of the leading kinds, 900 choice Herbaceous Plants, in best named kinds; Flowering Shrubs, Hardy Climbers, Red and Black Currants, &c., specially lotted to suit private buyers.

Tuesday, October 13.

IMPORTANT SALE of a celebrated FRENCH COLLECTION of ORCHIDS formed by the—

COUNT HORACE DE CHOISEUL, embracing a large number of SPECIMEN and RARE CATTLEYAS. MESSRS. PROTHEROE and MORRIS are favoured with instructions to SELL by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 13, the above valuable collection of Established Orchids.

Liverpool.

By order of the executors of the late Mr. George Cunningham. The FIRST PORTION of the extensive NURSERY STOCK, consisting of FRUIT and FOREST TREES, EVERGREEN and DECIDUOUS ORNAMENTAL TREES and SHRUBS, in great variety.

MESSRS. PROTHEROE and MORRIS beg to give notice of this IMPORTANT SALE, which is fixed to take place on the Premises, the Oak Vale Nurseries, Old Swan, Liverpool, on MONDAY, October 19, and THREE FOLLOWING DAYS.

The Stock may be viewed any time prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Dutch Bulbs.

SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half past 12 o'clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving Weekly from well-known Farms in Holland.

Thursday Next.

VALUABLE IMPORTED and ESTABLISHED ORCHIDS, TREE FERNS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY, October 1, at half-past 12 o'clock precisely, a valuable IMPORTATION of ORCHIDS, comprising fine plants of Cypripedium speciosum, Pseudocypripedium macranthum, D. Veitchianum, D. ochreatum, Calceola veratrifolia, Cypripedium barbatum, Phaius Blumei, Vanda tricolor, V. survis, Angreecums, &c., &c. Also a good collection of ESTABLISHED ORCHIDS, many in flower; several fine TREE FERNS, just received in splendid condition; 10,000 LILIUM HARRISI and L. CANDIDUM, &c., &c.

Valuable Collection of Established Orchids

MR. J. C. STEVENS has received instructions from the Executors of the late G. Neville Wyatt, Esq., of Lake House, Cheltenham, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY, October 21 and 22, at half-past 12 o'clock precisely each day, his highly important and valuable COLLECTION of ESTABLISHED ORCHIDS (without the least Reserve), which contains many fine things, amongst which will be found:—

- Cypripedium Mooreana
Lelia Pilcherei
.. Measure-jana
Masdevallia Veitchii grandiflora
.. Chautini
Anguloa Ruckeri sanguinea, grand form
Oncidium Ornithorhynchum
Anguloa Ruckeri sanguinea, grand form
Epidendrum Walisi
Oncidium incurvum album
Batemannia Burtii
Ada aurantiaca
Corymbia cristata lemaniana, splendid specimen
Lolia Wyattiana
Cypripedium hirsutissimum, many new forms
Cattleya Mendellii, including many new forms
.. Skinneri oculata
.. exoniensis
.. gigas
.. Gaskelliana var. Dalniense
.. uro-skinneri, splendid specimen
Vanda Kimballiana
.. ramosissimum
.. Sanderiana, several plants
Cattleya labiata, autumn-flowering variety, true
Saccobulbium Hiathi, extremely rare
Anthurium Scherzerianum, Cologne cristata, Chats-Lake House variety, grand plant
.. &c., &c., &c.

A MOST BEAUTIFUL and LARGELY-FLOWERING VANDA CECULEA, a UNIQUE VARIETY. On view morning of Sale, and Catalogues had.

MESSRS. BYRON AND RANGELEY are instructed by J. Burton Barrow, Esq., Ringwood Hall, near Chesterfield, Derbyshire, to SELL by AUCTION, on THURSDAY, October 8, 1891, the whole of the valuable collection of STOVE and GREENHOUSE PLANTS, including Palms, Azaleas, Camellias, Ferns, Sweet-scented Bay, Teascented and other Roses, Orange Tree, Rhododendrons, Stephanotis, Chrysanthemums, and a choice collection of many other varieties in 250 lots.

The Auctioneers beg to call the attention of the Gentry, Nurserymen, Amateur Gardeners, and other to this important Sale of choice and valuable collection of plants which are clean and healthy, and will be sold without reserve.

Catalogues can be had from the Auctioneers, 5, Low Pavement, Chesterfield; or from Mr. BOWN, at The Gardens, Ringwood, one week previous to day of Sale.

Ringwood Hall is situated 1 mile from Staveley, and 2 1/2 miles from the Midland Station, Chesterfield.

Sale to commence at 12 o'clock.

Notice.

HIGHLY IMPORTANT FIVE DAYS' UNRESERVED SALE of beautifully grown NURSERY STOCK, all well-rooted, and carefully prepared for removal, and specially selected for the Sale. By order of Messrs. Isaac Matthews & Son.

MR. JOHN OAKS, Ash, will SELL by AUCTION, on the Premises, at the far-famed Bagnall Tite Oaks and Milton Nurseries, on OCTOBER 21 and FOLLOWING DAYS, without reserve, several Acres of NURSERY STOCK, grown to the highest perfection. The Nurseries are in an extremely cold situation, and all the trees are perfectly barked, and grown to the highest perfection. Extremely well-rooted and well-furnished Hodgkin's, Common, Maderiensis, Silver, and Gold Hollies in variety, 100,000 Rhododendrons various, a large quantity of all leading varieties of Conifers, Evergreens, &c., suitable for Ornamental Planting, Parks, Cemeteries, Pleasure Grounds, &c. Large quantities of Thorn, Quick, Ash, Elm, Alder, Privet, Austrian Pines, Spruce Fir, Chestnuts, Willows. All other trees for Woods and other plantations.

Catalogues seven days prior to Sale on application to the Nurseries, Milton, Stock-on-Trent, Milton is the nearest station, L. & N.W. Railway. All trains met.

WANTED to RENT, a small NURSERY, 6 Greenhouses, and half an acre of Land. Must be doing a good business. State full particulars. Price must be low.—A. W., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED to RENT, a SMALL NURSERY, with DWELLING-HOUSE, all to be in good repair. W. BRUNSWICK, 58, Queen's Lane, S.E.

To Seed Merchants and Others. TO BE SOLD, the HOUSE, SHOP, WAREHOUSE, and PREMISES lately occupied by the late Mr. William Miller, deceased, situated at East Herrington, near Sunderland, and used by him as a Seed, Grain, and Oilcake Merchant, together with the goodwill of the Business. If not sold, a suitable tenant would be accepted. Cards to View, and further particulars, may be obtained of WILLIAM BELL AND SONS, Solicitors, 23, Lambton Street, Sunderland.

TO BE SOLD, the TWENTY YEARS' LEASE of a small COMPACT NURSERY, situated in the North of London, 8 miles from Covent Garden. The Glass consists of 6 Greenhouses and Vineries in full profit, the largest Vinery being 116 by 20 feet. The grounds consist of 1 1/2 Acres, the chief of which is in Orchard, the whole being a good going concern. Low Rental. Stock and Crop at Valuation. Apply to J. W. WOODHALL, Oakleigh Road, White-stone, N.

To Gardeners. FOR DISPOSAL, at September Quarter, good JOBBING BUSINESS, small, near London. Good connection. Greenhouse Plants, &c., Tools requisite for carrying on same. For particulars apply, E. G. L., Mr. Gibson, Stationer, Richmond, S.W.

TO BE SOLD, a Bargain (through a death).—The LEASE of a capital MARKET NURSERY, 8 miles from Covent Garden, with eleven good Glass-houses, all exceptionally well heated; also 200 good Pit-lights and Fixtures. Capital Stabling and Dwelling-house with every convenience. Rent only £25 per annum. Price £375, or near offer. Apply to J. S., 2, Elm Villas, Town Road, Lower Edmonton.

£1.—SURREY HILLS; 18 Miles. Freehold Poultry Farm, Building, or Garden Plots. 2 1/2 feet by 150 feet. £10 each. Deposit, £1 and eighteen half-yearly instalments of 10s.—Plans, Mr. BROUGHTON, Yatefield, Westerham. Sunday fare 1s. 9d. return.

FOR SALE, the twelve years' LEASE of a NURSERY (2 acres), seven Glass-houses, all heated. Within 10 miles of Covent Garden, and close to two stations. Apply, F. H., 5, Gladstone Villas, Fairfield Road, Edmonton.

FOR SALE, very substantial first-class VINERY, 44 feet by 15 feet; and CUCUMBER-HOUSE, 15 feet by 11 feet, with necessary hot-water pipe, and gearing for lights.—Apply, SMITH BROS., 28, Gold St., Northampton.

TO FLORISTS.—NURSERY (Large) North of London, TO BE LET, or LEASE to be SOLD; or suitable Man with small Capital taken as MANAGING PARTNER. Letters to F. W., 27, Fitzroy Street, London, W.

J. WEEKS and CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers. King's Road, Chelsea, S.W.

EXHIBITIONS. ROYAL HORTICULTURAL SOCIETY.

EXHIBITION and CONFERENCE on PERENNIAL SUNFLOWERS, MICHAELMAS DAISIES and CONE-BEARING TREES and SHRUBS, At CHISWICK GARDENS,

On OCTOBER 6, 7, and 8, 1891.

Schedules and all particulars to be obtained from the Society's Office, 117, Victoria Street, Westminster, S.W. APPLICATIONS for SPACE to EXHIBIT to be made to Mr. A. F. BARRON, Royal Horticultural Society's Gardens, Chiswick, S.W., not later than FRIDAY, October 2.

CRYSTAL PALACE GREAT AUTUMN EXHIBITION of FRUIT, OCTOBER 8 to 10. ENTRIES CLOSE OCTOBER 1.

Schedules and Entry Forms post-free, on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

Landscape Gardening. ARTHUR M. KETTLEWELL (Author of the Theory and Practice of Landscape Gardening), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons. Address, Titley, E.S.O., Herefordshire.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus. Address, SECRETARY, 43, Great Tower Street, E.C.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World. 30 minutes from St. Pancras.

FOR SALE, cheap, a handsome pair of LANTANA PALMS, about 10 feet high; clean and healthy. Price, 7 guineas; worth 15 guineas. W. CLEMENTS, Nurseryman, Church End, Finchley.

SAMUEL SMITH, NURSERYMAN, Slaghills Nursery, near Matlock, Derbyshire, makes very liberal Selections of 100 Sorts of ROCK PLANTS, and 100 Sorts of BORDER PLANTS; strong, from open ground; in one plant of a sort, at 16s. 8d. per 100; if taken in three plants of a sort, at 10s. 6d. per 100. LIST, free on application.

BARGAINS in BULBS.—By Act of Parliament, Railway crossing our Gardens. Must clear. Pleasant Eye Narcissus, 6s. per 1000 (10s. 6d. per cwt. as lifted); Blue Scillas, 10s.; Spanish Iris, 17s.; Bethlehem Stars, 12s. 6d.; Aconites, 13s. 6d.; Bilborus, 12s.; Mixed Narcissus, 30s. All per 1000. DALCOCK AND CO., Spalding, Lincolnshire.

Many Acres of Lilies of the Valley! T. JANSOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices as per terms on application.

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PTERIS VICTORILE.—The best new plant of the year, nice plants, 3s. 6d. each; 2 for 6s.; 6 for 15s., free by post. A LILIUM PTEROPUS.—New and rare, long shining dark green fronds, beautifully recurved, a splendid market or table Fern. Nice plants 2s. 6d. each; 2 for 4s. Post free. Cash with order. WILLIAM GOLBY, Elgdon Nursery, Brierfield, near Burnley, Lancashire.

B. MALLER and SONS beg to offer to the Trade a very extensive and unusually well grown Stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS of sorts, ADIANTUM CUNEATUM, and other FERNS; PALMS, in variety, GARDENIAS, STEPHANOLIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES (in pots), BORONIA MEGASTIGMA, VINES (in pots), &c. An Inspection is invited. Trade CATALOGUES forwarded on application. Burnt Ash Lane Nurseries, Lee, S.E.

Dutch, Cape, and Exotic Bulbs. ANT. ROOZEN and SON'S CATALOGUE for Autumn, 1891, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants (104 pages in English) is now ready, and will, as usual, be sent, post-free, on application to their Agents, Messrs. MERTENS and CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.; or themselves direct, at Overveen, near Haarlem, Holland. N.B.—No connection with any other firm of the same name.

Azaleas, Camellias, Rhododendrons, Palms, ORCHIDS, &c.—At LOW PRICES. PLANTS GROWN SPECIALLY FOR ENGLISH TRADE. C. VUYLSTÈKE, Nurseryman, Loochristy, (Ghent, Belgium). Wholesale CATALOGUE now ready, and may be had free, of—Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, London, E.C.

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A PURE WHITE BEDDING CLEMATIS, and the FERN which has lately received so many of the highest awards and proofs of admiration.

CLEMATIS SMITH'S SNOW-WHITE JACKMANJI.—The flowers are paper-white, about the same size as those of the old purple Jackmanji, but produced in even greater profusion. It is unrivalled for beds, and also for climbing. Ready in August. 7s. 6d. each.

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FOR THE BEST, send to

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One out of many Testimonials:—"The 20 bushels of Spawm I had from you for our Mushroom Farm, at Poole, has proved very satisfactory; in fact, the best I have ever had.—T. H. CRASP, Canford Gardens."

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See our Special Wholesale Catalogue of Bulbs.

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HUGH LOW & CO.

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Have pleasure in notifying that their Collector, Mr. BOXALL, has recently returned from the East, bringing with him an importation of the above, in grand condition, the plants being rooted and well established in pots.

INSPECTION INVITED.

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RED and BLACK, strong 2-year-old.

DUTCH RED, 10s. per 100.

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2s. per 100 less for quantities of 1000. Sample lots of 12 trees of either above sorts, 2s. 6d.

The above are offered free on rail at Wisbeach, and will be ready for removal in a few weeks. Remittance with order for lots of under 500. Banker's or London reference for larger quantities. When ordering, name this Paper.

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SAMPLES FREE ON APPLICATION.

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ALL KINDS OF NURSERY STOCK.
SEEDS and BULBS (HOME-GROWN and IMPORTED).
ALPINE AND HERBACEOUS PLANTS.
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CHOICE INDOOR PLANTS.
PALMS, ORCHIDS, FERNS, &c. IN GREAT VARIETY.
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WHO CULTIVATE 800 KINDS TRUE TO NAME.
ILLUSTRATED LIST 6 STAMPS. LIST OF NAMES GRATIS.

BUYERS SHOULD COME AND VIEW THE STOCK.

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HAVE JUST RECEIVED THEIR FIRST CONSIGNMENT OF

DUTCH BULBS,
IN SPLENDID CONDITION.

Single and Double SNOWDROPS, Named and Bedding HYACINTHS (CROCUS, named, and in mixture), Single and Double TULIPS, Border NARCISSUS, POLYANTHUS NARCISSUS, ROMAN HYACINTHS, and all other kinds of BULBS, at very low rates.

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LARGE & VARIED COLLECTIONS OF
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All thoroughly ripened and in excellent condition for planting.

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Seed & Bulb Growers **DICKSONS CHESTER**

EDINBURGH.

Our remarks in last week's, respecting our BEGONIAS and CACTUS DAHLIAS in the South, applies exactly now to our exhibit at the great International Show in the North, only with greater force, weight and effect; for there was nothing there, or had there ever been, to approach either. It was openly said they were the feature of the Show, and would remain vivid on the minds of all as long as memory lasted. But it was almost grievous—after what we have done, and are still doing, to perfect the habit and flowers of the lovely Begonia—to find such a quantity of inferior ones in the neighbourhood. We ask all to "Come and See." We left at home far better ones for seeding than those we exhibited at the two recent Shows.

As a proof of the above, we append the following:—

Captain W. E. MAY, Rutherford House, Penicuik, September 10th, 1891.

Gentlemen,—Allow me to congratulate you on your magnificent display of Dahlias and Begonias at the Edinburgh Show, which was one of the features of the Exhibition. It was allowed by all to be the finest exhibit ever seen in the North.

J. MITCHELL, Esq., Emerald, Aberdeen, September 12th, 1891.

Sirs,—At the recent great Show in Edinburgh, I was greatly impressed with the beauty of your Begonias and Cactus Dahlias.

H. CANNELL & SONS,
SWANLEY, KENT.

ANTHONY WATERER invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted, the girth of the stem is taken at 4 feet from the ground.

- ACACIA BESSONIANA, 10 to 14 feet, girth 3 to 4 inches.
- ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
- .. WIERII LACINIATA, 10 to 14 feet, girth 3 to 5 inch.
- .. NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
- .. REITENBACHII, 12 to 14 feet, girth 4 to 5 inches.
- .. SCHWEDLERII, 12 to 18 feet, girth 4 to 8 inches.
- .. WORLEYII, 12 to 14 feet, girth 3 to 6 inches.
- ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
- BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
- BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
- CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 4 to 7 inches.
- CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
- .. Double White, 14 to 16 feet, girth 6 to 8 inches.
- .. Scarlet, 12 to 18 feet, girth 4 to 10 inches.
- .. Spanish, 12 to 14 feet, girth 4 to 5 inches.
- ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
- .. Guernsey, 16 to 18 feet, girth 7 to 9 inches.
- LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
- .. EUCHLORA or DASYSITTA, 12 to 14 feet, girth 4 to 6 inches.
- .. Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.
- LIQUIDAMBER, 6 to 10 feet.
- MAPLE, Norway, 12 to 16 feet.
- OAK, English, 12 to 14 feet, girth 4 to 5 inches.
- .. Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
- PLANES (English-grown), 12 to 16 feet, girth 4 to 5 inches.
- POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
- SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
- .. Purple, 14 to 16 feet, girth 6 to 7 inches.
- THORNS, Double Pink, 8 to 10 feet.
- .. Scarlet, 8 to 10 feet.
- .. White, 8 to 10 feet.
- TULIP TREES, 8 to 10 feet.
- WALNUT, Common, 10 to 12 feet.

WEeping TREES.

- BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
 - .. Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
 - BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
 - .. Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
 - ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
 - LARCH, Weeping, Pyramids, 8 to 10 feet.
 - POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
- Knap Hill Nursery, Woking, Surrey.

FERNS! FERNS!! FERNS!!! — Trade. In 25 most saleable kinds, at 12s. per 100. Large Adiantum cuneatum, fine tops, in 5-inch pots, 50s. per 100. Large Ferns, in variety, 45s. per 100, in 4's. Extra large Aralia Sieboldii, in 48-pots, 6s. per dozen, 45s. per 100. Packed free. Cash with Order.
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TREE CARNATIONS.—Duke of Clarence, new, the finest crimson-scarlet in cultivation, very large flowers; good plants, in 5-inch pots, 12s. per doz. Price per 100 on application. Carnation Souv. de Labryère, bright scarlet, remarkably free in winter; bushy plants, in 5-inch pots, 9s. per doz. Packing free for cash.
CRANE AND CLARKE, Hillside Nursery, March, Cambs.

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Never has there been such a complete Catalogue issued of everything required for the garden as the one we are now sending post free; neither has there ever been such a splendid stock of best varieties of the many families of plants necessary to keep the garden in the highest state of perfection as we are now soliciting orders for. Our climate, soil, and fertility give us and purchasers many advantages, and we ask all to send for a Catalogue, and then



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To those about to Plant.

A DESCRIPTIVE CATALOGUE of Roses, Fruit Trees, Conifers, Evergreen and Flowering Shrubs, Rhododendrons, Ornamental and Forest Trees, Clematis, and other Climbing Plants, in large variety, sent free on application to—
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200,000 BERLIN LILY OF THE VALLEY CROWNS, strong and well-rooted, of own growth, and able to bloom, are for Sale this year by the undersigned. Price, per 1000, free on board, at Hamburg, 23 Marks. The advertiser begs to remark that he will forward only such crowns as have been grown in the very best ground, and that Berlin dealers are, by preference, buying his crowns for the Export Trade; but, as these dealers make, with respect to the price they pay, no difference between good and bad crowns, he has resolved to forward his crowns himself. He would therefore like to sell the above Lot to one firm direct, at the price quoted, and would remark that next year he will be able to supply 500,000 crowns.
Intending buyers are requested to apply as soon as possible to **FRANZ GOETZE**, Berlin, O., vor dem Stralauer Thor, 37, Germany.

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THE LIVERPOOL HORTICULTURAL CO.
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Have an immense Stock of
ESTABLISHED & SEMI-ESTABLISHED ORCHIDS,

And they are constantly receiving Importations from various parts of the world.

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GARSTON, near LIVERPOOL.

VANDA CÆRULEA.

A grand lot of the above are now finely in bloom, and well worthy a visit by Gentlemen interested in the culture of this lovely Orchid.
Inspection cordially invited.

HUGH LOW & CO.,
CLAPTON NURSERY, LONDON, N.E.

SHARPE'S VICTOR POTATO, EARLIEST OF ALL.

Now is the time to procure; and to prevent disappointment, Order direct of the Raisers.

Plant "VICTORS" now for using at Christmas, or put into boxes to sprout for planting out-of-doors early in March.

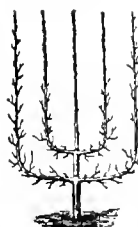
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THE NEW ENGLISH ROSES OF THE YEAR

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The finest light Rose for English Gardens. Strong Dwarfs, 4s. each; Standards, 5s.

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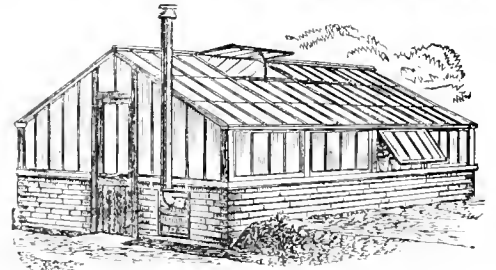
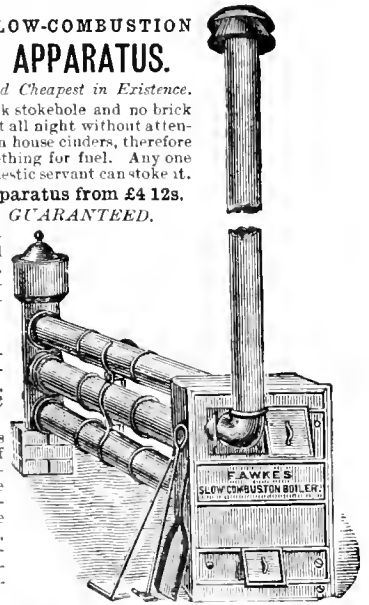
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Lift with balls of earth, so can be conveyed any distance & safely planted.
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Most Efficient and Cheapest in Existence. Requires no sunk stovehole and no brick setting. Will last all night without attention. Will burn house cinders, therefore costs next to nothing for fuel. Any one can fix it. A domestic servant can stoke it.
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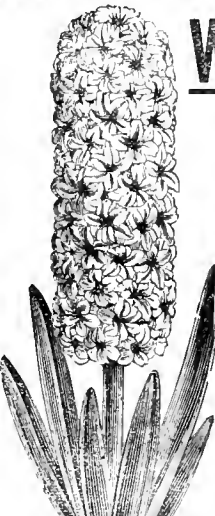
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CAUTION. Beware of inefficient incomplete Apparatus, which will not last all night.
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*For Planting during this and next Month to
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WHITE ROMAN HYACINTHS.
Very large Bulbs, price 21s. per 100; 3s. per dozen.
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Price, 6s. per 100; 1s. per dozen.

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VAN THOL TULIPS (Scarlet & Yellow).
Price, 7s. 6d. per 100; 1s. per dozen.

WHITE EASTER LILY.
Fine Bulbs, from the largest cultivator.
Price, 1s. and 2s. 6d. each; 10s. 6d. and 21s. per dozen.
ALL PARCELS CARRIAGE FREE.

CARTERS' ILLUSTRATED CATALOGUE, containing a
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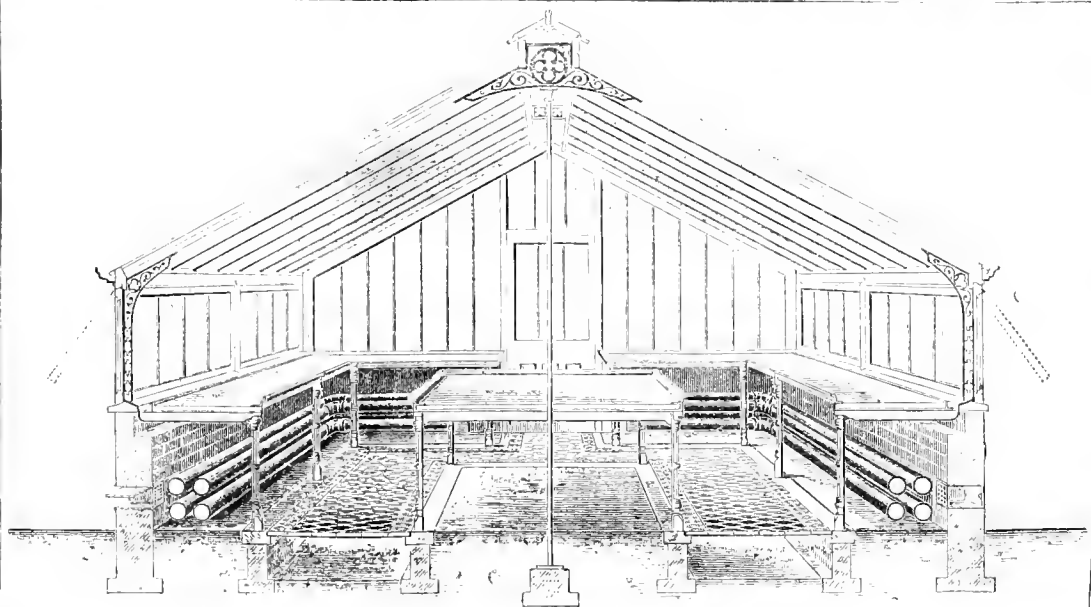
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Miscellaneous, Bulbous, & Tuberous-rooted Plants

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CARNATION HOUSE, 18 feet wide.
*All Timber thoroughly
Seasoned.*

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2000 SPLENDID PLANTS

WILL BE OFFERED BY

Messrs. Protheroe & Morris,

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IT HAS NO SYNONYM.

IT IS THE TRUE OLD LABIATA—

CATTELYA LABIATA AUTUMNALIS VERA

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THE TRUE OLD TYPICAL PLANT.

*IT IS A SPECIES FULL OF VARIETIES—RED, WHITE,
AND YELLOW—IN ALL THEIR SHADES.*

RE-INTRODUCED BY

F. SANDER & CO.,
ST. ALBANS.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 26, 1891.

THE CHURCHTOWN GARDENS.

THESE well-conducted gardens, intended for the delectation of the people of Lancashire, are situated at Southport, a favourite watering-place, 15 miles north of Liverpool. The gardens were established sixteen years ago by a company, and their success speaks well for the management of Mr. Bull, and for the love of flowers and gardening prevailing among the industrial classes of this populous county. On high days and holidays many a black and smoky town, like Wigan and St. Helens, two of the most smoke-stained and sulphurous places in England, pours forth its pleasure-seekers in search of change and pure air, and many of them come to Southport and find their way to the Churchtown Gardens in such numbers that the Company, it is said, have reaped good dividends.

Mr. Bull showed myself and two friends over the whole establishment, within and without doors. In a charming garden of 7 acres, the visitors from mines and nether regions, delighting in flowers as they often do, but whose gardens at home must be limited in size, can here ramble among flower borders as artistically decked out every season, and through shrubberies as choice and well disposed as at Knowsley, Worsley, or Croxteth Hall. The chief attractions of the place are the gardens, with a lake for boating, a large conservatory, where a good band discourses sweet music from amidst the foliage of Palms and Tree Ferns; a fernery, and a very popular museum, well filled with objects connected with natural history, and refreshment rooms nicely decorated with handsome plants. The plants in the conservatory are correctly labelled, and among them are good specimens of *Araucaria Cunninghamii*, *A. excelsa*, *Chamaerops Fortunei*, and other exotics growing in pots or borders, and well selected for the purpose of exhibiting to unaccustomed eyes the gorgeousness of tropical foliage. To the majority of persons who visit this local watering place, the gardens at Kew are an inaccessible wonder-land, and the stately foliage seen in this conservatory is quite sufficient to surprise and delight them.

The greater part of the revenue of the gardens is derived from admissions, but there is another source of profit in the sale of fruits, flowers, and plants. Specimen plants are largely propagated, and are offered at such prices that the admiring colliers and other well-paid working people can no more abstain from purchasing them than a hungry fish can resist the bait. Good big pots of Maidenhair Ferns are sold at a very reasonable price, and attractive "hutton-holes," prepared by practised hands, are taken home in great numbers. It might be supposed that hundreds of colliers intended next day to descend

the shafts with flowers in their coats; but this is not the case. The little works of art and nature blended—that is the “button-holes,” are not destined to be hid under a bushel, or to waste their sweetness in a coal-mine, since they are purchased for exhibition at the numerous little flower shows which, in Lancashire, are held throughout the summer in the villages, when small prizes are awarded to successful exhibitors in the various classes. The Churchtown Gardens, therefore, may claim the merit of creating and extending a love of flowers, which refines and humanises all who come under its influence. Formerly, in Lancashire, the Gooseberry reigned almost supreme amongst the horticultural objects on which people bestowed thought and minute attention, and bloated specimens they were! But the big Gooseberry has now been, happily, dethroned, and a democracy of flowers, Roses, Pansies, Auriculas, Chrysanthemums, “button-holes” and many florists' flowers, have been established in its place. The art of floriculture has been long seated in Lancashire, but it has been greatly extended in our own times by such influences as those I have referred to, and by the opportunities of comparison and competition, which the more extended social intercourse of the time promoted.

In some cases, working-men of a practical turn have greatly increased their loaves and fishes by the culture of flowers for market. A collier, possessing a fine specimen of *Maréchal Niel* Rose on his wall, built a glasshouse over it, and now makes £28 a year of the Roses cut from this single plant; and as the Rose grows, he extends its house. Stimulated by modern influences, and aided by association, some of the colliers have become excellent botanists, and the interest that many of them take in the study of flowers may be recognised in the number of botanical societies supported by them at Wigan, Haywood, and elsewhere, and by the field excursions connected with these societies, when they become eager listeners to the lectures of the learned, some themselves playing the part of spokesmen occasionally.

Having referred to the sale of fruit and plants at the gardens, I must add, that in connection with this department, there are nine vineries filled with Hamburgs, Muscats, and Alicantes; six propagating houses for the growth of plants sold on the spot; a *Pelargonium*-house two *Tomato*-houses, and a *Rose*-house. There is also a nursery, where a considerable business is done in fruit trees and in shrubs, and such “stuff” as nurserymen usually dispose of.

The selection of Apples and Pears adapted to the district is assisted by an orchard, now in full bearing, and carrying a good crop of each of those fruits, which, however, can hardly ripen in a season like this, when clouds and rain and a low temperature have afflicted the country at a time when heat and sun are expected. Last year, ripe Apples and Pears were sold to the visitors on Bank Holiday, August 3, while this year, at that date, a month of fine weather was still required to ripen the same varieties.

Among the Apples which Mr. Bull recommends are *Cellini Pippin*, *Cox's Orange Pippin*, *Dumelow's Seedling*, *Emperor Napoleon*, *Golden Spire*, *Grenadier*, *King of Pippins*, *Lord Suffield*, *Lord Grosvenor*, *New Hawthornden*, *Stirling Castle*, and *Pott's Seedling*. Among Pears he prefers *Beurré d'Amanlis*, *Citron des Carmes*, *Hessle*, *Jargonelle*, *Louise Bonne*, *Marie Louise*, and *Williams' Bon Chrétien*. His favourite Roses are too numerous to mention. H. E.

NEW OR NOTEWORTHY PLANTS.

CUPRESSUS ARIZONICA.*

An interesting species, discovered on the mountains of Eastern Arizona in 1880 by the Rev. L. Greene, and subsequently by other travellers in other



FIG. 41.—CARNIVOROUS PLANTS: GLANDS OF *DROSERAS*. (Natural size, also highly magnified.) See Leader page.

A, part of leaf of *D. dichotoma*, natural size; B, single gland, greatly magnified; C, portion of stalk, more highly magnified; D, pigment cells on leaf; E, tips of glands in contact with insect, showing the fluid discharged, and the glands bent; F, gland of species of *Drosera*, showing also unicellular hairs of the leaf.

parts of the mountains of that state. Greene describes it as “a tall conical tree 40 to 70 feet high, with

* *Cupressus arizonica*, Greene, in *Bulletin of the Torrey Botanical Club*, May, 1882, vol. ix., p. 64; Rusby, in *Bull. Torrey Bot. Club*, ix., 29; Serrano Watson, in *Proc. Amer. Acad. Sciences*, 1883, xvii., p. 157; C. S. Sargent, *Tenth Census Report*, 1884, p. 180, as synonymous with *C. guadelupensis*, but this is doubtful (*M. T. M.*); Lemmon, *Third Report of the Californian State Board of Forestry*, 1890, p. 180.

horizontal branches, trunk 2 to 4 feet in diameter, covered with a dark red fibrous bark; bark of the branches flaking in thin plates, and leaving a smooth surface; branchlets stout and rather rigid, sharply quadrangular; leaves closely imbricated, very glaucous, neither pitted nor glandular [we find in cultivated specimens glands not infrequent], their margins entire, or in the very oldest denticulate; cones crowded on short stout peduncles, globose, about 1 inch in diameter, of six to eight very thick and strongly bossed scales; seeds numerous, 2 lines or more wide.”

The tree is, moreover, stated to be peculiar in that, while the bark of its trunk is shreddy, that of the branches is scaly, falling off in thin plates. The wood is described as light and straight-grained, splitting with the utmost facility, that of the heart being deep red, as in the red Cedar (*Juniperus virginiana*). The branchlets are said to bear so strong a likeness to those of *Juniperus pachyphloea* of Torrey, that without fruit they are hardly distinguishable. It is the principal tree to the north of Mount Graham, and forms dense forests, particularly on the northern slopes (Greene, *l.c.*) Parry and Palmer met with the same tree in the Sierra Madre, south of Saltillo, in Central Mexico. Serrano Watson, in commenting on the specimens collected by these botanists, doubts whether the species is really distinct from *C. Benthami*. The trunks of all the trees, says Lemmon, who found it in the Chiricahua Mountains, are 40 to 50 feet high, and retain the bark, which is greyish, of moderate thickness, and disposed in longitudinal ridges, dividing into sections a few inches in length by diagonal reticulations, producing a curious latticed appearance.

Judging from the specimens in the herbarium, and the plants growing at Kew, and in Messrs. Veitch's nursery, we should say that it differs from *C. Benthami* in its looser habit, more regularly divaricate or crossed branchlets, which are thus in four planes, and in its coarser foliage. It is nearer to *C. Lindleyi*, but differs in its looser habit, crossing branchlets, more fleshy leaves, which are more ovate and less sharply pointed than in the last-named species. From *C. guadelupensis* it differs in the crossing and more sharply four-cornered branchlets, whilst its leaves are deltoid and glandular, flatter, and not so convex; the cones, moreover, of *arizonica* are smaller. It is true that all these characters are subject to variation, but for horticultural purposes it is requisite to look upon plants from a rather different standpoint from that of the botanist, and if we find one form hardy and the others not so, we naturally attach greater significance to that point than a botanist would do. The young trees, as seen at Kew and Combe Wood, are of columnar or fastigate habit, resembling in this particular *C. Goveniana*, with loosely arranged, ascending branches; the ultimate branchlets form pyramidal masses or systems, they are markedly decussate and straight, and of about equal length. The foliage is glaucous, leaves about $\frac{3}{8}$ inch long, ovate, deltoid, bluish, glandular, straight-edged, as seen from the side. The cones are (in herbarium specimens) on short stalks, globose, about half an inch in diameter; the scales convex, with a prominent umbo or boss. The tree is perfectly hardy at Kew and Combe Wood, even after the last winter, a point again in which it differs materially from most or all the Mexican Cupresses. When shown at a recent meeting of the Royal Horticultural Society by Messrs. Veitch, it was deservedly awarded a First-class Certificate. M. T. M.

THE MOVEMENTS, SECRETION, AND STRUCTURE OF *DIONEA MUSCIPULA*.

At the recent meeting of the American Association for the Advancement of Science, Dr. J. M. Macfarlane made a communication on the above, of which the following is a brief summary of results, obligingly communicated to us by the author. He had noticed several years ago that two touches were necessary under ordinary conditions to cause closure of the leaf, and on more careful experiment

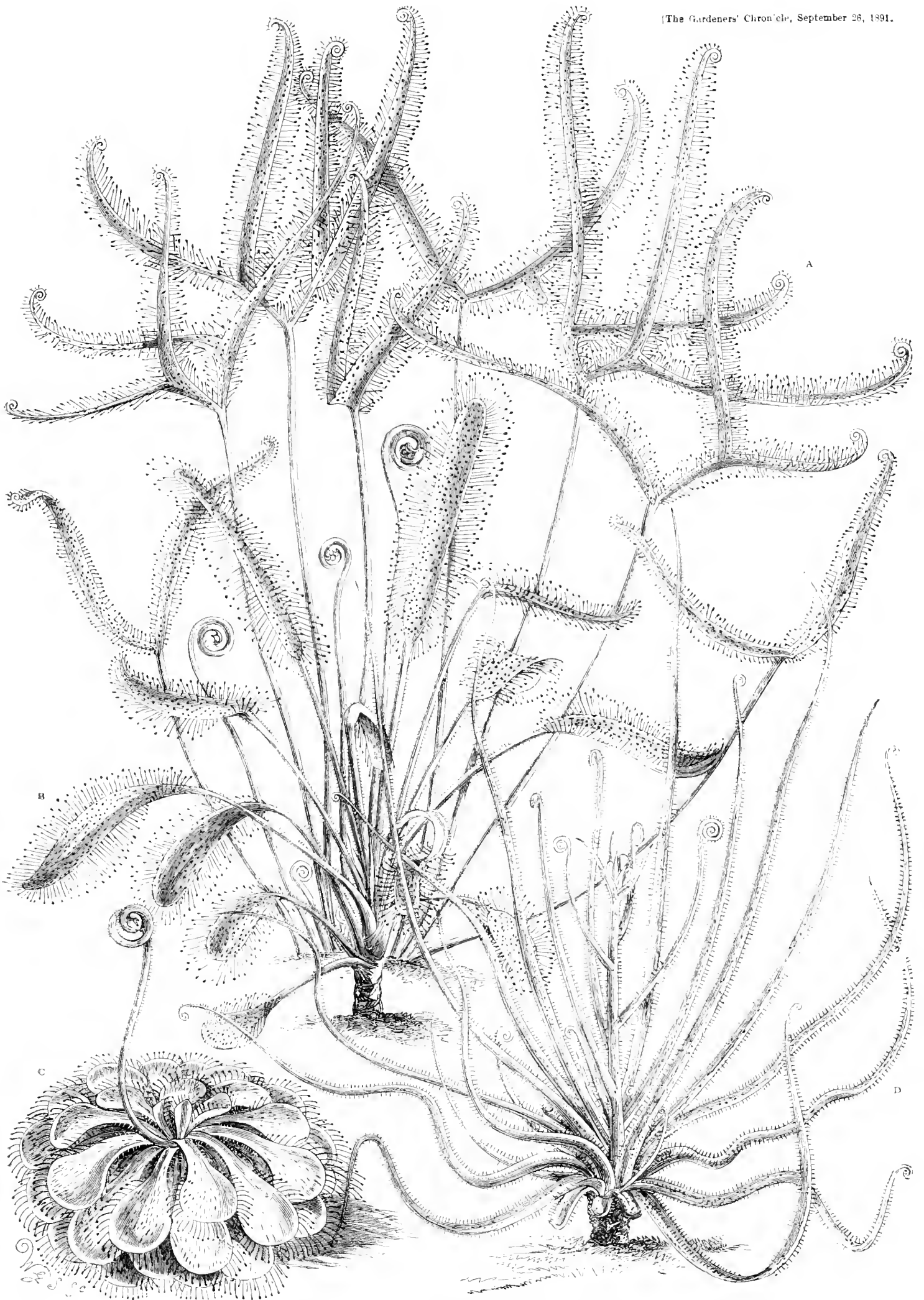


FIG. 42.—CARNIVOROUS PLANTS. GROUP OF DROSERAS: SUNDEWS. (SEE LEADER.)
A, *Drosera dichotoma*; B, *Drosera capensis*; C, *Drosera spatulata*; D, *Drosophyllum lusitanicum*.

since, he found that whether one only of the six irritable hairs was touched twice gently or strongly, or whether two were each once touched, the same result occurred. He then tried to ascertain how long influence of the first of the two stimuli would be retained by the protoplasm of the leaf-cells, and found that sharp memory-power, if it may be so called, was exhibited for fifteen seconds, that during the next forty seconds it became greatly weaker, and recollection of the first stimulus was greatly lost in sixty to seventy seconds. He showed the relation of this to Burdon Sanderson's and Page's results, and pointed out that the period between the two stimuli exactly corresponded to that "latent" period of muscular contraction in animals, though extended over a greatly longer space of time. But even three stimuli might be given before closure of an interval if less than about the one-fifth of a second elapsed between the first and second shocks.

It was further stated and demonstrated, that every part of the leaf-blade is sensitive, and closes after two gentle forceps snips, or after three if two of these closely succeed each other, also if the outer or inner surface be irritated. But if the first of the snip-shocks given be pretty strong, the memory of the protoplasm is intensified, so that even after the lapse of two or three minutes closure occurs on second shock. But while these are the simpler conditions, it was proved that an extremely powerful forceps shock, or strong jet of water, would at once cause contraction.

An interesting peculiarity, which the author considered could only be compared with the condition known as "contraction remainder" in muscular tissue, was demonstrated: a leaf, which had been closed, and was slowly opening, was gently pulled out further, and held for sixty to ninety seconds. It then remained rigidly open, but exhibited on stimulation all the above features, though in a rather sluggish manner.

The action of electrical and chemical stimuli was then described, the action of these being to indicate identity of behaviour in the leaf-cells with a neuromuscular cell in the lower animals.

Reference was then made to the nature and production of the digestive secretion, and gave reasons for considering that it might largely correspond to the waste materials excreted by contracting muscle.

After minute histological examination, the author stated that certain cells in the third and fourth layers next the upper surface showed an extremely fine waviness of the protoplasm, but on this point he desired to make further investigation. The description was rendered specially interesting from the presence of a beautiful lot of plants secured for the occasion by Mr. Oliver, of the Washington Botanic Garden, formerly of the Edinburgh Botanic Garden. On these plants the author demonstrated many of his results.

RORIDULA DENTATA.

ONE of the most remarkable of all the Sundews is that of which we now give illustrations (Fig. 43). They were taken from a plant growing at Kew, and now some 2 feet in height; but, in South Africa, it reaches a considerably greater stature, whilst its leaves are such efficient fly-traps, that they are hung up in the houses of the colonists for the purpose of abating the nuisance caused by the insects. It is a near ally of our common *Drosera*, differing from it only in slight technical details, but sharing its blood-thirsting propensities.

CATTLEYA LABIATA, LINDL.

THE re-discovery and re-introduction, after so long a period, of the genuine old autumn-flowering *Cattleya labiata* is one of the most interesting and important events to the horticultural world that has occurred for many years. Its continued existence in a wild state, notwithstanding all that has been written to the contrary, is now an assured fact.

The announcement in these columns on the 12th inst., that a magnificent importation of the true old autumn-flowering *Cattleya labiata* would be offered for sale by Mr. F. Sander, of St. Albans, who had re-introduced it from Swainson's original hunting-ground, came as a great surprise to most people, and we have it on good authority that on Friday last the sale-room presented such a scene as has seldom been witnessed, and that the whole of the 600 plants were disposed of to eager buyers. The announcement was assuredly sufficiently startling, for many have been the expeditions sent in search of the plant, and as so many had ended in disappointment, the belief gradually gained credence that it had been exterminated many years ago.

Much that is pure romance has gathered round the history of this magnificent plant, in which may be included the statement made last week, that while innumerable varieties of *Cattleya labiata* have filled our stoves, the true and original form, named after Mr. Cattley in 1821, has vanished. It may, therefore, be well to review somewhat critically the facts of the case.

Cattleya labiata was originally described and figured in Lindley's *Collectanea Botanica*, t. 33, where we are told that "this is another of the fine orchideous plants that were collected with our *Oncidium barbatum* by Mr. Swainson in the Brazils, and sent by him to Dr. Hooker. Our drawing was made by Mr. Curtis from a specimen which flowered in Mr. Cattley's stove last November. Without exception it is the handsomest species of the order we have ever seen alive." The date on the title page is 1821, but the work appeared in parts, and at intervals, so that the precise date of introduction must be sought elsewhere. We may also note that the *Oncidium barbatum* alluded to is figured at t. 27 of the same work. Lindley remarks that "for the figure of this new species of *Oncidium* we are indebted to Dr. Hooker. It was received by him, with several other fine orchideous plants, from William Swainson, Esq., who collected it during his residence in Brazil."

In 1825, a fine coloured plate of *Cattleya labiata* appeared in Hooker's *Exotic Flora*, vol. ii, t. 157, where appears the following note, evidently written by Mr. Cattley himself:—"The most splendid, perhaps, of all orchideous plants, which blossomed for the first time in the stove of my garden in Suffolk, during 1818, the plant having been sent to me by Mr. William Swainson during his visit to Brazil." Then follows a note by Sir W. J. Hooker:—"The individual here delineated is an offset from the parent plant just mentioned, and it flowered at the Glasgow Botanic Garden in November, 1824. . . . Mr. Cattley's plant was derived from the same source." There is also a dried flower in Sir W. Hooker's Herbarium, now at Kew, with the label, "Brazil, W. Swainson, Esq., fl. in Hort. nostr., 1819," from which it would appear that it flowered in the Glasgow Botanic Garden in 1819, the year after it first flowered with Mr. Cattley. From these facts it appears that the plant was sent to Cattley by Swainson, and first flowered in 1818; that Hooker's plant was an offset from Cattley's, and flowered during the following year, and that Lindley's original figure and description was prepared from a plant which flowered in Mr. Cattley's stove during November, either of 1818, or of one of the years immediately following. The only point which is a little contradictory in the two accounts, namely whether Swainson sent the plant to Cattley or to Hooker, is of very secondary importance. From Hooker's own account the former would appear the more probable, but from what Lindley says about *Oncidium barbatum* it is clear that Hooker did receive Orchids direct from Swainson, and if it could be shown that part of a clump so received was passed on to Cattley by Swainson's request, and part retained, there would be no conflict of evidence. He may, indeed, have sent to both, but against this must be set the statement that one was an offset of the other.

What is not stated is, where the plant was found growing wild, but it is known that Swainson's collections were made in the neighbourhood of Rio de

Janeiro, and the statements of Gardner, now to be considered, are sufficiently definite to settle this point. The latter first set foot in Brazil on July 23, 1836, at Rio de Janeiro, and soon afterwards made a series of excursions in the neighbourhood. From his *Travels in the Interior of Brazil*, second edition, published in 1849, the following facts are derived:—

"Near the sea," he writes, on p. 21, "and about 15 miles distant from the city [of Rio de Janeiro], rises the Gavea, or Topsail Mountain, so-called from its square shape, and well-known to English sailors by the name of Lord Hood's Nose. It has a flat top, and rises about 2000 feet above the level of the sea, to which it presents a nearly perpendicular precipitous face." A little further on (p. 22) he continues: "On the face of the mountain, at an elevation of several hundred feet, we observed some large patches of one of those beautiful large-flowered orchideous plants which are so common in Brazil. Its large rose-coloured flowers were very conspicuous, but we could not reach them. A few days afterwards we found it on a neighbouring mountain, and ascertained it to be *Cattleya labiata*. Those on the Gavea will long continue to vegetate, far from the reach of the greedy collector." Now comes the visit to the neighbouring mountain, just mentioned. On p. 23 he observes: "We made an excursion to a mountain called the Pedra Bonita, immediately opposite the Gavea;" and on p. 24, "Near the summit of the Pedra Bonita, there is a small fazenda, or farm, the proprietor of which was then clearing away the forest which covers it, converting the trees into charcoal. From the massive trunks of some of them which had just been felled, we obtained some very pretty orchideous plants." Finally, on p. 25, we read: "On the edge of a precipice on the eastern side [*i.e.*, of the Pedra Bonita], we found, covered with its large rose-coloured flowers, the splendid *Cattleya labiata*, which a few days before we had seen on the Gavea."

Let us now turn to Gardner's dried specimens, preserved at Kew. The label, in his own handwriting, is as follows: "It was with much difficulty, and no little danger, that I could obtain about a dozen specimens of this from the edge of a precipice on the Pedra Bonita Lymca. I collected, however, abundance of living plants. *G. G.*, Nov., 1836." The word "specimens," of course, alludes to pieces suitable for drying, two of which, consisting of pseudobulb with leaf and flower, are preserved at Kew, and these prove conclusively in themselves, as well as by their time of flowering, that Gardner's plant was identical with that of Swainson, as, indeed, they were determined to be by Lindley himself. It is significant that although Gardner subsequently visited the Organ Mountains, situated about 60 miles north of Rio, and other localities, and collected other *Cattleyas* and *Laelias*, he does not appear to have again met with *Cattleya labiata*.

Gardner's concluding words about the Pedra Bonita were truly prophetic: "The following year," he observes, on p. 25, "on my return from the Organ Mountains, I again visited this spot, and found that a great change had taken place. The forest, which formerly covered a considerable portion of the summit, was now cut down and converted into charcoal; and the small shrubs and *Vellozias* which grew in the exposed portion had been destroyed by fire. The progress of cultivation is proceeding so rapidly for twenty miles around Rio, that many of the species which still exist will, in the course of a few years, be completely annihilated, and the botanists of future times who visit the country will look in vain for the plants collected by their predecessors." How true have these words proved to the numerous persons who have sought for *Cattleya labiata*, after its value became fully recognised.

A few plants, however, have in some unaccountable way reached this country on at least two, and probably three, occasions, though the number of plants in cultivation has been so limited, that it has invariably commanded high prices. But it is often the unexpected which happens, and its re-discovery opens a new chapter in its history. The sale last week of a batch of 600 plants by Mr. Sander, at

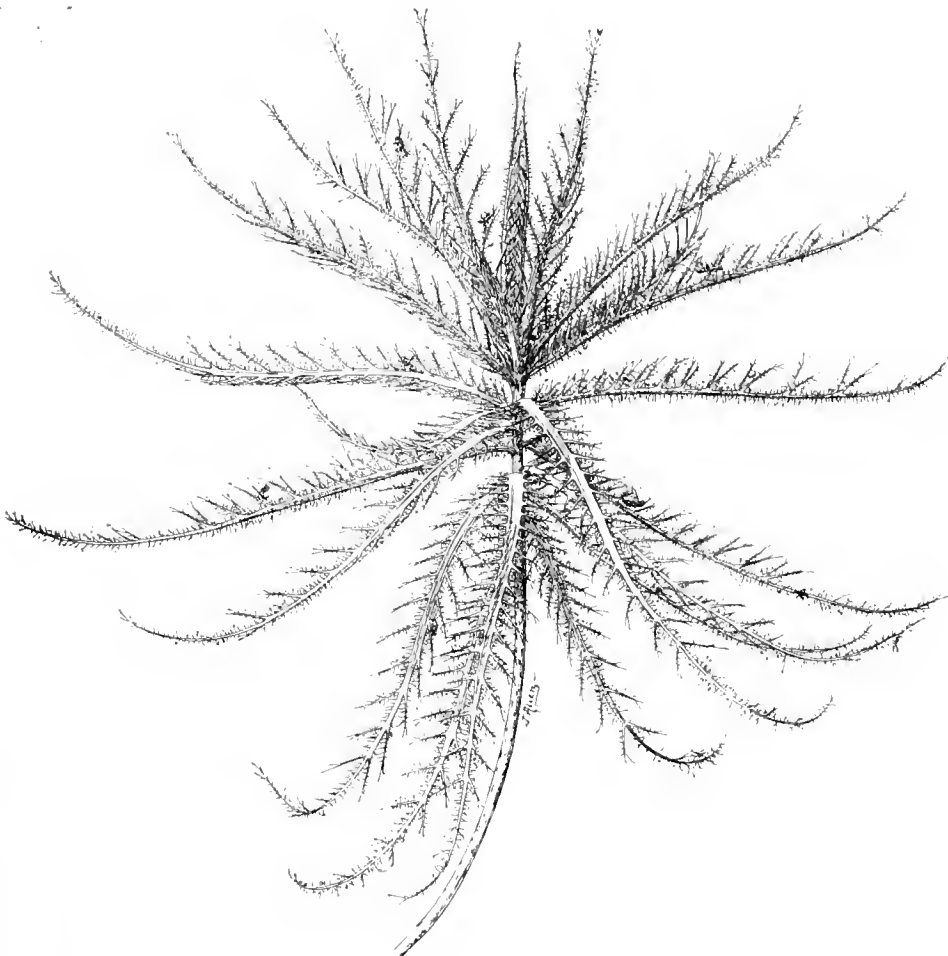
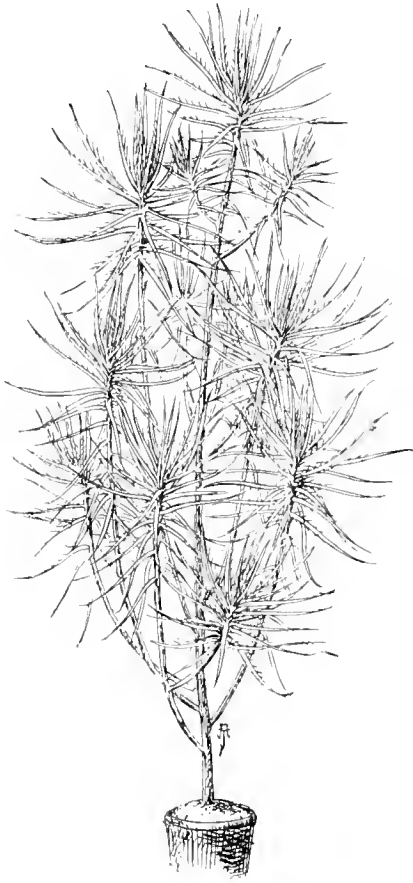


FIG. 43.—CARNIVOROUS PLANT: RORIDULA DENTATA, MUCH REDUCED; FLOWER ABOVE, TO THE RIGHT, IS THE REAL SIZE. (SEE P. 366.)

Protheroe & Morris' rooms, is now matter of history, and as a matter personal to the writer is involved in its reappearance, we may conclude with a few remarks on a subject which has been many times alluded to in the horticultural press during the past twelve months, namely, whether my *C. labiata* var. *Warocqueana* (or *C. Warocqueana*, L. Linden) is or is not the true old *C. labiata*.

At the meeting of the Royal Horticultural Society held on May 13, 1890, a newly-imported *Cattleya* was exhibited by Messrs. Linden, of Brussels, under the provisional name of *C. Warocqueana*. As the flowers had opened on the journey from Belgium, and had only just been received from abroad, no opinion was passed upon it by the Orchid Committee. Two racemes, one with three, the other with five flowers, which had developed on the journey home, and expanded almost immediately the cases were unpacked, were sent to me, together with a living plant, two wild dried flowers, a photograph, and five coloured drawings, and I was requested to describe it. I replied that it was unquestionably a variety of *C. labiata*, but which one I could not possibly say from such a series of varied materials. I therefore counselled a little delay, until more characteristic flowers should be developed. Unfortunately, delay is impracticable when a large batch of plants is involved, and being urged to proceed, I wrote to an experienced member of the Orchid Committee, asking him if he thought the plant exhibited could be referred to any known variety; to which he replied in the negative, pointing out, however, that the plant was not properly developed. I therefore proposed the provisional name of *C. labiata*, var. *Warocqueana*, adding:—"The relation it bears to other forms of *C. labiata* is the more difficult to determine because of the range of variation it exhibits, and the absence of information as to its habitat, and must be left until the plant becomes fully established." (*Gardeners' Chronicle*, June 14, 1890, p. 735.)

On October 23 came two flowers from Mr. R. Johnson, gr. to T. Statter, Esq., Stand Hall, Whitefield, Manchester, whose resemblance to the old autumn-flowering plant at once struck me; and a few days later came others from Messrs. Linden, with a letter to the effect that the two could not be distinguished. All were from the same batch of imported plants, and I began to suspect that in some way there were two things mixed up. The plants, however, continued to be exhibited as *C. Warocqueana*, though a belief gradually spread, which was expressed by M. Lucien Linden in the *Lindensia* for February (t. 268), as follows:—"Part of the plants which flowered last year, from October until the early days of January, are not distinguishable from the ancient *Cattleya labiata autumnalis*." And the belief that the long-lost plant had reappeared was also expressed elsewhere.

The question which now remains to be answered is, whether the summer flowering variety *Warocqueana* is distinct from the autumn one? The living plant, received in May, 1890, carrying a raceme of three expanded flowers (now dried and carefully preserved), was presented to the Kew collection. This year it has made a good growth, and now carries a fine double sheath, which promises to flower about November. This seems to show that the summer-flowering was abnormal, and induced by the adverse conditions it was necessarily placed under during transit. The question can hardly be considered settled until the next flowers expand, and if it should prove that autumn is the normal season, there will remain the remarkable fact that two horticultural firms should have independently re-discovered a plant, which has been searched for over and over again, and both within a short period of each other. But reverting to Messrs. Linden's plant, it is remarkable that neither their collector, nor themselves, nor the Orchid committee, nor myself, should have recognised it. For some of us, at least, the time of flowering, the small undeveloped flowers, and the absence of knowledge of the plant's habitat, is sufficient excuse, but I distinctly remember that the

dried flowers (which, together with the drawings and photograph, had to be returned) were more like *C. labiata* than any of its varieties, and believe I mentioned this in my letter as an argument against its being considered a new species. Had I pronounced it to be the genuine old *C. labiata*, and flowering in May—but we may leave the reader to finish the sentence.

Now for the habitat! Well, I do not know it. Not Swainson's, clearly, which was almost certainly Gardner's; unless, as is, indeed, probable, it was still more common near Rio in 1818 than eighteen years later. But if the two importations just named represent the same plant, I have no doubt both came from Brazil, and, indeed, from no great distance apart, unless the species is more widely diffused than we suspect even at the present moment. It is also more variable than has hitherto been supposed, and the next year or two may witness some striking developments. From every point of view its re-appearance is one of the most important events that has been chronicled for a long period. *R. A. Rolfe, Ferndale, Lawn Crescent, Kew.*

JAPAN ANEMONES.

THE Japanese Anemone (*A. japonica*) and its varieties, are just now in the full flush of their autumn beauty. The genus is an extremely interesting and instructive one, because representatives of it are among our earliest spring flowers. *A. apennina*, *blanda*, *coronaria*, *fulgens*, *hepatica*, *nemorosa*, and others are beautiful in our gardens, and with one or two that flower later, carry on the season of bloom to midsummer; and then comes something like a pause, until *A. japonica* begins to flower in August with prodigality, and with its varieties *alba* and *intermedia*, the blooming season lasts till the early days of winter. I do not think that I ever before witnessed the autumn-flowering Anemones blooming so finely as at present; the wet summer appears to have caused the plants to make a very vigorous growth, and the size and substance of the flowers are in keeping with the robustness of foliage. The Japanese Anemone shares with the *Dahlia* and the *Chrysanthemum* the glory of furnishing the finest floral display of the waning year.

We have come to grow the white form so much in gardens, that the beauty and usefulness of what we regard as the type is in danger of being overlooked. It is of somewhat dwarfer growth than its white and rose-coloured varieties; and almost invariably twelve-petalled, thus imparting to the flower an appearance of semi-doubling. But they are narrower in width than the petals of the other two, and they have but nine each. I have seen them with fewer, but never to my knowledge with more, and indeed it seems as if the addition of another is not at all requisite. Both as near such simple beauty and perfection as seems to be necessary or possible, the small golden-green ball-like seed-vessel in the centre, surrounded by its frill of numerous deep orange stamens, appears to be quite in keeping with the winsomeness of its other parts; and then the freedom and continuity in flowering, as if it could not do too much in the way of floral service.

No one need be under any concern as to propagating it; it is much easier to propagate than to get rid of. Hundreds of creeping fibrous roots push their way below the surface of the soil, and throw out germs at all points, which in a short space of time make plants, and so a single plant soon grows into a large tuft. In making a plantation, a good deep loam is preferable, and it should be deeply dug and manured. It is practically impossible to lift the roots with soil adhering to them, and so when a plantation is made, the plants flower but sparingly. By the next season they are fully established, and they will go on flowering for years. It is so hardy that the hardest frost will not injuriously affect them. The flower-stems should be cut away in winter, when they have quite died down, and if some mulching of dung and leaves, or fertilising

vegetable refuse, can be then added, it will prove advantageous.

In planting let it be remembered that the type grows from 2 to 2½ feet in height, but the varieties 3 to 3½ feet. They should, therefore, be planted further back in the border, and indeed the white makes a good background for the species. *R. D.*

TREES AND SHRUBS.

NEW VARIEGATED DOGWOOD.

Those who wish to have one of the finest of all golden variegated deciduous shrubs should make a note this planting season of *Cornus alba Spathii*, which is by a long way the best of the variegated Dogwoods, and has no rival among any of the golden-leaved shrubs. I have seen it for the past two seasons, and have noticed that it does not become discoloured during summer as some variegated shrubs do, and even in a dull sunless summer as the present, it shows no tendency to become greenish. It is now largely propagated in the chief tree nurseries, as it is sure to be much sought for when the public know what a good thing it is, but let us hope that it will not be planted so lavishly and inconsiderately as the variegated Maple and other too-popular variegated trees and shrubs that give to gardens, especially small ones, the "spottiness" that is not admirable. *W. G.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

CARROTS.—If the soil is of a wet nature, these roots should be taken up forthwith, and stored, excess of moisture at this season causing them to split. In sandy soils, such as the Carrot delights in, the Horn varieties may be pulled up, but on heavy ones some of the soil must be previously removed from them with a fork. The tops should be cut about an inch from the crown, and the soil adhering cleaned off. The roots keep fresh if they are put up into ridges of sand or fine coal-ashes in a cool place out-of-doors. The roots, which should not be bruised, may be packed in layers, with the crowns sticking outwards; when the ridge is finished, some straight straw should be laid over the sides of the ridge, to prevent the soil, which will be put over the heap when hard weather begins, from touching them. This covering of soil may be 6 inches thick; and, if the ridge is a long one, a few bunches of straw may be stuck into the top of it, to allow of the escape of moisture. In this way, Carrots will keep good till late in the spring.

BEEETROOTS should be very carefully lifted, and stored before hard frosts occur. The roots of moderate size are those best liked, but if the colour is good throughout, a large root is as good as a small one. The method of storing the crop, is to select the best shaped roots, of the finest dark colour, sorting them carefully, so as not to break or bruise any; and, on an out-of-the-way border, lay them in rows, which is best performed by taking out a trench deep enough to hold the roots comfortable in an upright position. The roots may be laid along the trench, at about one inch apart. One trench being filled, the next should be opened, and soil should be turned into the first, and so on, till the job is finished, keeping the rows about one foot apart. The roots may be kept about 2 inches below the ground-level. A layer of dry tree-leaves, 8 inches thick, should be put over the ground in frosty weather, with enough light litter to keep them from blowing away. The leaves of the plant ought not to be removed, and when they are taken to the kitchen, they should never be cut off close to the crown. Beet may be stacked like Carrots, using earth instead of sand, &c.

MUSHROOMS.—The present is a good time to make up beds in the open air. The place should be sheltered from the east and north-east winds, and well drained, and the stable-dung prepared as for beds in the Mushroom-house, excepting that, as these beds contain more manure than those, greater care is needed to prevent the bed getting over heated, which would spoil the spawn. The materials being in readiness, the beds may be

made up, 4 feet wide at the base and 3 feet high to the apex, putting it up in sections of 10 feet at a time, spreading the materials along that length in layers, beating them firmly, and when one section is finished, another may be begun, and when the bed is of the required height, the sides should be dressed off smoothly, and beaten with a fork. In showery weather, the beds must be covered with tarpaulins or canvas, at the same time giving plenty of ventilation, or overheating may occur. As soon as the heat of the beds has declined to 80° or 85°, break up some good fresh spawn into pieces about the size of an egg, and put it under the surface, at 8 inches apart, making the beds quite firm after the disturbance. At the same time, or in a day or two, the beds should be soiled to the thickness of 1½ inches, beating it down with a clean spade, and covering it with long litter, and protect from rain as before; and as soon as it is seen that there is no longer danger of too great warmth being set up, a covering of Oat or Barley straw may be put over all, varying it in thickness according to the weather, from 9 to 12 inches being not too much in cold weather. Tarpaulins can be used over the straw, the heat will then be better maintained, and there will be less risk of cooling down by snow or rain. Early in December on a mild day examine the beds for produce, and place a little fresh litter directly on the surface in place of that which will have decayed.

LETTUCE AND ENDIVE.—Where the consumption of Lettuces and Endives is constant and regular, a good stock of large plants should be placed in frames or pits. Take up the plants with a ball of earth attached, and plant carefully, and wide enough apart to allow for growth without crowding, and tread the soil firmly and evenly about them, which will in a measure reduce the quantity of moisture in the frames later on. Unless frost threaten, or during heavy rains, the lights need not be made use of for the next two or three weeks. During very bright sunshine a little shade may be needed for a few days. *C. J. Waite, Glenhurst, Esher.*

FRUITS UNDER GLASS.

ORCHARD HOUSE.—Now is a good time to examine the early fruiting kinds standing in pots top-dressing or repotting then as may be required. Where the plants have grown to their full size, and no more pot-room can be afforded, the ball should be made smaller, the large roots should be shortened, the small fibrous roots being retained, the old soil being picked out with a sharp-pointed stick, and the ball of earth remaining thoroughly moistened, if dry, previous to repotting. Hazel or pasture loam, mortar rubble broken fine, bone-meal, and some wood-ashes, form an excellent compost for fruit trees. A rammer should always be used when potting, as it is found that a loose soil does not produce the best results. Any plants having few roots should be treated differently, their roots being cut back to a healthy part, and rather smaller pots made use of than those they have occupied; but it is a matter of doubt if much is gained by retaining any tree which has got into an unhealthy state, young trees being purchasable at a cheap price, which, if liberally treated, soon make up the loss, especially if they are Peaches and Nectarines. For orchard-house work, and where the chief supply of fruit is obtained from pot trees, a reserve stock should always be kept, for the supplying of fruiters in pots. Trees, after the repotting, may be stood out-of-doors plunged to the rim in coal ashes or gravel, taking them indoors a week or two before starting them.

FIGS IN POTS.—These, if well ripened as regards the wood, and the embryo fruits are showing, should, when required for early forcing, have all those that are larger than horsebeans pulled off as being useless, and only those just pushing retained. Repotting into larger pots, if this be required by the plants, should be done, employing for the work a heavy kind of loam, and using the rammer freely. I do not advocate a too free use of manure for Figs, its tendency being to produce too much leafage, and too few fruits. Liquid-manure is better, as it can be afforded the trees when it is most wanted, which is not at first—a top-dressing of Thomson's Vine Manure may take its place. At Syon the latter is used largely when the fruits are at their final stage, and a good dressing is afforded the trees as soon as the first crop of Figs is past. When repotting and top-dressing are finished, very little water will suffice during the rest period; but dryness of the soil must be guarded against. Pruning should take place before the potting of

large trees which have outgrown their space, being reduced in size by the removal of the naked and unfruitful wood. If scale be troublesome, the present is a good time to clean the trees, and if they are badly infested, painting the old wood with clay, tobacco-water, soft-soap, and sulphur is a safe remedy, if the last two substances are not used too freely. Cuttings of the ripened wood may be secured if an increase in the number of any variety is required, the cuttings soon putting forth roots in the early spring if potted up at this date, and wintered in a fruit-house or pit. *G. Wythes, Syon House, Brentford.*

THE ORCHID HOUSES.

Nothing adds so much to the enjoyment of a collection of Orchids as perfect cleanliness in pots, stages, glass, &c. In the country, a thorough cleaning of these twice or thrice in a year will be found sufficient, but in smoky localities it is required much more frequently, especially the glass, for when that is semi-opaque, as it soon becomes, flowers become small, weak, and they open badly. But little shading will now be required, unless it be for *Phalenopsis*; but where whitening or "Summer Cloud" have been used on the glass, they may be washed off, the simple shading being now sufficient. *Calanthe Veitchii* and *C. vestita* will require thick shading during strong bursts of sunshine, or the foliage will quickly die away, not only spoiling the appearance of the plants, but the flower-spikes and flowers also. The foliage should not die down until the flowers are about half opened. Liquid manure, in the form of guano, should be continued. Many growers of *Calanthe* cut off the supply of water when the spikes begin to push out from the side of the pseudobulb, but that is a thing I never do until nearly all the flowers are opened. *Vandas* should be placed in such a position in the house that they may be easily shaded from the sun, especially the strong-growing species. These always flower freely without being roasted in full sunshine, and if they are allowed to get full sunshine, the dark green colour so indicative of well-doing is lost. *Vanda Sanderiana* is flowering well here. The plant seems to prefer any degree of warmth and much atmospheric moisture during the growing season, and but little water during rest, which usually lasts from November to March. I have seen it mentioned that *Vanda Hookeriana* is shy to flower—those who have followed my advice in their treatment will, I think, hardly endorse this dictum. We have been successful in having many scores of flower-spikes, several of which have had three, and in one case four flowers each; and many plants are flowering for the second time this year. In a former Calendar I have named the conditions under which our plants grow, and I may further add that they are all grown in a stove facing due south; the plants are thoroughly syringed twice a day in winter, and sometimes three and four times in summer. The drying-off of these plants is undoubtedly a great mistake. *A. G. Catt, Parkfield.*

THE FLOWER GARDEN.

THE FLOWER BEDS.—At no time during this season have the beds looked brighter, or shown to more advantage than during the past fortnight; the colouring of the several varieties of *Alternanthera* is now at its best, and the zonal *Pelargoniums* *Henry Jacoby*, *Tom Thumb*, *Christine*, and the variegated *Manglesi* are full and rounded masses of varied colour, which are well contrasted with adjacent beds of *Ageratum Tom Thumb* (mauve), *Lobelia pumila* (magnifica) and *Salvia patens* (blue), *Calceolaria amplexicaulis* and *floribunda* (yellow), &c. It is, therefore, sad to contemplate what a change the first few degrees of early frost will occasion. Bearing this in mind, many people have made due preparations, not only in raising in May and June last the necessary number of the kinds and varieties of winter and spring-flowering subjects wherewith to replace the summer-flowering plants, but in planting *Golden Queen* and *Blue Perfection*, or similar varieties of the *Viola*, between the plants of silver-leaved and golden-bronze *Pelargoniums*, occupying a due proportion of the flower-beds when filling the latter. The *Violas* are allowed to extend their growth in September, and when frost renders the removal of the *Pelargoniums*, &c., necessary, these are carefully pulled up, so as not to disturb the roots of the *Violas*, or otherwise interfere with their gay appearance, levelling the slightly-disturbed surface as the work is proceeded with. Thus arranged the plants continue to flower, more or less freely, during the autumn, winter, and spring months, the intervening beds being filled with plants of the dark (*Harbinger*

and golden (*Cloth of Gold*) *Wallflower*, *Myosotis dissitidora* (*Forget-me-Not*), *Arabis*, *Aubrietia deltoidea*, common *Primroses*, *Daffodils*, *Crocuses*, *Snowdrops*, *Saxifraga umbrosa* (*London Pride*), *Saponaria calabrica*, *Silene pendula compacta*, *Hyacinths*, and *Tulips*. The bulbs being deeply planted, remain in the ground from one year to another, and in addition to saving a considerable amount of labour (a fact never to be lost sight of) in taking up and replanting the bulbs, as is practised in some places, they flower all the better by being treated in the manner indicated.

CLEARING THE BEDS.—As soon as there has been frost enough to destroy the beauty of *Heliotropes* and *Dahlias*, the removal of any plants of *Pelargoniums*, &c., which it is desired to save in some quantity should be carried out, taking up the plants, if the ground should be firm, with the assistance of a five-tined fork, so as to preserve some of the roots; these, with the top-growth, should be trimmed when taken to the potting-shed for potting. As fast as the plants are removed, dig the beds lightly, planting them with the various subjects of winter display. *Arabis* and *Aubrietias* may be planted almost close together, if plants are plentiful. Other plants need more space, from 1 foot to half a foot, according to habit and the amount of growth that they usually make. *Variegated* and *Golden Thyme* may be turned to good account in the beds, also *dwarf Lanarustus*, *Box*, *Golden Yews*, and such-like, if they can be planted, on a ground-work of *Cerastium*, *Sedum*, or *Pyrethrum*. *Periwinkles* intermixed with variegated *Ivy* also show to advantage. In the case of the carpet beds, we simply clear away all the tender plants as soon as nipped by frost, and level the soil. If the weather is dry at the time of setting the plants in the beds, water should be afforded to settle the soil about them. *H. W. Ward, Longford Castle, Salisbury.*

THE HARDY FRUIT GARDEN.

ROOT-PRUNING—It is quite time that note be taken of unfruitful trees intended to be root-pruned or lifted, when the time comes for such work. Proper materials should be got in readiness, so that there shall be no delay when once the work is begun. Most fruit trees may be root-pruned or transplanted at almost any age or size, although in the case of large or very old trees, it is better to do the work piecemeal, instead of all at one time. The best time for praning the roots of trees is towards the end of the month of October and during November, the soil being then still warm, and wounds on the roots are soon healed over, and the fibrous ones make a little fresh growth, the trees breaking into growth without any apparent check the following spring. It should also be at once decided what amount of new planting shall be done, and a selection made of the different fruits. If the planter is in doubt about any of the novelties, the present is the best time to visit a nursery, and see the trees in bearing.

BORDERS FOR PEACHES AND NECTARINES.—Those intending to plant *Peaches* and *Nectarines* on newly-erected walls, should shortly begin the preparation of the borders. The wall should not be lime-washed, as doing this prevents the heat penetrating the bricks, and a whitewashed wall is never so warm as one that is left of its natural colour. The border should consist at the bottom of plenty of materials, more or less according to the condition of the subsoil, and it is usually better for the trees if the border be raised several inches above the surrounding level, except the soil be light and overlies gravel; but where the climate is good for *Peach*-growing, it may be made on the level. As a beginning, a width of 4 feet will be ample, 2 or more feet of new soil being added to its width two years afterwards, or when the roots reach this distance, if the staple is unsuitable. Good pasture loam, with a fair sprinkling of mortar-rubble, wood-ashes, or burnt earth, and some bones broken small, well mixed, and made very firm, is a very suitable compost for the *Peach*. At *Mereworth*, *Peaches* and *Nectarines* thrive admirably in yellow marl, which has little or no fibre in it; to this some half-decayed manure is added, and the growth, although it is strong, usually ripens well, and produces fine dark-coloured *Nectarines*, and *Peaches* of good size, &c. *Filberts*, *Pears*, and *Apples* also succeed in this kind of soil.

Figs will require to have, when they are crowded, the spongy shoots cut away close to the point from which they have sprung, and the others, the hardier and better ripened, neatly secured to the walls. *Young Figs* will not ripen, and should be pulled off,

the embryo fruits at the extremities of the young shoots furnishing the fruits of next year. *Brown Turkey* and *Brunswick* are good useful *Figs* to plant, being excellent croppers, very hardy, and nice-eating fruits. *Fig* trees which may be growing with too much vigour should be lifted, or root-pruned, or the border restricted. Do not let manure come near the roots of too luxuriant *Figs*. *H. Markham, Mereworth Castle, Maidstone.*

PLANTS UNDER GLASS.

SHOW AND FANCY PELARGONIUMS.—The plants which were cut back after blooming will have broken well, if the proper treatment has been observed; and they should be shaken out of the old soil and repotted, before the young shoots have grown much, in turfy loam (three parts), decayed manure (one part), a 60-potful of soot to one peck of soil, and a fair proportion of sharp sand to keep the whole porous. Employ smaller pots for this shift than those they have been growing in, affording them another shift at a later date; slightly water them, letting the water drain away. Place in a greenhouse or light dry pit, and syringe the tops lightly in bright weather. The plants will require little more water until the roots commence to run through the fresh soil; but fumigation with tobacco or its preparations should be resorted to at short intervals, to keep greenfly in check.

ZONAL PELARGONIUMS.—Plants which are intended to bloom in the winter should now be placed in their flowering quarters, and not left out any longer in cold frames, there being great risk of the flower-trusses getting damaged there by damp. The best position to flower these plants during the winter is a low, narrow span-roofed house, running east and west, the plants will then get all the sunlight obtainable. Avoid crowding, and examine each plant before water is given it by tapping with the fingers, or otherwise examining them. The temperature may range from 50° to 60°, in accordance with the temperature outside. Admit air on all favourable occasions, and when the pots are well filled with roots, occasionally apply a fertiliser in a clear condition, alternating these waterings.

POT ROSES.—These should now be examined, and repotting done where it is required, but such as occupy pots sufficiently large, the soil in good condition, and the drainage perfect, no repotting will be needed, only frequent applications of clear manure-water. A good compost for pot *Roses* consists of a heavy fibrous loam, a sprinkling of bone-dust, and sufficient sharp sand to keep the mass open and allow the proper percolation of water; but where the loam is very heavy, it will be advisable to add one-sixth part of leaf-mould to the rest. The foliage should be kept clean and healthy, for should it drop too soon, the buds will be immature, and the flowers not of the best quality. *Tea Roses* which were forced in the spring will be found now to have a quantity of flower-buds set, and these, by placing the plants in a cool house, will expand freely, and be found very useful in the late autumn.

SOLANUMS which were planted out in the open should now be lifted and placed in suitable pots, preserving as many of the roots as possible, afterwards placing the plants in a cold frame, dewing them over with the syringe, and shading them from bright sunshine until the roots push forth into the new soil.

CARNATIONS.—All plants in pots should be brought under glass forthwith, or mildew may make its appearance on them. Place them in a light, airy house or pit, keeping them well up to the glass.

CALLAS—The earlier batch of these, which have been growing in pots during the summer, should now be taken indoors, and placed in a light position, affording them a plentiful supply of water at the roots, and an occasional dose of liquid-manure. In the case of plants which have been grown out in the open in prepared beds, these will have made strong growths, and may now be lifted, preserving as many roots as possible, afterwards placing them in a pit or cool-house, syringing them daily, and affording shading until they are established.

MISCELLANEOUS—By placing *Schizostylis coccinea*, in a house where there is a little warmth, it will furnish a quantity of blooms late in the year. *Deutzias*, *Lilacs*, especially *Charles X.* and *virginalis*, *Staphylea colchica*, *Kalmias*, *Hydrangea paniculata*, *Azalea mollis*, *Helleborus niger*, *H. angustifolius*, and *Miss Hope* variety, and other kinds of roots and shrubs, which are used in forcing, should be lifted early, as they then receive a check, which tends to early and free blooming. After potting, plunge them in the open, in *Cocoa-nut* fibre, or coal ashes. *R. Milner, Penrice Castle Gardens, Swansea.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

FRIDAY, OCT. 2 } Dundee Horticultural Association meets.
SATURDAY, OCT. 3 } Preston and Fulwood Society meets.

SALES.

MONDAY, SEPT. 28 } Dutch Bulbs at Protheroe & Morris' Rooms.
The Lease, Stock, &c., at the Peacock Nursery, Hammersmith, by Protheroe & Morris.
Dutch Bulbs, at Stevens' Rooms.
TUESDAY, SEPT. 29 } Clearance Sale of Stove and Greenhouse Plants, at The Mile Ash Nurseries, by Protheroe & Morris (two days).
Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY, SEPT. 30 } Dutch Bulbs, Azaleas, and other Plants, at Protheroe & Morris' Rooms.
Great Sale of Nursery Stock, at the celebrated Bagshot Nurseries, by Protheroe & Morris (three days).
Dutch Bulbs, at Stevens' Rooms.
THURSDAY, OCT. 1 } Nursery Stock, at the Chilwell Nurseries, Notts., by Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Imported Orchids, &c., at Stevens' Rooms.
FRIDAY, OCT. 2 } Important Sale of Orchids, at Protheroe & Morris' Rooms.
SATURDAY, OCT. 3 } Dutch Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—54°·9.

"A FELLOW-FEELING makes us wondrous kind." Was it some such feeling as this, we wonder, which sufficed to fill the auditorium at the Drill Hall on Tuesday last? Was it the blood-thirstiness of which our French friends accuse us? Was it a faint reflex of the interest excited quite lately by the exploits of the fasting man a few hundred yards distant? Whatever the cause might be, there is no doubt that a much larger audience than any we have seen before attended to hear Mr. LINDSAY'S lecture at the Royal Horticultural Society on Tuesday last. There were some disappointments over the business. We will confront them, and get them out of the way as soon as possible. First: Mr. LINDSAY was not present. His paper was so good and so comprehensive, botanically and culturally, that we can but regret he was not present to read it and receive the tribute due to him. Next, Mr. CASTLE not only obliged to absent himself, but left no trace behind in the shape of a paper. But in the eyes of the public—we mean the public not the initiate—the greatest deficiency of all was in illustration. If it had not been for a small collection shown by Messrs. VEITCH, the carnivorous among plants would not have been specially represented at all. When we remember how well these plants are shown by Mr. BULL, Mr. WILLIAMS, and others at ordinary shows when carnivora are not supposed to be to the fore, and when we call to mind the splendid collections at Glasnevin, Kew, and Edinburgh, we can but regret the *coup manqué*

that was played by the Royal Horticultural Society on this occasion, and still more that the exhibitors lost so good a chance. Could the authorities have foreseen that the subject would have "drawn" as it did, they would surely have exerted themselves more fully to secure an adequate representation. As it is, we saw, not only a great crowd of mere curiosity-seekers, and not a few irate sight-seers, but a distinct infusion of persons high in the world of science who had been attracted by the announcements and *communiqués* in the press. And the disappointment experienced was proportionate.

No such feeling could be felt in the case of Mr. LINDSAY'S paper, which, though only read in abstract, was recognised to be an admirable summary of our knowledge on the subject. Laughed at at one time, contested at another, the general facts are now known to be beyond dispute. Digestion of organic matter is not, as once supposed, confined to animals, but is shared by plants. A seed cannot germinate, nor an embryo root push its way from its starting point in the interior of the main root to the surface without the agency of a fermentative and digestive process such as the leaves of the *Droseras* manifest. But though the facts themselves are now the supporters and vindicators of a general theory, there are yet points of detail which are still open to question—still matters of hypothesis rather than of theory. Our French friends, for instance, attribute all the phenomena witnessed to the agency of bacteria.

The bacteria, as we know, excite fermentation, and are invariable accompaniments of putrefaction. They render soluble and efficient the insoluble and inert nitrogenous matters in the soil, they afford the Leguminosæ with a special means of obtaining nitrogen. The bacteria are sure to be present when any putrefactive action is going on, and no doubt they contribute their share to the general turmoil of the elements that is going on under such circumstances. Keep the bacteria away, and the phenomena witnessed by every experimenter heretofore will, doubtless not be observed.

Admitting all this, we do not see that the digestive process in plants can be denied, even if it be also admitted that Bacteria have their share in the work. On the contrary. "But," say the cultivators, "the plants derive no benefit from catching flies; rather are they damaged and caused to rot." Well, perhaps they are, in part; the fly-trap rots, but not before it has yielded up to the plant the nitrogenous matters it needs. Besides, in cultivation, the requirements of the plants are more efficiently secured than they would be in nature, and we know that while under natural conditions the roots of these plants are relatively small, under cultivation they become largely developed. Again, in Nature, the aim is to secure perfectly-formed seed, in which process chemical changes of complex character and stores of food are required. Under cultivation, the object is to produce good foliage and big pitchers—quite a different state of affairs. On the whole, then, we do not think the theory of the so-called carnivorous tendencies of plants are at all invalidated by the more recent researches to which we have on various occasions called attention, particularly as experimental research, not mere eye observation, has proved that the plants do benefit very materially from the administration of nitrogen in some form or another, and that if this be withheld the benefits do not accrue. Our illustrations this week are devoted to these so-called carnivorous plants, and show, at p. 361, the glandular apparatus by which

the pepsinous matter is secreted, which effects the solution of the organic matter in *Drosera*, as well as several illustrations of species of *Drosera*, *Roridula*, *Pinguicula*, &c.

Conifer Conferences, &c.

THE next event of the season in the horticultural world of London will be the Exhibitions and Conferences to be held at Chiswick next month. The following is the programme issued:—

An exhibition of Asters, Sunflowers, and Conifera will be held at Chiswick Gardens, on October 6, 7, and 8, 1891.

On October 6, 1891, a Conference will be held at 2 P.M., on Asters (*Michaelmas Daisies*) and Perennial Sunflowers, and the following papers will be read:—1. Opening Address, by Mr. J. G. Baker, F.R.S., &c., Chairman. 2. "The Genus *Aster*," by Professor G. L. Goodale, Director of the Botanic Gardens, Harvard University, U.S.A. 3. "*Michaelmas Daisies*," by the Rev. C. Wolley-Dod, M.A. 4. "Perennial Sunflowers," by Mr. D. Dewar. 5. "Culture of Sunflowers," by Mr. E. H. Jenkins.

On October 7, 1891, a Conference will be held at 2 P.M., on Cone-bearing Trees and Shrubs. Papers to be read:—1. "Opening Address on some Special Features of Interest in the Order of Conifera," by Dr. Maxwell T. Masters, F.R.S., &c., Chairman. 2. "Japanese, Chinese, and Californian Conifera," by Mr. H. J. Veitch, F.L.S., &c. 3. "Conifera as Specimen Trees and for Landscape Gardening," by Mr. G. Nicholson, A.L.S. 4. "Conifers for Timber and in Plantations," by Mr. A. D. Webster. 5. "The Decorative Character of Conifera," by Mr. Edmund J. Baillie, F.L.S. 6. "Conifera at Bicton, Devon," by the Hon. Mark Rolle. 7. "Conifers at Dropmore," by Mr. C. Herring.

On October 8, 1891, the Conifer Conference will be resumed at 2 P.M. Papers to be read:—1. Opening Address, by Professor Bayley Balfour, M.A., F.R.S., &c., Chairman. 2. "The Value in the British Islands of Introduced Conifers," by Mr. Malcolm Dunn, F.R.H.S. 3. "The Quality of Coniferous Timber as Affected by Sylvicultural Treatment," by Dr. Wm. Somerville. 4. "The Timber of Exotic Conifers Grown in Scotland: its Uses and Comparative Value," by Mr. D. F. Mackenzie. 5. "Fungoid and other Diseases of Conifers," by Professor Marshall Ward, M.A., F.L.S. 6. "Insects Injurious to Conifera," by Mr. W. F. H. Blandford, M.A.

Fellows of the Society are particularly invited to assist in making the Exhibition a great success, either by contributing specimens of Asters (*i.e.*, *Michaelmas Daisies*), Sunflowers, or of Conifera themselves, or by inducing others to do so.

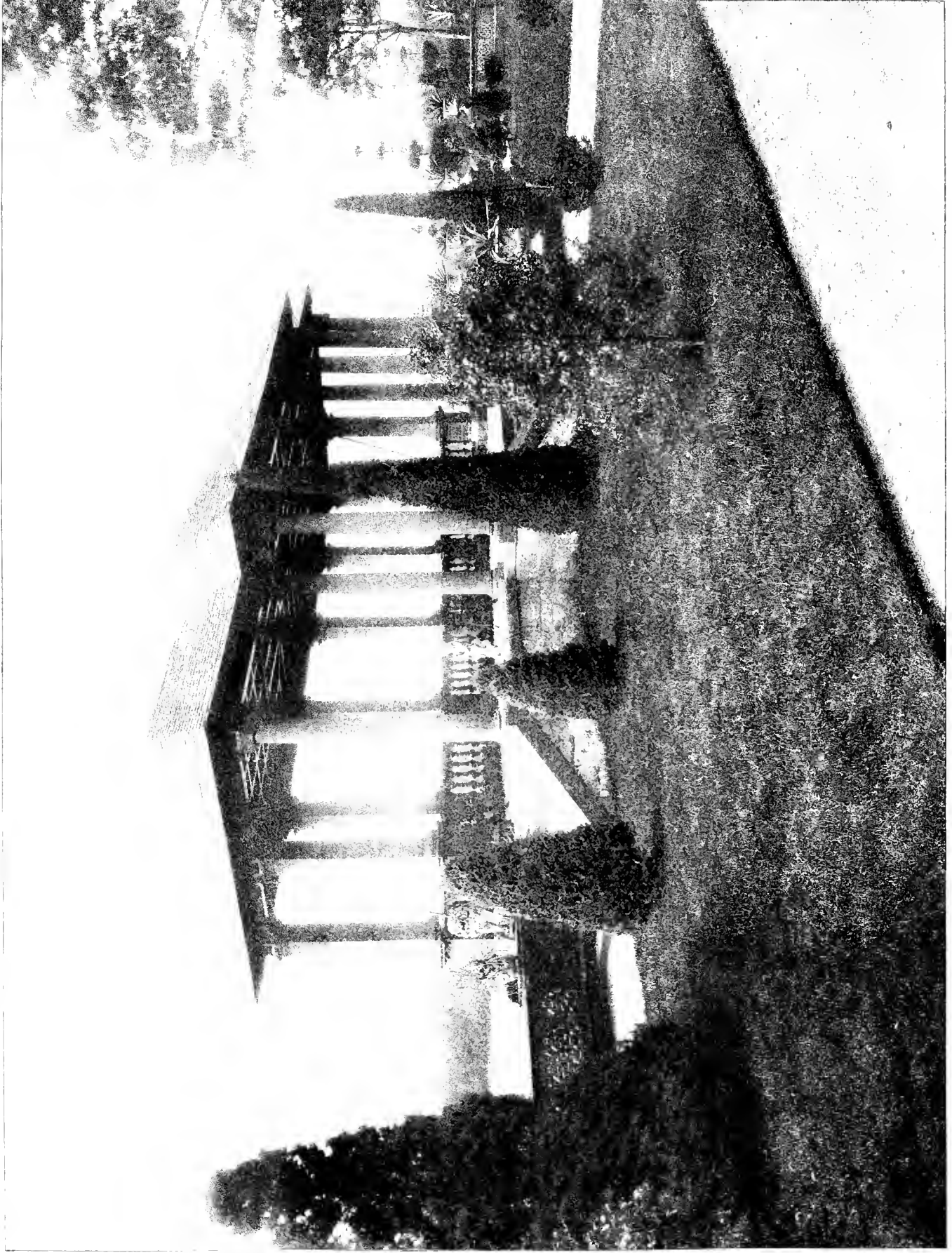
Intending exhibitors may now obtain schedules and latest particulars of prizes offered, &c., at the Society's Offices, 117, Victoria Street, S.W.

In addition to the prizes offered in the schedule, awards will also be made to Coniferous plants plunged in banks or beds of cocoa-nut fibre. The fibre will be provided in the gardens.

Drawings or paintings in black and white, water or oil colours, &c., and any literature relating to Conifers will be much appreciated in connection with the Conference and Exhibition.

Prizes, if may be added, are offered for bunches of hardy perennials, Asters, and Sunflowers, to be competed for by amateurs exclusively; while for a collection of fresh cones with branches and foliage, the Veitch Memorial Medal and £5 are offered, also to amateurs.

It is greatly to be desired that planter and tree-lovers will take part in the proceedings; or, if that be not practicable, that they will send specimens of all kinds, and details relating to the rate of growth of various Conifers, their value for particular purposes, and their suitability to particular soils. In this way a great body of information may be got together, at present not readily accessible.



PAVILION IN THE GARDEN OF H. H. HUNNEWELL, ESQ., WELLESLEY, MASSACHUSETTS.

WELLESLEY, MASSACHUSETTS.—On various occasions we have given illustrations of this, one of the finest, if not the finest, garden in America. We now add another, showing a pavilion, overlooking the lake, and affording the luxuries of coolness and shade. The architectural features are simple but effective, while the clipped shrubs, generally to be deprecated, are in harmony with the vertical lines of the pillars. (See Supplementary Illustration.)

CATTLEYA LABIATA, TRUE AUTUMN-FLOWERING.—At the sale of Messrs. F. SANDER & Co.'s fine importation of this much-coveted species, on Friday, September 18, a refreshing revival, after the lull which always ensues during the holiday season, took place. The bidding was very spirited, and the amount realised for this *Cattleya* was £800. Not a single plant was left unsold, and many would-be buyers had to go away unsatisfied. We understand, however, that their wants will be supplied by a further consignment in grand order, which will be sold at Messrs. PROTHORPE & MORRIS' Rooms, 67 and 68, Cheapside, on Friday, October 2.

THE ROYAL HORTICULTURAL SOCIETY.—The new number of the *Journal of the Royal Horticultural Society* contains, besides extracts of proceedings, a number of interesting papers. Mr. W. WARREN writes on "Persian Cyclamen"; the Rev. W. WILKS on "Hardy Cyclamen"; Dr. M. T. MASTERS, F.R.S., on "Germination of Cyclamen." "Snowdrops," form the subject of papers by Mr. J. ALLEN, Mr. D. MELVILLE, and Mr. F. W. BURRIDGE. There are also papers on the "Cultivation of Hardy Bulbs and Plants," by Herr MAX LEICHTLIN; "Lachenalias," by Mr. F. W. MOORE; "Cape Bulbs," by Mr. J. O'BRIEN; and "Hybrid Rhododendrons," by Professor HENSLOW.

THE ROYAL HORTICULTURAL SOCIETY OF IRELAND.—A special council meeting of this society was held at the office, 189, Great Brunswick Street, on September 14. The following members of council were present: Sir Percy R. Grace, Bart., D.L., in the chair; Mr. H. Cusack, Mr. C. Strong King, J.P.; and Mr. Hamilton Drummond, Hon. Secretary. The secretary was instructed to obtain information regarding premises available for permanent buildings for the Society. Many annual members of the society were elected.

THE CLIMATIC CONDITIONS FOR THE DEVELOPMENT OF NICOTINE IN TOBACCO PLANTS.—It has been pointed out by Mr. A. MAYER that by the use of a rich and easily assimilated nitrogenous manure, the percentage of nicotine in Tobacco plants is increased. He has now been examining into the influence of climatic conditions—*e.g.*, heat, water, light, and the moistness of the air. Plants grown under glass contained in some cases double the percentage of nicotine found in those plants grown in the open, and consequently at a lower temperature; and in those plants grown under shelter a higher temperature corresponded with a higher percentage of nicotine. Full lighting was also accompanied by an increase in the nicotine contained in the plants—an increase which rose as high as 100 per cent. of that contained in plants from which the light was partly cut off. A small supply of water seems to be the most beneficial to full development, and an excess of water is inimical. By increasing the moisture of the atmosphere surrounding the plant, transpiration is diminished, and this leads to an increase in the amount of nicotine.

"HANDBOOK OF THE DESTRUCTIVE INSECTS OF VICTORIA"—Mr. C. FRENCH, the government entomologist of the colony of Victoria, has published the first part of a useful little book on the insects injurious to fruit trees in Victoria, and on "the methods to be adopted to check and extirpate them." Coloured plates of the American blight, the Codlin moth, the Apple-borer, the Apple bark-scale, the red spider, the Pear slug, the Pear mite, and other insects are given. The author fully acknowledges his indebtedness to the works of WESTWOOD, RILEY,

ORMEROD, MURRAY, and others, and has done his work conscientiously and well.

ORCHID-GROWING IN ENGLAND.—M. LUCIEN LINDEN, whose remarks on Orchid-growing in this country we alluded to on a former occasion, reverts to the subject in the last number of the *Journal des Orchidées*, wherein he asserts that his remarks applied more particularly to London and its vicinity. In future numbers, he is to tell us his opinion of the Royal Gardens, Kew, and of certain Orchid collections round Manchester.

"BOTANICAL MAGAZINE."—The plants figured in the September number are:—

Heritiera macrophylla, t. 7192—the looking-glass tree of India, by some supposed to be a large-leaved variety of the *H. littoralis*. There has been a fine specimen of the tree in the Palm-house at Kew for many years.

Tulipa Sintenesii, t. 7193.—This is the new species described by Mr. BAKER in our columns, 1891, vol. i., p. 330. Kew.

Citrus Aurantium, var. *Bergamia*.—The Bergamot Orange, t. 7194, a variety of the common Orange cultivated in Calabria for its oil. The specimen figured came from the garden of T. HANBURY, of La Mortola.

Impatiens mirabilis, t. 7195.—A remarkable species with an erect stem 4 feet high, and as thick as a man's leg, crowned with a tuft of many large, long-petioled, fleshy, spreading leaves nearly 1 foot long; and from the axils of which spring erect racemes of large yellow flowers. The plant came from Messrs. VEITCH, and is supposed to have come from the Island of Langkawi, off the east coast of Sumatra.

Phalenopsis Esmeralda, t. 7196.—Sir J. HOOKER includes under this species *P. antennifera*, *P. Ragnieriana*, and *P. Buyssoniana*.

HONG KONG—The *Annual Report of the Botanical Department* contains a notice concerning the origin of the Chinese preserved Ginger, which was lately attributed to *Alpinia Galanga*. Mr. FORD, however, holds to the opinion that it consists of the rhizomes of the true Ginger, *Zingiber officinale*, which is largely cultivated by the Chinese. About half a million of trees have been planted in the island, principally *Pinus Massoniana* (*sinensis*).

A NATURAL HYBRID CYPRIPIEDUM.—M. BARBEY has described and figured a hybrid between *C. calceolus* and *C. macranthum*. It appears that in Siberia the two species grow together. M. BOISSIER obtained from Siberia what were supposed to be roots of *C. macranthum*, but which produced flowers intermediate in character between those of the two species named. A comparative description of the two parents, and of the hybrid, accompanied by a coloured plate, is given.

FOREST OF BOX.—Near Antkjel may be seen the remains of an old Box-tree forest. This tree is now rare even in the Caucasus; a wood containing about 20,000 trees, ranging up to 2 feet in diameter, still stands at a higher elevation near Bship, but has recently been purchased by an English company for nearly one million dollars. A Box forest, says Dr. DIECK, in *Garden and Forest*, is the genuine forest of the fairy tales. "No soul can be so dull as not to feel its influence. Hardly a ray of sun can penetrate its thick roof of foliage; perpetual twilight and solemn silence reign within it. All the trunks, all the knotted branches, all the twigs are thickly covered with long trails of moss, while the dark soil beneath bears only a rare tuft of Ferns or group of shrinking fungi. No bird's voice is heard, no insect whirs through the air; only the rustling of the tree-tops and the moaning of the wind-twisted boughs breaks the church-yard stillness of this ghostly wood."

ARAUCARIA EXCELSA.—This neat and favourite plant for indoor decoration has long been extensively cultivated in Belgian and French nurseries,

and in a less degree in England also. Recognising its merits, Messrs. HUGH LOW & Co. have worked up a large stock, almost filling two long houses. The plants range from the young plant only a few inches in height, to the large specimen, but all are of perfect form, and, being evergreen, are available for use all the year round. It is not generally known that *Araucaria excelsa* is one of the very best plants for permanent use in the dwelling-house, and carefully tended, it thrives well even in the London smoke.

LILIUM WALLICHIANUM SUPERBUM.—Many plants of this grand creamy-white and yellow Lily grown under glass at Messrs. HUGH LOW & Co.'s nurseries at Clapton, display its beauty, but with these, as with most of this species which we see exhibited, the flowers are borne on very tall stems in consequence of their being forced, and the plant has acquired an unmerited character of being of ungainly habit. A large bed of it in the open ground at Clapton, and on which the buds are well advanced, shows it in its natural growth, its stature being 2 feet to 2 feet 6 inches—not an inch too tall to arrange well with the very large blooms borne on this Lily.

THE INFLUENCE OF SALT ON THE FOOD-RESERVES OF PLANTS.—The influence of salt on the quantity of starch contained in the vegetating organs of *Lepidium sativum* has been recently studied by Mons. P. LESAGE. He watered the plants with solutions containing from 1 to 25 grammes of salt per litre, and in the second series of experiments he employed sea-water in strength ranging from 4 to 100 per cent. With from 12 to 15 grammes of salt per litre, the starch disappeared completely from every part of the plant; but this disappearance of food-reserves is not directly proportional to the quantity of salt present in the water. In both series of experiments there was a minimum of salt in the leaves and roots when the plants were treated with water containing 1.66 grammes of salt per litre, or 67 per cent. of sea-water. Curiously enough, when stronger solutions of salt were used in watering the plants, the quantity of starch again increased until, when from 12 to 15 grammes was reached, the amount of starch, as already stated, disappeared altogether. It is not improbable that the real maximum is obtained by watering with solutions which contain a quantity of salt between 0.1 and 1.66 grammes per litre.

PALERMO BOTANIC GARDEN.—Professor, the Baron TODARO has lately issued another part of his illustrated folio record of interesting plants which flower in the Palermo Botanic Garden. The plants illustrated are *Aloe Rossi*, an ornamental species from Madagascar, with tufted fleshy, arcuate ovate-lanceolate leaves shortly and remotely toothed at the margin, and with a pyramidal raceme of nodding red and yellow flowers. *Aloe Lanzæ* has linear lanceolate leaves, with whitish blotches and deltoid marginal teeth. The inflorescence is more elongate and less pyramidal than in the first-named species.

THE DESTRUCTION OF SLUGS.—A recent number of *Cosmos*, referring to the slugs which, it states, are this year a veritable plague in the kitchen gardens in France, says, of all the hundred-and-one remedies which have been proposed to reduce these pests, none is so good as the "toad." The French gardeners used to kill the toad whenever they had the chance, as they had the mistaken and vulgar notion that they were harmful; they will now gladly pay a sou each for toads. In some districts, where toads are scarce, the gardeners are giving as much as three francs (half-a-crown) a dozen for these useful scavengers.

SYDNEY.—The *Agricultural Gazette of New South Wales* is publishing a series of illustrated articles on the grasses of New South Wales by Mr. TURNER, who also contributes articles on the weeds of New South Wales, and on new commercial crops (Liquorice, Manila, and Hemp). Various entomological articles are also contributed.

COUNTY COUNCILS AND TECHNICAL INSTRUCTION.—The Technical Instruction Committee of the County Councils have recognised the principle that the instruction to be provided shall be suited to the needs, and adapted to the industries, as far as possible, of the town or village concerned; thus, for example, in urban districts, such subjects are suggested as mechanics, building construction, steam, electricity, chemistry of common life, laws of health, &c.; and in rural districts, horticulture, agriculture, including bee-keeping, butter-making, &c. In Surrey, a syllabus has been printed of proposed horticultural lectures as follows:—1. Advantages of allotments and high culture of the land, (a) outline of general principles, (b) routine and results, (c) practical education. 2. The soil: its nature, preparation, and improvement, (a) erroneous and correct procedure, (b) implements and their uses, (c) essential parts of plants, flowers, fruit, seed, leaves, and roots. 3. Raising crops, plants, and trees, (a) from seeds, (b) by cuttings and layers, (c) preliminary remarks on budding and grafting. 4. The food of crops, and its influence on productiveness, (a) manures, their nature and application; (b) thinning, sustaining, and supporting crops; (c) rudimentary pruning. 5. Enemies of crops and trees, (a) weeds, (b) insects: grubs, their ravages, prevention, and extirpation; (c) advanced stage in budding, (d) grafting and pruning. 6. Planting vegetables and fruits, (a) mistakes pointed out, and correct methods described; (b) cultivation in the early stages of growth; (c) use and abuse of water and liquid manure. 7. Encouragement and endeavour, (a) prizes for gardens, and how to raise them; (b) exhibiting, (c) standards of excellence in vegetables, fruit and flowers; (d) judging. 8. Profitable crops, and how to produce them; (a) green crops, (b) small fruits, (c) advanced stages in culture and pruning. 9. Root crops and fruit trees, (a) cost and value, (b) qualities and varieties, (c) superior cultivation in gardens and fields. 10. Constituents of vegetables and fruits, (a) nutritive properties and uses, (b) aids to maturation, (c) summer-pruning, (d) root-pruning. 11. The preservation and disposal of garden produce, (a) fruits, vegetables, and flowers; (b) gathering and packing; (c) storing, (d) marketing. 12. High ideals in gardening, and how to attain them: (a) England to be the garden of the world, (b) its people, who work on the land, masters in the art of cultivation; (c) bright, full gardens, and happy homes!

PALMS, ETC., OUT-OF-DOORS AT PROSPECT HOUSE WOODFORD GREEN.—Palms and Cycads, &c., have been used during the summer with much effect at this place. The undulating grounds quite lend themselves to this form of decoration. Being sheltered as well, the gales of a week or so since did them little or no damage. Fine examples of *Chamærops robusta*, *Seaforthia elegans*, *Latania borbonica*, *Phoenix compacta*, *Cycas revoluta*, *Zamia*, and an *Aloe variegata*, some 15 feet high, arranged in commanding positions, give quite a tropical appearance to the garden, enhanced as it is with effective clumps, here and there, of *Acanthus latifolius*, *Caladium esculentum*, and *Cannas rubra* and *Gibsoni*. The variegated *Coltsfoot* has been used as a foreground to the *Cannas*, a position for which it seems well adapted, and *Castor Oil* plants look well placed singly about on the grass.

SOCIETY OF AMERICAN FLORISTS.—The next meeting will be held at Washington in 1892.

MR. CHAS. WHITEHEAD.—Our readers will hear with regret that Mr. C. WHITEHEAD, of fruit-growing fame, is suffering from the effects of sunstroke, but his illness is not considered to be of a dangerous character.

STOCK-TAKING: AUGUST.—The Board of Trade Returns for the month of August are of a very interesting character, and indicate a rise in the imports as compared with August last year, amounting to £1,423,382. Of course, articles of food figure largely, but the increase is distributed over some

half dozen other sections. As the Flax crop in Italy is reported to be a very favourable one, doubtless our Belfast and Dundee friends are looking it up. The following is extracted from the monthly summary of imports of foreign and colonial productions for the month compared with last year, and showing the difference:—

	1890.	1891.	Difference.
	£.	£.	£.
Total value for month	£31,422,897	£32,746,279	+1,423,382
§II.—(A.) Articles of food and drink—duty free	11,187,665	11,799,508	+611,843
(B.)—do., dutiable	1,998,108	2,113,185	+115,077
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)... ..	3,011,132	2,957,157	-53,975
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,137,800	4,436,652	+298,852
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	969,110	1,122,179	+153,069
(B.)—Parcel Post ...	32,106	38,781	+6,675

It may here be suggested that from one of our colonies at least a much larger supply of cereals ought to be forthcoming—we refer to Canada. The recently published results of the census taken in the Dominion this year are not at all satisfactory. There would appear to be a steady stream of emigration to Canada from the United Kingdom, and that the larger part of it makes for the United States as soon as possible. The agricultural population does not increase as it ought to do, and there is a tendency to flock from the field to the town. How much the Government—the conditions of existence—are to blame for this state of things we have not the space to dilate upon; but the fact remains, that the population is not what it ought to be by over a million (so it has been contended), and we do not receive from Canada the amount of food-produce which even under present circumstances she ought to produce and export. As was remarked in our pages a year or two since, we seem to be doing our best to educate young persons in order that the United States may reap the benefit of the education. A falling off of some 9 per cent. in the values of exports of British and Irish products has to be noticed; the decrease is exactly £2,147,120. Of course, this is greatly to be regretted—but there is peace in Chili, and "Brag" on the Continent has ended in a new Russian loan! So, possibly, there may be a better record for September. The figures in the following little table speak for themselves—they relate to the—

Imports of Fruit, Vegetables, &c., for August.

	1890.	1891.	Difference.
§II. Fruit:—			
Apples, raw bush.	138,270	116,763	-19,507
Unenumerated, raw "	675,893	975,137	+299,244
Onions "	339,219	261,009	-78,210
Potatoes cwt.	17,098	41,716	+24,618
Vegetables, raw, unenumerated value	£97,031	108,928	+11,897

In the matter of Potatoes, the London market record shows a range in prices from 46s. to 106s. per ton. A difference of 60s. is not to be altogether accounted for on the ground of quality; the untoward season and the fear of disease doubtless have had very much to do with the great range. Possibly first-class Potatoes have not been so cheap in the metropolis for years. The weather during the past month has been terribly trying for all kinds of crops—fruits, roots, and cereals alike; but agricultural conditions are slowly but surely altering in Great Britain. From a summary of the Agricultural Returns for 1891, issued the other day by the Board of Agriculture, it appears that there is but a slight increase

this year of land under cultivation, compared with 1890; the only noticeable increase is in Hops—the average here has risen just over 4 per cent., though still 2 per cent. under the acreage of 1889. The acreage under Potatoes has increased only 0.6 per cent., and the land under Barley has increased only 1600 acres, or less than a tenth per cent. on last year's acreage. The quantity of land under Wheat is still diminishing; in 1889, there were nearly 2,500,000 acres of Wheat—last year over 2,386,000 acres, but this year only a little over 2,307,000 acres. On the other hand it is to be noted that our wealth in cattle, sheep, and pigs, calculated in numbers at least, has uniformly increased. In Great Britain there are nearly 7 million head of cattle, 29 million sheep and lambs, and nearly 3 million pigs. This shows an increase of nearly 5 per cent. on 1890, and over 13 per cent. on 1889. The Board of Trade Returns month by month bear witness to the fact that we are becoming more and more reliant upon ourselves for live animals, which constitute a section by themselves.

ROYAL PRESENTATION TO MR. T. JONES.—We learn that the Queen has presented a silver tea service to Mr. JONES, Her Majesty's Head Gardener at Frogmore, on his relinquishing that post.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner and gathering of members and supporters takes place at the Cannon Street Hotel, on October 15. Mr. G. A. Dickson, of Chester, and ex-Mayor, will be in the Chair.

SEAFORTHIA ELEGANS.—Mr. POLSON obligingly sends us a photograph of a fine plant of *Seaforthia elegans*, which has produced its flowers in his conservatory near Paisley. The tree is about 20 feet in height, with a diameter of 12 inches at the base. We may take another opportunity of alluding to the matter.

VANDA CÆRULEA AT TRING PARK.—Lord ROTHSCHILD'S gardens are famous, amongst other matters, for the perfection to which *Phalenopsis* and *Vanda teres* are grown. The house devoted to the last-named plant had recently upwards of five hundred flower-spikes. In the same house, *Vanda Hookerii* and *Aerides Vandarum* are grown, and the only specimen in cultivation of the true *Aerides cylindricum*, which is a very different plant from the *A. Vandarum*, which in some gardens goes under the name of *A. cylindricum*. The Tring Park collection now includes a houseful of the beautiful *Vanda cœrulea*, and it is anticipated that before the season is finished over one hundred and fifty spikes will be furnished by the healthy specimens of this species, which range in size from a single plant to masses of more than twenty stems. One variety has almost wholly bright blue flowers, with a dark blue labellum; another fine mass has four spikes, each bearing from fourteen to sixteen large flowers, in which the white ground of the segments shows through the rich blue veining. The finest specimen has seventeen strong flower-spikes, and will probably be the best ever seen.

PUBLICATIONS RECEIVED.—*Report of the Department of Agriculture, 1890-91.* Cape Town.—*Bulletin of the Botanical Department, Jamaica.*—*Trees and Flowers of California.* San Diego, California. The Orcutt Seed and Plant Company, substantially a trade list, but containing many interesting things, with notes on their growth, &c. It is a mistake to say *Abies bracteata* is unknown in cultivation. Mr. ORCUTT does not read his *Gardeners' Chronicle*.

THE REDWOOD.—One of the greatest curiosities of the Chicago World's Fair, says the *Times*, promises to be that sent by Tulare, California. A Redwood tree is growing there which is 390 feet high. It is intended to cut from this tree a log 90 feet long, and 20 feet in diameter. By cutting the log in half, and hollowing out each portion, it will be turned into two railway carriages, one fitted

up as a dining-car, with buffet, bath-room, barber's shop, and kitchen; the other to be a sleeping-car, with an "observation"-room. The rough bark of the tree will be left on for the roof, while the sides and ends will be of the natural wood, unpolished. The cars will be occupied during the exhibition by the families of the makers, and the rest of the tree will be cut up and worked into souvenirs.

chester. (2). The changes exhibited by protoplasm are much slower than your report would indicate. The effect of a current of London fog upon delicate, unprotected plant structures, takes some hours to manifest itself. The changes are identical with those occurring when sulphurous acid, of appropriate dilution, is passed over such structures. As the strength of the acid is increased, the effects in question are accelerated. (3). The concluding sentence

F. W. Oliver. [The report was furnished by a press-agency, and was unfortunately not revised. Authors would do well in such cases to send their own abstracts for publication, or at least to make known the fact that they are going to read papers on a particular subject.]

WHAT IS A HARDY PERENNIAL?—If "A. D." is right on p. 344, in classing *Hydrangea paniculata* as



FIG. 44.—CARNIVOROUS PLANT—PINGUICULA GRANDIFLORA: BUTTERWORT. (SEE P. 370.)

HOME CORRESPONDENCE.

TOWN FOG.—In the abstract, given on p. 340, of your last impression, of the recent discussion on "Town Fogs and their Effects" at the International Congress of Hygiene and Demography, some misleading statements are attributed to me. These I venture to correct:—(1). Sulphurous acid is conspicuous in both Manchester and London fogs; hydrochloric acid is present in both, though in less quantity in the London fog than in that of Man-

chester. It has been found necessary for the preservation of plants at Kew, as for the protection of legislators in the House of Commons, to filter the air through cotton-wool, and to supply the deficiency of light in foggy weather by electric illumination—represents the facts only as touching our legislators. Plants at Kew are without this sort of protection. The statement has doubtless arisen from the erroneous attributing to me, by a reporter, of remarks which fell from the lips of Sir Henry Roscoe, President of the Section in which the discussion took place. If I remember aright, the President was alluding to precautions which might become necessary in the near future.

hardy (I very much doubt if it is hardy so far north as this, even if grown as an herbaceous plant). I cannot agree with him that it should be called a "hardy perennial" in the ordinary sense of the words. "A. D." goes on to say: "If Roses and all ordinary hard-wooded shrubs which are not herbaceous, but are perennial, are excluded from classes termed hardy perennials, it can only be by some general understanding." I contend that such an understanding exists in the manner the term "hardy perennial" is generally applied. Who has heard of Rose trees or any other flowering shrub, say, *Dentzia scabra*, *Berberis Darwinii*, *Althæa*

frutex, *Cistus ladaniferus*, *Pæony Moutan*, Paul's Scarlet Thorn, and hundreds of other similar plants being called "hardy perennials." I admit that the term can be extended to include any plant that is perennial and hardy, but the fact remains that it is not usually so understood, but is taken by the majority of growers to mean a hardy plant that does not form a woody stem [above ground], and which, under the most favourable circumstances as to temperature, would still prove to be herbaceous. Granting that *Hydrangea paniculata* will succeed if treated as an herbaceous plant, the difference in the classes would soon be seen if a plant of it, and a plant of any ordinary herbaceous plant, say, for instance, *Delphinium formosum*, were lifted from the borders at the time when the latter commenced flowering, and grown on in a temperate house, the shrubby character of *H. paniculata* would soon appear as an absolute certainty, and its opponent would as certainly prove herbaceous. No shrub should be classed as an "herbaceous plant" or an "hardy perennial" in the ordinary sense of the term, and I consider the judges were quite right in the way they interpreted the schedule. To speak of "hardy herbaceous shrubs," as your correspondent does, is only to make confusion worse confounded. The terms "herbaceous" and "shrub" are exactly opposed to each other. *W. H. Divers, Kotton Hall Gardens, Stamford.*

NEW BRITISH FUNGUS.—The meeting of the Yorkshire Naturalists' Union, held during the past week at Doncaster, was devoted mainly to mycology. Of course there was the usual gathering of enthusiasts, a contingent of whom is always to be found haunting these fungus forays, at Doncaster to-day, at Paisley to-morrow, and in France, in Sweden, or in Denmark the next day—whispers were even heard that some might cross the Atlantic next year, "Just to see what the American species are like, you know." Old faces drop out from these meetings, but new ones appear to take their places—so wags the world. On September 17 an excursion was made to a wood near Doncaster—Sandbank Wood, I believe, is the name—when my friend Mr. H. G. Ward was fortunate enough to find a *Tilletia* not hitherto recorded as British. It occurs in the ovaries of *Holcus mollis*, and when once found cannot fail to be recognised by its markedly alveolate spores. It is doubtless the species described by Fischer von Waldheim under the name of *Tilletia Bauwenhoffii* (= *Polycystis Holci*, Westd.). Westendorp's plant, however, was on *Holcus lanatus*, but they are probably identical. The Doncaster plant occurred in considerable abundance. *Charles B. Plowright, M.D., King's Lynn, September 20.*

A NEW VARIEGATED FERN.—On a visit to the nursery of Messrs. Rogers, at Lodsworth, in Sussex, the other day, I saw, among other interesting things, a variegated form of *Adiantum macrophyllum*, which, so far as I know, is not in general cultivation, though it has been exhibited at one of the meetings at Westminster. As I saw it, with its fronds copiously mottled and freckled, I thought it a pretty plant, especially when the rose-tinted young fronds are likewise variegated. I am told that it is in best condition in spring, when the young fronds are freely developed. It will be a useful decorative plant, while among Ferns, it is most distinct, very different from any I have seen, and the floral decorator will, no doubt, put it to good use when it is obtainable. It is quite as strong in growth as the original, and requires the same treatment. There is an interesting collection of Orchids at this nursery, including some uncommonly good *Cypripediums*, notable among them being the best form of *C. barbatum nigrum* I have seen, and with larger flowers and deeper colours than ordinary. Outside one may see a thriving stock of several things which in that part of Sussex thrives admirably, one being the Japanese *Elæagnus pungens*, reflexa, and glaber, which are not generally planted, because insufficiently known, though they are among the handsomest of evergreen shrubs. *W. G.*

THE LATE MR WILLIAM HOLMES.—Soon after the death of Mr. Holmes, a committee was formed in Hackney to raise a fund for providing a local memorial of his worth, and the esteem in which he was so generally held. With the concurrence of his widow, this took the form of a handsome headstone in white marble, continued round the grave to a suitable height, so as to admit of the surface being planted with flowers. The upper portion of the headstone is finely sculptured, showing clasped hands, with the sentence below, "We shall meet again;" having representations

of *Chrysanthemums* above and at the sides in bas-relief; and at the top of each of the two dark granite columns which support the upper sculptured portion, a bunch of Primroses commemorative of his association with the local Primrose League. The inscription between the two columns set forth the date of Mr. Holmes' death, September 18, 1890, and goes on to state that, "This memorial was erected by a number of friends of the late William Holmes, as a token of their affectionate regard for his manly Christian character, and to mark their sense of his valuable services to the people of Hackney, as one of their most trusted and zealous representatives upon the various local boards; also in grateful remembrance of his unceasing labours in the world of horticulture, especially in connection with the culture of the *Chrysanthemum*." In spite of the very wet weather, a considerable number of friends were present at the Abney Park Cemetery, and, after a short service, conducted by the Rev. W. Langhorne, the Chairman of the Memorial Committee, the erection was formally handed over to the widow, Mrs. Elizabeth Holmes. Several members of the National *Chrysanthemum* Society were present, which was officially represented by the Chairman, Mr. Robert Ballantine, and the Secretary, Mr. Richard Dean. *R. D.*

POTATO POINTS AT EXHIBITIONS.—"One who Wishes to Learn" does not make his wishes very clear in respect to what he terms types of Potatos at exhibitions; but, presumably, he refers to their respective classes, as exhibitors have usually classified them. I was not at the Edinburgh show, and therefore did not see the Potatos, but, as I learn, large and coarse tubers were disregarded by the judges in favour of tubers of a more-refined character, and can very well understand the disappointment of those northern competitors whose notions with respect to show-tubers are, in some cases, indefinite. Generally, exhibition Potatos have been classified into white Kidneys and white rounds, coloured Kidneys and coloured rounds. In association with the two latter classes, however, it has been wisely agreed to include all having white skins, if only moderately blotched with any other colour. So much for the classification. I do not know whether that is what is meant by "One who Wishes to Learn," when he refers to types. It must not be understood, however, that it is easy to class all Potatos into these four divisions. White and coloured are clearly enough defined, but rounds and Kidneys are much confused, because we have so many sorts that are of undefined form, and being flattish-long, sometimes come in as round, sometimes as Kidney. However, in selecting varieties for distinct sections, the exhibitor should seek for those which seem most to conform to the requirements of the classes. Ashleaf Kidney, Snowdrop, Governor, The Canon, Magnum Bonum, with many others of the long, flattish, pointed form, are all true white Kidneys; and of coloured ones, Priz-taker, Edgcote Purple, Mottled Beauty, Beauty of Hebron, and others, show what sort of form these should have. Of white rounds, Schoolmaster, London Hero, Sutton's Seeding, and Satisfaction are all good types; and of coloured ones, Reading Russet, The Dean, Vicar of Laleham, or Adirondach are good examples. All other varieties may come into large collections of twelve, eighteen, or twenty-four dishes, when no special classification is stipulated. Still, in the case of these collections, they are strong or otherwise, just as they may include a fair admixture of colour amongst the whites, and of the recognised sections of Potatos; but of course it is more important that the individual tubers should be of the best form. This comprises good medium size, but not unduly large tubers, skins very bright, clean, and smooth, and the outlines as perfect and even as can be obtained. No tubers should have scab or roughness of skin, or abrasions or warts, but be what can conscientiously termed handsome. It is but right that as much beauty should be found in Potatos as the tubers can furnish, this, of course, irrespective of quality; but the term "Show Potatos," as commonly used, is misplaced, because all varieties, good or bad, give handsome tubers, just as grown in good or bad soils. Specially should the tubers exhibited be of fairly even size. After all, there is nothing like a good show to educate novices in Potato exhibiting, and one regrets that the bright International Potato shows no longer exist. *A. D.*

THE ELEPHANT'S FOOT.—TESTUDINARIA ELEPHANTIPES.—The tortoise-corm Yam, or Elephant's Foot, grown in pots, is a quaint-looking plant, and one that is only likely to be found here and there in

gardens. At the same time, there can be no reason why a lesson should not be taken from Cape Colonists, and the way they employ the plant for doorway decoration. At Port Elizabeth, they have been grown on house-porches for generations, and it need not be said, the huge, hard, outside coverings of the roots, prove permanently ornamental, as a base, whilst the annual growth from them, covering trellis-work with its neat foliage and yellow inflorescence, is at least, refreshing amidst the glare of sunlight and the prevailing dust—especially, when occasional rain storms cause them to glisten with renewed freshness. I would suggest match-pairs planted at the entrance of conservatories, or greenhouses (on the inner side of course), and indeed in cool ferneries they would prove a novelty, both as regards the rustic base and over-meeting growth, such as would be generally appreciated. Meantime, has it been ascertained whether these *Dioscoreaceæ* have any culinary merit? *William Earley.*

VEGETABLES AT GLENHURST.—When I looked in upon Mr. Waite at Glenhurst, Esher, Surrey, sometime since, he was very busy preparing his vegetables for the exhibition of the Co-operative Association at the Crystal Palace, where he exhibits annually in scores of classes; and also for a vegetable competition of a much higher status, perhaps the most important of any similar competitions in the provinces—that at Shrewsbury, on the 19th and 20th inst. A good deal of courage is required from any exhibitor who proposes to carry a quarter of a ton weight of vegetables so far from home as Shrewsbury is from Esher, and it involves likewise a considerable outlay. Still Mr. Waite has been there frequently, and found more or less success. His stoutest opponent there was Mr. Lambert, who however has, since last year, been called to Wales, where doubtless he will try hard to sustain his high reputation as a vegetable grower. Mr. Waite, however, is second to none with vegetables. It is true he sometimes finds his match, because with a show period of some five months, it is certain that occasionally some of his productions will be weaker than others. But few gardeners in the kingdom have a longer list of wins than he can show, and no other gardener, perhaps, attempts to show so often. The season begins in June, and ends with the latest of the *Chrysanthemum* shows, and during that time, perhaps, some twenty-five to thirty shows are competed at, and over one hundred prizes won. These latter, however, would not be of great merit were they seconds or thirds. Mr. Waite's average of firsts is very high, and such first-class results can only be secured by the best cultivation, and the highest capacity to select good products and set them up on the exhibition tables to the very best advantage. The large open space of ground taken from a rich meadow at Glenhurst, and converted into a kitchen garden, is every year fully cropped, and every year produces splendid results. It consists of a deep, friable soil, soft in texture, yet holding, in which all kinds of vegetables thrive. Then the very best selections are grown, and these are sown fairly thin, have ample room, and are carefully tended, so far as it is possible so to do. An instance of the exceptional care taken to secure the best possible samples is shown in some plants of Canadian Wonder French Beans, which have been hard-thinned to single plants, each 1 foot apart, on a south border, and these plants again reduced to single stems, and the production of a few pods, so as to ensure them straight and long. Celery, again, of the earlier planting, is blanched by means of bands of brown paper, and not with the soil. Not only is such method of blanching effectual, but it results in cleaner and finer stalks; still further, the finest can be selected and lifted as needed, whilst all the plants can be to the last freely supplied with liquid manure. Then with Cauliflowers, the greatest care is taken to have the plants tied up neatly, and not too closely, so soon as heads begin to show. The practice would not, perhaps, answer in wet weather, as it might too much enclose moisture, but in hot weather the effect is to keep the light from the heads, so that when cut they are of a pearly-white, very solid, and clean. For the season, more perfect samples of Cauliflowers than were at Glenhurst the other day could hardly be found. These simple things evidence the special pains taken by Mr. Waite to have the best, and to do all that can be done to secure the highest awards at the exhibitions. The chief subjects in vegetables shown at Shrewsbury from Esher comprised Autumn Mammoth Cauliflower, a fine stock turning in during August, and well in advance of the Autumn Giant; Excelsior Onions, very fine, and of cricket-ball form, still

capable of enlargement if left to grow; Snowball Turnip, the best of all for early show-work; new Intermediste Carrots, very handsome, clean, and rich in colour; Leicester Red Celery, very solid and clean; Exhibition Marrow Peas, a very prolific tall variety, which carries very fine pods; Satisfaction Potatoes, white, round, clean, and handsome; Ne Plus Ultra Runner Beans, a wonderful crop on the line, and the pods very straight, long, and of good colour; Model Cucumber, Globe Artichokes, Lyon Leeks, and Glenhurst Favourite Tomatoes, a very rich-coloured, handsome, prolific form of what is now the most popular vegetable-fruit grown. Beyond these, there are for extra dishes, if needed, Canadian Wonder French Beans, Exhibition Long-pod Beans, Parsnips, and Cabbages; but the expert exhibitor of vegetables knows well what are the best things for the season, and what should be winning samples. The gardener who has a good appreciation of the required quality knows at home so soon as his samples are clean and ready just about what his chances are in the intending competition. Few men in the matter of vegetables should understand what is good and what is not better than Mr. Waite, hence his oft successes, and high record of winnings. A. D.

SOCIETIES.

ROYAL HORTICULTURAL.

THE meeting on the 22nd inst., was very well attended by the public, and on this account it is to be regretted that only one small collection of insect-eating plants was brought. Mr. Lindsay's interesting paper on these plants was read by the Secretary, the Rev. W. Wilks, and was much appreciated. Messrs. Veitch had the only collection of insectivorous plants exhibited, consisting of *Nepenthes Burkei* excellens, with dark shining crimson pitchers with crimped rim; *N. Mastersiana* ×, mahogany-coloured pitchers, and others; also *Drosera dichotoma*, *Sarracenia Stevensii*, and others, many of which are figured in the present issue.

Orchid Committee.

Present: Dr. M. T. Masters, F.R.S., in the Chair; Mr. James O'Brien, Secretary, and Messrs. Sydney Courtauld, T. B. Haywood, E. Hill, Jas. Douglas, Hugh Low, F. Sander, L. Castle, and H. Ballantine. Messrs. F. Sander & Co., St. Albans, exhibited a small group of Orchids, comprising a grand dark variety of *Lælia grandis tenebrosa*, several forms of *Miltonia vexillaria*, including the variety *superba*, *Cattleya Gaskelliana alba*, *Vanda Hookeriana*, several plants of *Cypripedium Maynardii* × (*purpuratum* × *Spicerianum*), and three examples of the handsome *C. Pollettianum* × (*calophyllum* × *quantum superbum*) the wide difference between which, although the seeds came all from one pod, should act as a warning against naming slight variations, and especially colour differences. The great feature in *C. Pollettianum* is its large, perfectly circular dorsal sepal, which is quite flat. It partakes of the bright colouring of *C. quantum superbum*; the upper edge of the dorsal sepal is pure white and beneath the white margin, clear bright rose, the lower half radiating from the column having many lines and spots of shining dark chocolate. In one of the forms exhibited, the flowers were much paler than the type, and with but little marking on the dorsal sepal, and the other form had slightly larger flowers, in colour intermediate between the two. A Silver Banksian Medal was unanimously voted for the group.

Baron Schroder, The Dell, Egham (gr., Mr. H. Ballantine), exhibited *Cypripedium Antigone* (*niveum* × *Lawrenceanum*). Its flowers are as large as those of *C. Lawrenceanum*, but with much of the form of those of the other parent; they are white, tinged over the face of the lip and the sepals and petals with rose colour. A First-class Certificate was awarded. Mr. Ballantine also exhibited flowers of *Cattleya Hardyana* and *C. Dowiana*.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), sent *Cattleya intermedia alba*, a variety with fine white flowers (First-class Certificate); *C. Loddigesii splendens*, with rich rosy-crimson sepals and petals, and distinct bronzy-orange stain on the lip; also cut flowers of *C. Loddigesii* and *Miltonia Moreiana atrombers*.

C. J. Lucas, Esq., Warnham Court, Horsham (gr., Mr. G. Duncan), exhibited a plant of a light form of *Aerides Rohaniannum* and *Odontoglossum*

Pescatorei; and cut spikes of a very fine form of *Cattleya Schofieldiana* and *C. bicolor*, and of *Vanda Sanderiana*.

Messrs. Seeger & Tropp, 112, Lordship Lane, East Dulwich, staged a fine plant of *Grammatophyllum Seegerianum*, with a 4-foot scape of about three dozen flowers, greenish-white, heavily barred with brown.

Messrs. W. L. Lewis & Co., Chaseside, Southgate, sent a dark form of *Cypripedium Harrisianum* and a plant of *Masdevallia Gaskelliana*.

Captain Hincks, Brechinboro, exhibited his new hybrid *Masdevallia Stella* × (*M. Harryana* ♂ × *M. Estradae* ♀); the scapes are slender, and bear one pale lilac flower.

Messrs. Pitcher & Manda, the United States Nurseries, Hextable, Swanley, Kent, showed two plants of the pretty lilac-coloured *Lælia Eyer-manniana*, a fine form of *Cattleya maxima*, *Burlingtonia fragrans*, *Cypripedium Harrisianum* ×, and the darker *C. H. Rougerii* ×, *C. Chas. Canham* ×; and, under the name *C. intermedium* ×, a variety with much resemblance in the flowers to *C. selligerum* ×. A vote of thanks was recorded.

J. C. Parr, Esq., Grappenhall Hayes, Warrington, sent a three-flowered spike of *Cattleya Hardyana*.

Fruit Committee.

Present:—Philip Crowley, Esq., in the Chair; also Messrs. Harrison Weir, R. D. Blackmore, T. Francis Rivers, J. Cheal, G. W. Cummins, W. Warren, T. J. Saltmarsh, A. H. Pearson, A. Dean, W. Bates, George Cliffe, George Wythes, James Hudson, F. Q. Lane, H. Balderson, G. Reynolds, J. Willard, Dr. Hogg, and Rev. W. Wilks.

A Silver Banksian Medal was awarded to Messrs. William Paul & Son, Waltham Cross, for collection of sixty dishes of Apples and sixty dishes of Pears, comprising all the best kinds, large and well coloured *Souvenir du Congrès* and *Clapp's Favourite Pears*, *Duchess's Favourite*, *Duchess of Oldenburgh Melon*, *Lord Suffield* and *Emperor Alexander Apples*, &c.

Two dishes of *Solway Peaches*, fruits 4 to 5 inches in diameter, beautiful chrome-yellow, flushed red, were exhibited by the Rev. L. R. Flood, the Rectory, Merrow (gr., Mr. J. Gillart). Awarded a vote of thanks. The same acknowledgment was given to Mr. John Roberts, the Gardens, Tanywlch, for dish of *Passiflora edulis*, fruits the size of large Plums, of dark purple colour.

Vote of thanks was passed to Messrs. James Veitch & Son, Chelsea, for a Crab Apple called *John Downie*, nicely-coloured, fruit of *Pyrus malus*, × *Elise Rathe*, with pendulous branches, and conical medium-sized fruit, green with red cheeks; *Farleigh Prolific Damson*, with enormous crops of fruit.

Rev. W. Wilks exhibited a new Pear, *Marguerite Marillat*, 6½ inches long, 4½ inches largest diameter, pale yellow with russet dots.

Mr. Bloxham, Great Brickhill Manor, Etcchley, received a vote of thanks for some samples of *Veitch's Main Crop Onion*, 4 to 5 inches in diameter, flat and even, small neck and heavy. H. Lane & Son, Berkhamstead, showed a small pear-shaped Apple.

Messrs. Rivers & Son, Sawbridgeworth, had four dishes of seedling Plums which had been dried in *Mayfarth & Co.'s Fruit Evaporator* at Chiswick Gardens.

Three seedling Melons, as well as new Apples and Plums, came from various raisers, but these received no award.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. C. T. Druery, R. Dean, B. Wynne, G. Phippen, G. Nicholson, C. Jeffries, G. Mynton, R. E. Lowe, T. J. Bennett-Poc, H. Cannell, C. Noble, J. Walker, J. Fraser, W. Goldring, G. Gordon, and Rev. Honeywood D'Ombraim.

Mr. J. Walker, nurseryman, Thame, Oxon, received a Bronze Banksian Medal for a large collection of German quilled Asters, the most attractive being *The Bride*, white, surrounded with pink; *Modesty*, white, shaded with pale pink; and *Duchess of Edinburgh*, rose, white centre. They were shown in small shields, with their own foliage.

Messrs. J. Veitch & Sons, Chelsea, had a varied and interesting collection of plants. A greenhouse *Rhododendron*, *Ceres*, chrome-yellow self, carmine stamens; received a first-class Certificate. They showed six baskets of different *Elæagnus*, *E. pungens maculatus*, leaves with pale yellow centres, and narrow green margins, received a first-class Certificate. *E. p. aurea marginata*, with broad golden edge, was good.

Messrs. Pitcher & Manda, Hextable, Swanley, showed pins of *Cuphea Llave*, with two upper perianth

segments brilliant scarlet, which contrast with purple hairs on stamens. Awarded a Botanical Certificate.

W. Marshall, Esq., Bexley, received a Cultural Commendation for a large pot of *Nerine flexuosa*, the mass of deep pink flowers being effective.

A Silver-gilt Flora Medal was awarded to Mr. George Phippen, nurseryman, Reading, for handsome bank of flowers, consisting mainly of *Cactus Dahlias* in shields backed with *Bracken Fern*, also *Lilium lancifolium* and *L. auratum* in pots, the colour relieved with *Asparagus plumosus*, *Grevillea robusta*, *Cocos Weddeliana*, tall *Dracænas* at the back, and *Adiantum* in front.

Messrs. William Paul & Son, Waltham Cross, received a Bronze Banksian Medal for an important collection of autumnal Roses, filling six boxes, shown in clusters. The best of them were *Ulrich Brunner*, *Grand Mogul*, very good; *Mrs. J. Laing*, Duke of Wellington, and *A. K. Williams*. Teas: *Marie Van Houtte*, *Sunset*, *Niphetos Safrano*, Dr. Grill.

Dahlias.—Mr. St. Pierre Harris, Orpington, Kent, had three seedlings, viz., *Draughtsman*, crimson, flushed on the edges with orange-salmon; very fine shell petal-centre, and excellent outline (Award of Merit); *Mariner*, deep crimson, shaded with purple on the edges; and *Lancer (fancy)*, blush, the sides of the petals yellow, the reverse cinnamon; a pretty and lively looking flower, something in the way of *Polly Sandell*.

Mr. A. Rawlings, florist, Romford, staged a very fine collection of nearly two hundred show and fancy varieties, and, in not a few cases, three blooms of each. Of new varieties, he had *Mrs. Ocock*, yellow, slightly tipped with salmon red, and having a slight margin of pale mauve to some of the petals—very distinct and promising (Award of Merit); *Mrs. Hurst*, a pale variety, in the way of *Queen of the Belgians*, but paler in the ground colour, and being edged with a very slight beading of bright rosy purple; *George Gordon*, a bright crimson self; *Fred Gunston (fancy)*, deep lilac, flaked with maroon; *Nicol Walker (fancy)*, deep buff-yellow, striped with crimson; *George Arnold*, crimson, flushed with purple; and *Arthur Ocock*, a large orange-red self. Of older varieties he had, in very good condition, *Queen of the Belgians*, *Harry Keith*, *R. T. Rawlings*, *Shirley Hibberd*, *John Hushaw*, *Majestic*, a novel and attractive flower; *Nellie Cramond*, and others.

Mr. J. T. West, gr. to W. Keith, Esq., Cornwalls, Brentwood, staged a collection of new *Cactus* varieties, that were not in sufficiently good condition to tempt the Floral Committee to make an award to any of them: they were *Mrs. Harwood*, orange-scarlet; *Mr. Rolfe*, deep orange; *Emily Girdlestone*, orange, suffused with red; *Glory of Brentwood*, crimson, the points tipped with pale purple; and *Annie Goddard*, pale yellow. Mr. West had bunches also of older varieties, and a large collection of cut show *Dahlias*, including nine blooms of his fine new yellow self, *William Powell*. His blooms were very fine for this late part of the season.

Mr. G. Humphries, florist, Chippenham, had a collection of *Dahlias*, including six blooms of Mr. G. Humphries, a very attractive, light variety, flushed with warm pink, and slightly tipped with purple on the centre florets—very constant, and of fine quality (Award of Merit); and *Pompon Little Sarah*, buff ground, heavily tipped with rosy-pink (Award of Merit).

Mr. Turner, Royal Nursery, Slough, sent a collection of show *Cacti* and *Pompon Dahlias*; of the former, the following new varieties were staged:—*Ada Rhan*, soft pinkish-lilac, in the way of *Clara*, but deeper in colour, the petals more erect; very pleasing indeed, and novel, six very good blooms being staged (Award of Merit); *Touchstone (fancy)*, shaded yellow ground, striped and flaked with crimson (Award of Merit); also *Nugget*, yellow, heavily tipped with reddish-orange; *Edorado*, crimson, tipped with purple; *Hero (fancy)*, pale lavender ground, heavily flaked and striped with crimson; *Oliver*, crimson self; *Old Tom*, a lightly shaded crimson self, of great promise; *Lorina*, deep buff yellow, &c. Of new *Pompon* varieties, *Mars*, rich bright scarlet, small and of the finest form (Award of Merit); *Lorna Doone*, pale lilac-rose ground, heavily tipped with claret-crimson, perfect in shape (Award of Merit); *Cecil*, ruby-red, tipped with white, finest shaped petals (Award of Merit). Beside these were six new *pompon* varieties, viz., *Marion*, *Othello*, *Rubens*, *Midget*, *The Mikado*, and *Martial*, all very fine.

Messrs. Cannell & Sons, nurserymen, Swanley, staged several bunches of new *Cactus* and decorative varieties, viz., *Ernest Cannell*, very pale bright

orange-scarlet, true Cactus type (Award of Merit); Sir Roger, brilliant orange-scarlet, true Cactus type, a most striking variety (Award of Merit); Mrs. Thornton, the base of the petals warm bright rose, the greater portion of the petals bright deep rosy-pink (Award of Merit); Beauty of Eynsford, salmon, flushed with reddish-orange and yellow; Marchioness of Abergavenny, pale yellow; Princess Christian, bright rose, flushed with magenta-purple on the edge; and some few other good varieties.

A large representative collection of Dahlias came from Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley. There were forty-eight bunches of single varieties, including several quite new, such as Lady Whitehead, deep rose, a peculiar and novel shade of colour; Gertrude, pale mauve-purple edged with silvery-mauve; Cleopatra, fiery-crimson shaded off to maroon-crimson; Miss Sperati, yellow, flushed and striped with deep red; Duchess of Albany, Alba perfecta Christine, a very pleasing shade of pinkish lilac, &c. single blooms, and large and imposing bunches of Cactus and decorative Dahlias, such as Lady Marcham, Empress of India, Juarez, Marchioness of Bute. These and thirty-six show Dahlias completed the large-flowered part of the exhibit. There were also thirty bunches of pompon Dahlias, some of the most pleasing being Dora, Janet, Admiration, Eurydice, Favourite, Guiding Star, Phoebe, E. F. Jungker, Elie Meillard, white; and Blanche.

Next to this Mr. T. S. Ware, Hale Farm Nurseries, had arranged an imposing pyramid of Cactus and decorative Dahlias, which, despite its formality, had attractiveness for many. The group included Delicata, tinted-blush, very nice; Oban, salmon flushed with mauve; John Bragg, rich maroon; Edmund Weekly, Mrs. Douglas, &c. Also a number of pretty bunches of Pompon varieties, comprising several new sorts, such as Mrs. Walter Besant, pale buff, tipped with purple, very pretty (Award of Merit); Nellie Macbray, deep orange-buff, very novel and distinct (Award of Merit); Edith, white slightly tipped with purple, very pretty and delicate; Rose Perry, pale yellow, edged with claret; and others. Also bunches of single varieties, a lot of plants in pots of his new white Carnation La Neige, which seems to improve as the summer wanes; and a collection of pretty bunches of early flowering pompon Chrysanthemums, foremost among them being Toreador, yellowish buff; Anastasio, pinkish-lilac; Précocité, Early Blush, &c.

Mr. Ware had some plants of new early-flowering Japanese Chrysanthemums. Mr. W. Whiteley, The Nursery, Hillingdon, again sent his new white Japanese Chrysanthemum, Miss Whiteley, but not improved in appearance. Lastly, came Mr. R. Owen, Castle Hill Nursery, Maidenhead, with a large and representative collection of early-flowering Chrysanthemums, Pompon and Japanese, including seedlings of his own raising, and new continental varieties. There were twenty bunches of selected early Pompons; several new Pompon varieties, such as Madame Edouard Lefort, fimbriated yellow; Viscount Cliquot, deeply yellow, with slight flush of orange-red; very compact and pretty (Award of Merit); G. B. Duvoir, bluish-white (Award of Merit), &c.; also a large collection of new early-flowering Japanese varieties, including M. Pynaert Van Geert, deep brownish-gold; R. du Mesnil du Mont Cheauve, blush and deep lilac-rose, Middle Louise Morlot, blush, suffused with purplish-rose; N. Molyneux, a seedling from E. Molyneux, but with the surface fiery-chestnut, with silvery reverse; Lady Emily Fitzmaurice, bright yellow; Autumn Queen, resembling a deep golden form of Madame Desgranges; Mrs. Burrell, sulphur; M. Merendet, deep pink.

STOWMARKET HORTICULTURAL.

This Society, after being dissolved twelve years ago, through lack of funds and other reasons, has been reconstituted under the presidency of Mr. R. J. Pettivard, a large number of local gentlemen being appointed vice-presidents, and a strong committee having been elected, a successful show was held on September 4. In the fruit classes, competition was not very keen, except for Plums, Apples, and Pears; nor for vegetables, except Potatoes and Onions, the former of which were exceptionally fine and good, more especially the cottagers' productions.

The Rev. E. J. Warmoll kindly offered special prizes for vegetables grown on his allotments, and as a great many of the exhibits in the ordinary cottagers' classes were from the same allotments, this gave additional chances of finding a place in the

winning list. There were two classes for honey, comb and extracted, and some excellent 1 lb. and 2 lb. bottles were shown.

ROYAL CALEDONIAN HORTICULTURAL INTERNATIONAL

SPECIAL AWARDS FOR EXHIBITS NOT IN COMPETITION.

[We publish this list subject to correction, as it is we believe still incomplete, and the official record has not even yet reached us. Ed.]

A Gold Medal was awarded to Messrs. Wm. Thomson & Sons, Tweed Vineyard, Clovenfords, Galashiels, for a table 60 feet by 14 feet, composed of choice Palms, Orchids, Ferns, fruit, cut flowers, and vegetables, remarkable for good culture and tasteful arrangement.

The following were awarded Silver-gilt Medals:—

The Royal Horticultural Society, London, per Mr. Barron, Chiswick, for an interesting and instructive display of fruit, consisting of sixty-two varieties of Apples, twenty-five varieties of Plums and Damsons, and seventy varieties of Tomatoes.

Messrs. Geo. Bunyard & Co., Maidstone, Kent, for a first-class collection of fruit, made up of forty-six dishes Apples, twelve dishes Pears—all beautifully coloured—and two dishes Kentish Cobs.

Mr. Walker, Ham, Surrey, for a collection of Apples and Pears from standard trees; there were sixty samples of Apples and thirty samples of Pears, all large and good.

Messrs. Birkehead, Sale, Manchester, for a rich and interesting display of Ferns, many rare, and all beautiful.

Messrs. Cannell & Sons, Swanley, Kent, for a splendid display of Tuberous Begonias, Cactus, Dahlias, &c.

Messrs. James Dickson & Sons, nurserymen, Hanover Street, Edinburgh, for a choice collection of ornamental Conifers.

Messrs. B. S. Williams & Son, Holloway, London, for a table of stove and greenhouse plants, comprising many new and rare species and varieties.

The following were awarded Silver Medals:—

Messrs. Cheal & Sons, Crawley, Sussex, for a fine collection of sixty dishes of Apples, and thirty dishes of Pears, along with a numerous exhibit of Dahlias and other cut flowers.

Mr. John Watkins, Pomona Farm, Hereford, for eighty dishes of Apples, forty dishes of Pears, twenty of Cider Apples, and twelve of Perry Pears, thirty of Plums and Damsons, with samples of cider champagne and perry champagne.

Messrs. Cocker & Sons, nurserymen, Aberdeen, for an excellent and extensive display of Roses and cut flowers of hardy perennials.

Messrs. Cross & Sons, Glasgow, for an interesting group of well-cropped orchard-house fruit trees, cut flowers, and vegetables.

Mr. Deverill, Banbury, Oxfordshire, for samples of splendidly grown Onions and other vegetables.

Messrs. Dobbie & Co., Rothesay, N.B., for a tasteful display of cut flowers and choice vegetables.

Messrs. Laing & Sons, Forest Hill, London, for a table of tuberous Begonias and other decorative plants.

Messrs. Methven & Sons, nurserymen, Edinburgh, for a well-arranged table of decorative stove and greenhouse plants.

Mr. James Taylor, Bangholm, Edinburgh, for an extensive display of vegetables, as put up in quantities for the Edinburgh market.

The following were awarded Bronze Medals:—

Mr. Rust, The Gardens, Eridge Castle, Sussex, for a fine collection of fruit, comprising ninety dishes Apples, and twenty-four dishes Pears, grown at 400 feet above sea-level.

Mr. Campbell, Blantyre, N.B., for a table of choice florists' flowers.

Mr. Cuthbertson, Rothesay, N.B., for a table of choice florists' flowers.

Messrs. Dicksons & Co., nurseryman, Edinburgh, for an excellent table of miscellaneous decorative plants.

Messrs. Laing & Mather, Kelso, for a display of choice Carnations and other cut flowers.

Messrs. Stuart & Mein, Kelso, for a display of Gladioli and other cut flowers.

Messrs. Cutbush & Son, Highgate, London, for a fine table of miscellaneous decorative plants.

Mr. Hugh Dickson, Belmont Nursery, Belfast, for an exhibit of forty-eight splendid blooms of Rose Mrs. John Laing.

The following were Commended:—

Mr. John Downie, nurseryman, Edinburgh, for a showy table of Tuberous Begonias, &c.

Mr. John Forbes, nurseryman, Hawick, for a table of cut flowers and vegetables.

Mr. Findlay, Markinch, for a collection of new varieties of Potatoes.

Messrs. Thomas Smith & Sons, nurserymen, Stranraer, for a stand of blooms of Rose Mrs. John Laing.

The following received First-class Certificates:—

The Saratoga Packing Company, California, for high quality of sun-dried Prunes, and excellence in curing and packing.

Mr. John Watkin, Pomona Farm, Hereford, for excellence of cider and perry champagne.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.			
	Above (+) or below (-) the Mean for the week ending September 19.	ACCUMULATED.				10ths Inch.	Inches.	No. of Rainy Days since Jan. 4, 1891.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 4, 1891.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 4, 1891.	Below 42°, difference from Mean since Jan. 4, 1891.						
1	3 +	85	0	+ 194 + 79	4 +	170	34.2	22	28		
2	4 +	97	0	- 19 + 141	1 -	123	18.1	31	31		
3	4 +	111	0	- 83 + 95.0	never	121	15.8	20	30		
4	4 +	122	0	- 107 + 128.0	aver	128	17.0	29	34		
5	4 +	117	0	- 91 + 115	1 -	124	18.2	21	32		
6	3 +	121	0	- 118 + 149	1 +	120	19.0	21	37		
7	3 +	100	0	+ 109 + 45	2 -	133	25.7	25	33		
8	4 +	118	0	+ 50 + 35	2 +	120	22.0	25	31		
9	2 +	115	0	- 82 + 118	4 +	127	25.6	19	39		
10	4 +	107	0	+ 68 + 29	4 -	150	21.5	24	31		
11	3 +	111	0	+ 22 + 31	5 -	135	23.4	23	34		
12	1 +	127	0	- 8 + 40	4 +	127	20.6	22	47		

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 19, is furnished from the Meteorological Office:—

"The weather was fine and warm at the commencement of the period, but soon became much cooler, unsettled, and showery in all parts of the Kingdom.

"The temperature has continued above the mean, the excess having ranged from 3° or 4° in most districts, to 1° in the 'Channel Islands.' The highest of the maxima were recorded on the 13th, when the thermometer rose to 83° over Central, S., and E. England, to 80° in 'England, N.E. and N.W.,' and to between 73° and 78° in the 'W. and N. parts of the Kingdom.' The lowest of the minima were registered on the 15th, and varied from 40° in 'England, S.W.,' and 43° in 'England, S.' and 'Scotland, W. and E.,' to 46° in 'Ireland, N.,' and to 52° in the 'Channel Islands.' During the greater part of the period the minima were considerably above the mean for the time of year.

"The rainfall has been rather more than the mean in 'Scotland, N.,' and all the 'W. parts of England,' as well as in 'England, S.' and the 'Channel Islands.' In the 'N.E. and E. of England' the fall has just equalled the mean, while in the remaining districts there has been a deficiency.

"The bright sunshine has been very little prevalent as a whole, but in the 'N. and E. of Scotland' it has been rather in excess of the mean. The percentage of the possible duration was greatest at the eastern stations, and ranged from 31 in 'Scotland, E.' and 29 in 'England, E.' to 19 in 'England, S.W.'"

MARKETS.

COVENT GARDEN, September 24.

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

MARKET still heavily supplied. James Webber, Wholesale Apple Market.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.	s. d.	s. d.
Artichokes, Globe, each	0 4	0 6	Lettuces, per doz.	1 0
Beans, French, lb.	0 3	0 4	Mushrooms, punnet	2 0
Beet, red, per dozen	2 0	3 0	Mustard and Cress, punnet	0 4
Carrots, per bunch	0 6	...	Parsley, per bunch	0 4
Cauliflowers, each	0 4	0 6	Shallots, per lb.	0 6
Celery, per bundle	2 6	3 6	Spinach, per bushel	3 6
Cucumbers, each	0 4	0 9	Tomatos, per lb.	0 6
Endive, per dozen	2 0	3 0	Turnips, per bunch	0 6
Herbs, per bunch	0 4	...		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.	s. d.	s. d.
Apples, 1/2-sieve	1 0	3 0	Melons	0 6
Damsons, 1/2-sieve	1 6	...	Peaches, per dozen	1 0
Grapes	0 6	1 9	Pine-apples, St. Michael, each	2 0
Kent Cobs, 100 lb.	35	0	Plums, 1/2-sieve	1 0
Lemons, per case	20	0		

POTATOS.

Supply rather heavier, consequently prices rule rather lower. Best samples, 70s. to 80s.; ordinary, 55s. to 60s. Beauty of Hebron, good samples, are in demand, and sell freely. J. B. Thomas.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.	s. d.	s. d.
Asters, French, 12 bunches	8	0	10	0
— English, per dozen bunches	1	0	3	0
Carnations, 12 buns.	4	0	6	0
Carnations, 12 blms.	0	9	1	6
Chrysanthemums, 12 blooms	1	0	3	0
— 12 bunches	3	0	6	0
Cloves, per dozen blooms	0	6	1	0
Cornflower, 12 buns.	1	6	2	0
Dahlias, 12 bun.	2	0	3	0
Eucharis, per dozen	2	0	4	0
Gaillardias, 12 buns.	2	0	4	0
Gardenia, per dozen	2	0	4	0
Gladiolus, 12 bunches	4	12	0	0
Heliotrope, 12 sprays	0	3	0	6
Lavender, doz. bunch	4	0	5	0
Lilium var, 12 bun.	10	12	0	0
— Harrisii, doz.	3	0	5	0
Liliums, various, doz.	1	0	3	0

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.	s. d.	s. d.
Adiantums, per doz.	4	0	12	0
Arabias, per doz.	4	0	6	0
Aspidistra, per doz.	15	0	63	0
Asters, per dozen	3	0	6	0
Balsams, per dozen	3	0	5	0
Begonias, per doz.	4	0	6	0
Caladiums, per doz.	12	0	24	0
Campaulas, per doz.	8	0	12	0
Chrysanthemums, per dozen	6	0	9	0
Coleus, per dozen	3	0	6	0
Cyperus, per dozen	4	0	10	0
Dracenas, each	1	0	5	0
Ferns, small, per 100	8	0	15	0

FRUITS AND VEGETABLES.

STRATFORD: Sept. 23.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned quotations:—Cabbages, 1s. 6d. to 2s. 6d. per tally; Cauliflowers, 1s. to 1s. 6d. per dozen, and 3s. to 6s. per tally; Turnips, 1s. 6d. to 2s. per dozen bunches; Carrots, household, 35s. to 50s. per ton; Mangels, 17s. 6d. to 20s. do.; Swedes, 25s. do.; Onions, German, 5s. to 6s. per bag; do., Oporto, 6s. to 7s. per case; Apples, English, 1s. 6d. to 4s. 6d. per bushel; Scarlet Beans, 1s. to 1s. 6d. per sieve, and 1s. 6d. to 2s. per bag.

SPITALFIELDS: Sept. 23.—Quotations:—English Apples, 2s. to 5s. per bushel; Pears, 1s. to 2s. 6d. per half sieve; Egg Plums, 1s. to 1s. 6d. do.; Orleans do., 2s. to 2s. 9d. do.; Damsons, 1s. 6d. to 2s. do.; Greengages, 2s. to 3s. do.; Cabbages, 1s. 6d. to 3s. 3d. per tally; Cauliflowers, 2s. to 4s. per dozen; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; French Beans, 4d. to 1s. per bushel; Scarlet do., 6d. to 1s. do.; Greens, 1s. to 1s. 3d. per dozen bunches; Turnips, 1s. 9d. to 2s. 6d. per dozen

bunches; Carrots, 1s. to 2s. 6d. do.; Onions, 2s. to 2s. 6d. do.; Parsley, 1s. to 1s. 6d. do.; Celery, 6d. to 10d. per bundle; Horseradish, 10d. to 1s. 1d. do.; Spanish Onions, 5s. to 6s. per case; Belgian do., 2s. to 2s. 6d. per bag; Leeks, 1s. 6d. to 2s. 6d. per dozen; Endive, 1s. to 1s. 6d. do.; Cos Lettuce, 4d. to 6d. per score; Marrows, 1s. 6d. to 3s. per tally; Spinach, 1s. to 1s. 6d. per bushel; Radishes, 1s. 6d. to 2s. 6d. per tally; Beetroots, 1s. 6d. to 2s. 6d. per dozen bunches.

BOROUGH: Sept. 22.—Quotations:—Cabbages, 2s. to 5s. per tally; Broccoli, 3s. to 4s. do.; Turnips, 1s. 6d. do.; Carrots, 1s. 6d. per dozen bunches; Scarlet Beans, 9d. to 1s. per bushel; French Beans, 1s. do.; English Plums, 2s. to 3s. do.; Apples, 2s. to 4s. do.; and William Pears, 2s. to 5s. do.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

CYPRESSUS KNIGHTIANA, C. COULTEI, and C. URDEANA.—The Editor would feel greatly obliged to any Correspondent who would furnish him with a small scrap of either of these Cypresses without, or preferably with, a cone.

PASSIFLORA EDULIS.—Will some correspondent oblige by sending a few seeds of this to the Editor?

NOTICES TO CORRESPONDENTS.

APRICOTS FROM SEED: S. E. B. File the edges of the stone, but not so as to let moisture into the cavity; lay them in soil in a cold frame, covering them about 6 inches. The soil should not be allowed to freeze. In the spring take them out, and sow in drills on a south border, about as deep as Broadbeans are sown.

CARPET BEDDING DESIGNS: Decorator, Handy-book of the Garden, D. Thomson. Blackwood & Sons, Edinburgh and London.

CUCUMBERS DYING OFF: A. H. W. The loss of the plants is probably due to the presence of eelworms. Kindly send bits of roots and tops.

DECAYED TREE: De la Bere. Support the trunk by props or guy-lines. Remove all dead wood and fungus so far as possible. Swab out the cavity with carbolic acid in strong solution, then fill up with broken bricks or cement. The object is to prevent the entrance of water and of fungus spores so far as possible, and by watchfulness and attention much may be done. Remember the acid is a violent poison and caustic, and be careful in using it accordingly.

FUNGUS ON PEARS: P. The leaves are infested with a species of Gymnosporangium. Better remove all leaves (this will not now injure the trees), and burn them. The fungus passes another (teleutospore) stage on Junipers. Kindly examine any of these trees in your neighbourhood, and if you find a fungus on them, send us specimens.

GERANIUM: F. B. Your specimen had fallen when received here.

LEGAL QUESTION: G. M. We are not lawyers, but we do not believe for one moment that a lady in the condition you mentioned would be any more exempt from the consequences of petty larceny than any other citizen.

LUCERNE: J. S. Sow in April in rows 1 foot apart on light calcareous loam well cultivated. It will yield one cutting the first year, and three and even more the following seasons. A top-dressing of manure should be applied, and weeds kept down. The crop will remain productive for six or seven years if properly cultivated. The roots are very long, fleshy, and deep-rooted, so that the plant does not suffer from drought so much as some plants.

NAMES: P. D. Mdlle. Marie Planchon, that of a fine semi-double white-flowered Azalea indica. Madame J. Wolf is unknown to us.

NAMES OF FRUITS: T. H. 1, Gloria Mundi; 2, Herefordshire Pearmain; 3, Kerry Pippin; 4 and 6, not recognized; 5, Beurré de Capiaumont.—Carter, Page, & Co. 5, Irish Peach; 9, Dumelow's Seedling; 10, Court of Wick; 11, King of the Pippins; 13, Tower of Glamis.—J. Millburn. Plum decayed; Apple not recognized.—J. M. D. 3, Bedfordshire Foundling; 4, Green Balm; 5, Adamsi Pearmain; 8, Devonshire Quarrenden.

NAMES OF PLANTS: H. K. Stanhopea Wardii aurea, Cattleya Warscewiczii (syn. C. gigas), Cypripedium

Godefroya. We fail to trace the slightest departure from the typical C. Godefroya in this.—I. O. Eccremocarpus scaber.—H. H. Rose 1, Marquise Bulbano; 2, too far gone to be recognized.—A. M. Clary (Salvia sclarea).—R. H. B. An Artemisia, closely allied to Tarragon, but not the true form.—W. S. S. 1, Spiraea Lindleyana; 2, Spiraea, next week; 3, next week; 4, Berberia Darwinii; 5, B. empetrifolia, probably; 6, B. stenophylla; 7, B. vulgaris.—A. K. Calycanthus floridus.—G. M. A. 1, Impatiens Roylei; 2, Euphorbia chamaecyparissus; 3, Dipladenia boliviensis; 4, Croton volutum; 5, Campanula, next week; 6, Pelargonium, cannot name; send to some florist.—J. B. 1, Adiantum formosum; 2, Pteris argyrea; 3, Adiantum hispidulum; 4, Selaginella Widenovii; 5, Pteris serrulata cristata; 6, Asplenium fœniculaceum.—J. H. Centradenia rosea, Catasetum macrocarpum. Fruita next week.—M. M. R. An Asclepias, perhaps A. verticillata; but it is impossible to tell from such a scrap.

NOTICE TO LEAVE EMPLOYMENT: T. B. According to your agreement you are a yearly servant, and the proper amount of notice on either side would be 3 months, but in practice it is considered that 1 month is sufficient. Forfeiting wages in lieu of notice on your part would be a matter of arrangement with your employer.

PEAR DISEASED: Subscriber & S. H. & L. H. The upper surface of leaves has been eaten by slugworms (Selandria atra). Give several dustings, of quick-lime or syringe with soft-soap suds and lime water. Remove about 4 inches of surface soil in winter, and burn it to destroy cocoons. The mussel scale (Mytilaspis pomorum) on the branches of one of the specimens must be removed by applying soft-soap suds and sulphur with a stiff brush, repeat till the trees are quite clean.

QUEENSTOWN BOTANIC GARDEN: C. G. H. We are interested in seeing the directors of this establishment complaining, as well they may, of the "foolish regulations" of the Phylloxera Act as carried out at Cape Town. Such regulations are useless, except in the case of Vines, the more so "seeing no restrictions are in force in Natal, the Transvaal, and the Orange Free State."

SITUATION IN A GARDEN WHERE VINES AND PEACHES ARE EXTENSIVELY GROWN: F. B. Advertise.

STOVE TO HEAT A SMALL GREENHOUSE: Melina. Any of the small double cylinder, upright boilers, of simple construction, larger at the bottom than the top, and fed from the top, would answer your purpose. They do not need any brickwork setting, or to stand under cover. See that the ash-pit door acts perfectly; the bars are made to drop, so that clinkers and ashes can be readily removed, and the chimney is provided with a close-fitting damper. These boilers are economical of fuel, and can be made to burn anything, and fast or slow by regulating the ash-pit door and the damper.

TABLE DECORATION: Decorator, Floral Decorations for Dwelling Houses, Annie Hassard, (Macmillan & Co., Bedford Street, Covent Garden, London, W.C.)

TRAM STABLE DUNG: A Young Gardener. The materials consisting of sawdust and horse-droppings, they are not fit for making a Mushroom-bed. If you could sift out the sawdust and use the manure only, mixing it with short stable-litter, it might be employed for the purpose.

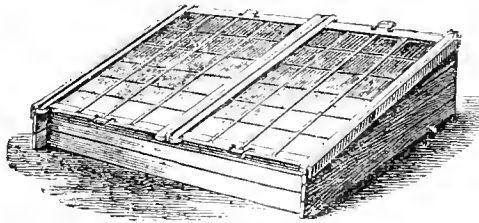
TREE SEEDS: B. The catalogue you refer to is that of J. M. Thorburn & Co., New York.

WINTER MOTH AND AMERICAN BLIGHT ON APPLE: F. S. Do not use tar, it is injurious. Put good cart-grease on grocer's butter-paper, use a good daub, and apply not later than the middle of October. The hand must be long enough for the ends to overlap well, fasten these by paste, and secure with piece of bast; apply grease with piece of flat wood. For American blight wash with 2 lb. of soft soap, and 1/2 lb. of sulphur in a gallon of water. Remove rough scaly bark and burn it.

COMMUNICATIONS RECEIVED.—Messrs. Krelage, Haarlem.—T. Meehan, Philadelphia.—A. B. M. D.—C. C.—G. N.—A. W. C.—Dr. Kranzhu, Berlin.—M. D.—W. H. W.—Consu Lehmann, Niddellin.—J. M. Thorburn & Co., New York.—C. Toope.—J. M. M. F., Philadelphia.—F. R. L.—E. W. O.—A. D.—J. W.—J. B. & S.—H. T.—J. H.—C. G.—T. K. & Co.—Ted.—W. J. S.—R. W.—W. Smythe.—Pioneer.—D. O. C.—D. T. F.—C. W.—J. M.—J. R. J.—W. G.—J. J. W.—A. P.—J. O.—N. R. D.—W. P.—E. J.—W. J. S.—R. Hartland.—C. Millard.

DIED.—Mr. G. G. HARTLAND, at Worthing, on September 19, the Hon. Secretary of the Chiswick Horticultural Society.

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3 " 12 ft. by 6 ft...	PRICES,	4	2	6
4 " 16 ft. by 6 ft...		5	5	0
5 " 20 ft. by 6 ft...	CARRIAGE PAID.	6	7	6
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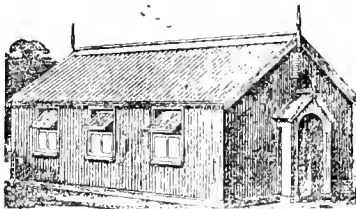
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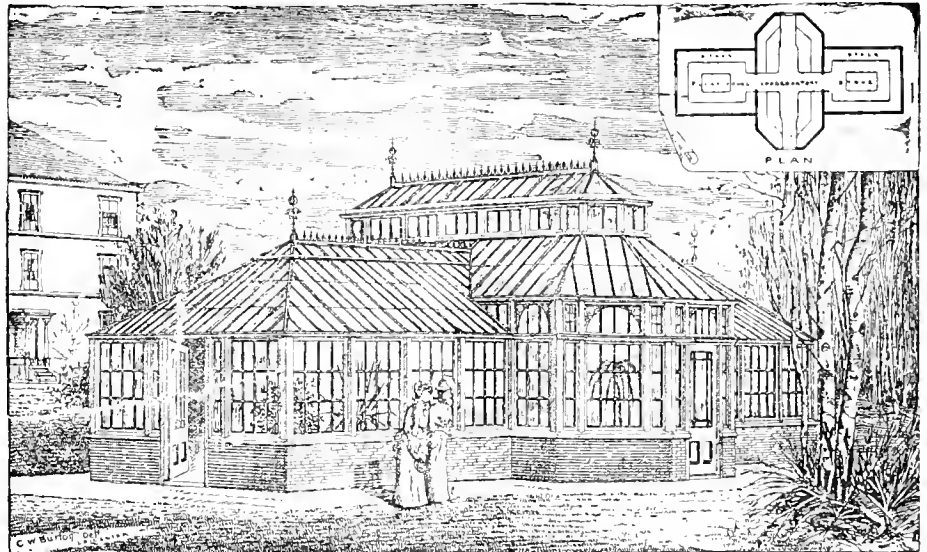
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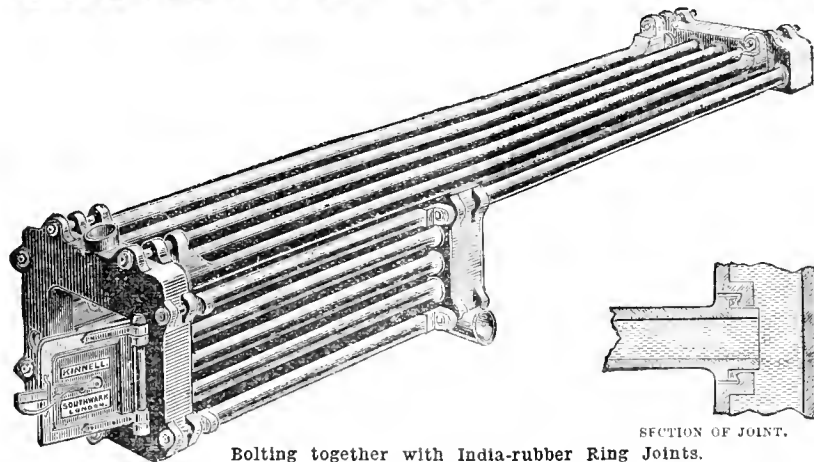
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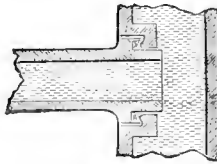
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A.	11 pipes at top, 4 each side of furnace, 8 water-bars ...	Length. ...	Heating-power in 4-inch pipe. ...	£	s.	d.
B.	4 feet 6 in. long ...	1,200 feet ...	13	12	6
C.	6 feet 6 in. h. long ...	1,600 feet ...	15	2	6
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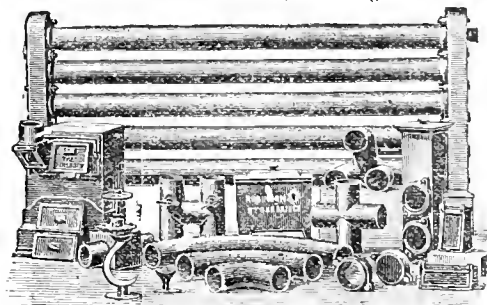
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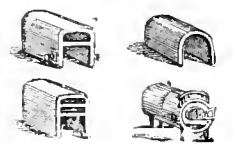
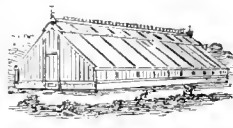
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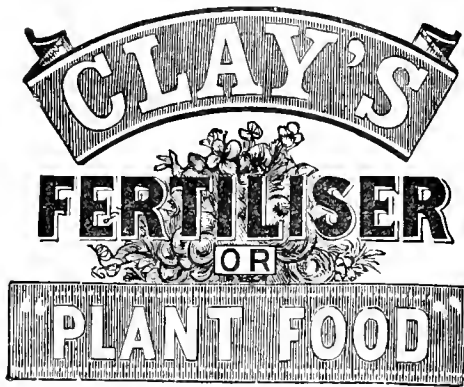


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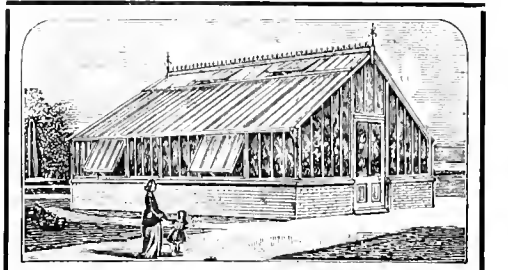
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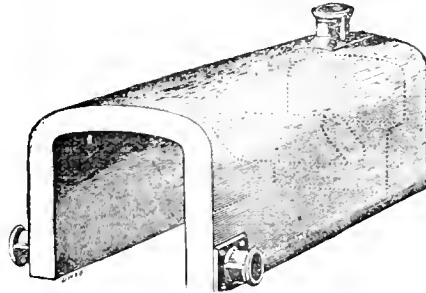
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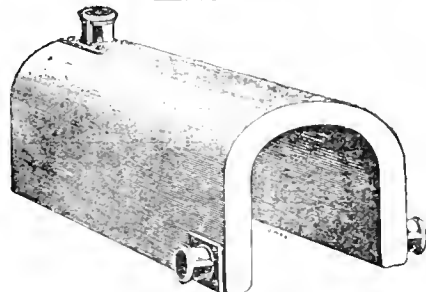
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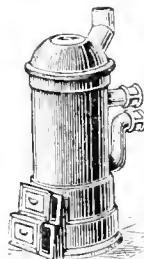
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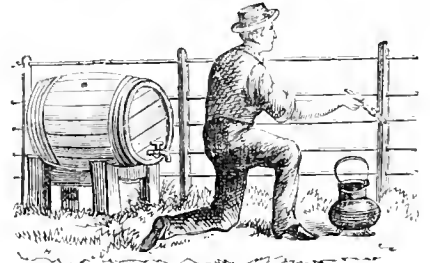
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NOW READY, Blush Souvenir de la Malmaison CARNATION LAYERS, strong, well-rooted stuff, 7s. 6d. per doz.; postage and packing free. Cash with order.
E. S. NIGHTINGALE, Rohais, Guernsey.

BERLIN LILY OF THE VALLEY for Forcing, best quality only. First importation of half a million in November. Price 35s. per 1000, 4s. per 100. Order early of—
WALSHAW AND SON, Scarborough.

ORCHIDS A SPECIALTY.—Please write for New Illustrated Price LIST of well-established, healthy, and easily-grown plants.
W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N. Nursery, Orchard Road.

LOVEL'S YORKSHIRE STRAWBERRIES.—Strong, healthy, and well-rooted runners of Thury, Noble, Paxton, and President. Price, 3s. per 100, carriage paid; 20s. per 1000, on rail. Sample dozen, 6d. LIST free.
W. LOVEL AND SON, Driffield.

DOUBLE WHITE NARCISSUS.—Fine Strain, 25s. per 1000, on rail. Sample 50 by post for 2s., or 100 for 3s. 6d. Cash with order.
J. J. CLARK, Goldstone, West Brighton.

SPECIMEN ERICAS.—For Sale, three fine Plants, 3 feet in diameter, of E. œmula, E. farinana, and E. obbata purpurea.
R. WATTIE, Victoria Gardens, Tydu, Newport, Mon.

VINES.—Strong planting Canes, 6 to 8 feet long, of the following sorts, to offer cheap:—Black Hamburg, Gros Colmar, Alicante, and Muscat of Alexandria. Price on application to
ARTHUR MATTHEWS, Nurseries, Waltham Cross.

SUTTON'S BULBS.—The FINEST of the SEASON.—“The Bulbs you sent to Beach Mount have been splendid—the best I have had for years.” Mr. D. A. Marsh, gardener to R. Neil, Esq.

SUTTON'S HYACINTHS, TULIPS, NARCISSUS, CROCUS, SNOWDROPS, and other spring flowering bulbs, are now ready for delivery. For full particulars, see Sutton's Bulb Catalogue.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.
Bulb orders value 5s. and upwards, carriage free.

Dutch Flower Roots. Carriage Paid.
DICKSON AND ROBINSON'S CATALOGUE, specifies all the best varieties in first-size Bulbs at moderate prices. Post free.
HYACINTHS, Choice named, for Pots, 40s. to 80s. per 100. HYACINTHS, distinct colours for Bedding, 15s. to 21s. per 100. HYACINTHS, White, Red, and Blue, mixed shades, 12s. per 100. TULIPS, Single and Double, by name, from 5s. per 100. CROCUS, by name, and mixed shades, 1s. 6d. to 3s. per 100. NARCISSUS, LILUMS, GLADIOLUS, IRIS, FEEZIAS, &c. Seed Warehouse, 12, Old Millgate, Manchester.

Azaleas, Camellias, Rhododendrons, Palms, ORCHIDS, &c.—At LOW PRICES.
PLANTS GROWN SPECIALLY FOR ENGLISH TRADE.
C. VUYLSTEKE, Nurseryman, Loochristy, Ghent, Belgium.
Wholesale CATALOGUE now ready, and may be had free, of—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

DAFFODILS!!!—The Cream in all the sections. Grown in undisturbed Hundred-year-old pasture Loam; and better still, Irish. Can be procured from Hartland's Unique Collection at Cork. Illustrated Price Lists free, and immediate delivery to all parts of the United Kingdom.
WM. BAYLOR HARTLAND, F.R.H.S., seedsman, Cork.

CHOICE FRUIT—CHOICE FRUIT.
Highest Market Prices guaranteed. Prompt cash.
Address—HENRY RIDES, Centre Avenue, late 38, Hart Street, Covent Garden, W.C.

J. W. BARNHAM Receives on Commission, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

W. D. BUNDAY, of Covent Garden Market, and 37, Exeter Street, W.C., having commenced to SELL on COMMISSION, is OPEN to RECEIVE TOMATOS, GRAPES, &c. Good references.

WANTED, large PALMS, FERNS, ARAUCARIA EXCELSIOR, &c. for Rockwork, in a large Conservatory. State price, size, and sorts.
WM. CLAPHAM, Landscape Gardener and Rock Builder, Bramhall Park, Stockport.

WANTED, GERANIUM CUTTINGS, in quantity:—
JACOBY, VESUVIUS, WEST BRIGHTON GEM, &c. Cash, or EXCHANGE STRAWBERRY PLANTS.
LAXTON BROTHERS, Nurserymen, Bedford.

WANTED, a good COLLECTION of FOLIAGE PLANTS for Conservatory.
J. J. Mr. Waters, Stationer, Chislehurst.

WANTED, OLD GERANIUMS from Flower Beds. State name and price per 100 to H. SMITH, Nurseryman, &c., Radcliffe-on-Trent, Notts.

WANTED, CALCEOLARIA CUTTINGS, good strong stuff, Golden Gem and Aurea floribunda. Any quantity. Samples and price per 1000 to H. TITE, Hampton, Middlesex.

WANTED, BARRON'S PATENT TREE LIFTER, in good condition. State size and price to MAWSON BROS., Windermere.

CARTERS' CHOICE BULBS, as supplied to H.M. the Queen, the Royal London Parks, and the London County Council. For full particulars, see CARTERS' BULB CATALOGUE, containing a beautifully Coloured Plate of the White Easter Lily, gratis and post-free to Messrs. Carters' customers; price 6d. to the general public, the amount to be deducted from first order.
237 and 238, HIGH HOLBORN, LONDON, W.C.

FOR SALE, 60 Pot PEACHES and NECTARINES (3-yr.), Named Sorts. Also 30 VINES, consisting of Black Hamburg, Alicante, Muscat, &c.
CHIPPINGDALE AND CO., The Paddock, Romford.

TUBEROUS-ROOTED BEGONIAS, SINGLE and DOUBLE.
I beg to intimate that my splendid Collection of the above is NOW IN FULL BLOOM in THOUSANDS. For beauty of form and novelty of colour they are not surpassed.
Inspection invited.
JOHN DOWNIE, Beechill Nursery, Murrayfield, Edinburgh.

Fruit Trees a Specialty.
STRAWBERRIES.—All the best of the New and Old Varieties. One of the best Collections in the Trade. Send for Descriptive CATALOGUE, the most complete issued. Special quotations for quantities to grow for Market.
FRUIT TREES of all kinds. Orders booked now for autumn delivery.
JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

PTERIS VICTORIE.—The best new plant of the year, nice plants, 3s. 6d. each; 2 for 6s.; 6 for 15s., free by post.
ASPLENIUM PTEROPUS.—New and rare, long shining dark green fronds, beautifully recurved, a splendid market or table Fern. Nice plants 2s. 6d. each; 2 for 4s. Post free. Cash with order.
WILLIAM GOOLBY, Edgemoor Nursery, Brierfield, near Burnley, Lancashire.

SAMUEL SMITH, NURSERYMAN, Slaghills Nursery, near Matlock, Derbyshire, makes very liberal Selections of 100 Sorts of ROCK PLANTS, and 100 Sorts of BORDER PLANTS; strong, from open ground; in one plant of a sort, at 15s. 8d. per 100; if taken in three plants of a sort, at 10s. 6d. per 100. LIST, free on application.

DOBIE'S AUTUMN CATALOGUE of the best HYACINTHS, TULIPS, ROSES, FRUIT TREES, PANSIES, VIOLAS, &c., can be had post-free on application. Everyone interested in any of the foregoing is invited to send for a copy.—DOBIE AND CO., Seed Growers and Florists, Rothsay, Scotland.

THE CREAM of all STRAWBERRIES will be found in the Four Varieties named:—
RUSKIN, for Forcing Early, in pots, 25s. per 100.
BRITISH QUEEN, for Forcing Late, in pots, 15s. per 100.
LATEST OF ALL, LAXTON'S Runners, 15s. per 100.
OXONIAN, a Topper, 6s. per 100.
Plants Guaranteed best in the Trade.
R. GILBERT, High Park, Stamford.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

ROSES in POTS for Sale—Room wanted.—Several thousand Niphetos, Catherine Mermet, Perle des Jardins, Isabella Sprunt, Madame Falcot, Safrano, Souvenir d'un Ami, Marie Van Houtte, and Maréchal Niels. Grand stuff, in 12 and 16-pots. Price, from 25 per 100.
GUYVER BROS. AND LAWSON, Durant's Nursery, Ponder's End, Middlesex.

J. WEEKS AND CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers.
King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsman, and direct from us. 1 cwt. and over carriage paid. London Agent—MR. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovelly, Galashiels, N.B.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers.

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Dutch Bulbs.—Great Unreserved Sales.
EVERY MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., FIVE DAYS WEEKLY, as above, at half-past 11 o'clock each day, LARGE CONSIGNMENTS of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from HOLLAND. Lotte to suit the Trade and Private Buyers.
On view morning of Sale, and Catalogues had.

Wednesday Next.
AZALEAS, and OTHER PLANTS from BELGIUM.
MESSRS. PROTHEROE AND MORRIS will include in their SALE of BULBS, on WEDNESDAY NEXT, a consignment of AZALEAS, PALMS, and other PLANTS, from BELGIUM.
On view morning of Sale, and Catalogues had.

Enfield Highway.
UNRESERVED CLEARANCE SALE, by order of Mr. George Perry, Jun., who is relinquishing business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, 2, Bedford Road, Green Street, Enfield Highway, N., eight minutes' walk from Brinsdown Station, G.E.R., on TUESDAY NEXT, October 6, at 12 o'clock, 18,000 HERBACEOUS PLANTS in grand assortment; 12,000 PANSIES, all of the choicest named kinds; 20,000 CARNATIONS (1,000 in pots), comprising Germania, Mrs. Reynolds Hole, Mrs. Frank Watts, Mrs. Wardle Braggart, Mr. G. Perry, Florence Perry, and others; also a large number of choice Seedlings, 10,000 PINKS, 1000 VERONICAS, 5000 ROSES, on own Roots; 600 AZALEAS and BOX, Erection of Shed, &c. Six weeks will be allowed for removal of Roses.
May be viewed any day prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Walham Green.
CLEARANCE SALE of GREENHOUSE LIGHTS, PIPING, and STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, The Nursery, Farm Lane, Walham Green, on WEDNESDAY NEXT, Oct. 7, at 12 o'clock, by order of Mr. W. Brewin, without the least reserve, 30,000 FERNS, 1000 CHRYSANTHEMUMS, FICUS REPENS, BEGONIAS, 20,000 GOLDEN and GREEN EUONYMUS, the erections of eleven GREENHOUSES, HOT-WATER PIPING, BOILERS, 250 PIT LIGHTS, and FRAMES, SHEDS, MARKET VAN, and other items.
On view two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Leigh-on-Sea, near Southend, overlooking the Channel.
FREEHOLD BUILDING PLOTS on the West-cliff Estate, adjoining the Leigh Railway Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, in a marquee on the Estate, on Tuesday, October 6 at 1.30 o'clock, the FIRST PORTION of the above valuable estate, comprising 120 lots, mostly on the main road, including several sites of plots and a grand hotel site of nearly an acre. Immediate possession. Free conveyances and eas. payments. A limited number of tickets for special train will be issued to intending purchasers, at 2s. each. Luncheon will be provided.
Particulars and plans had of A. U. Higgins, Esq., on the Estate; Messrs. Pollock & Co., Solicitors, 6, Lincoln's Inn Fields, W.C.; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C., and Leytonstone.

Leyton E. By Order of the Mortgagee.
The VALUABLE LEASE of the NURSERY, 87 years unexpired; and the ERECTIONS of SEVERAL GREENHOUSES, PIPING, and BOILERS; 6000 CHRYSANTHEMUMS, in 16 and 24-pots; 600 MYRTLES, large WHITE AZALEAS, MAIDENHAIR FERNS, TUBEROSES, TULIPS, and other STOCK; VAN, BARROWS, and TOOLS, in suitable lots.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above by AUCTION, on the Premises, the Nursery, Beaumont Road, Leyton (between Leyton and Hoe Street Stations, G.E.R.), on THURSDAY NEXT, October 8, at 12 o'clock.
May be viewed. Catalogues had of Mr. HART, at the premises; of Messrs. W. H. SMITH and SON, Solicitors, Graham House, Old Broad Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Friday Next.
ESTABLISHED and IMPORTED ORCHIDS.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 9, at half-past 12 o'clock, IMPORTED ORCHIDS, from Messrs. Charlesworth, Shitworth & Co.; 50 lots of selected ESTABLISHED ORCHIDS, from a private Collection; and 200 lots of ESTABLISHED ORCHIDS from well-known growers.
On view morning of Sale, and Catalogues had.

Fulham, S.W.
10 minutes' walk from Parson's Green Station.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the premises, the Cole Hill Nurseries, Fulham, S.W., by order of Mr. M. M. Smith, on TUESDAY, October 13, 1891, at 12 o'clock, a large quantity of well-grown NURSERY STOCK, comprising 1,000 Box, 3 to 4 feet; 3000 Aucubas, 4 to 7 feet, amongst them a large number of very fine plants; Thorns, Poplars, Laburnums, and other Standard Trees. Flowering Shrubs in variety, 300 Irish Ivies, 6 to 10 feet, 400 clumps of Iris, Rhododendrons, Hollies, Cupressus, and other Stock.
May be viewed one week prior to sale. Catalogues had on the premises, and of the Auctioneers.

Isleworth.
SPECIAL ANNUAL TRADE SALE of thousands of beautiful, fully-grown young CONIFERE and GOLDEN EUONYMUS, suitable for immediate potting, window-boxes, or for growing out, by order of Messrs. C. Lee & Son.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, five minutes' walk from Isleworth Station, on THURSDAY NEXT, October 8, at 12 o'clock precisely, in consequence of the large number of lots, 4000 best Silver and Golden EUONYMUS, splendidly coloured; PHILLYREA LAURIFOLIA, and thousands of small Boxed Shrubs, including Junipers, Cupressus, Retinosporas, Aucubas, Thuopsis, Cedrus deodara, and Thunias; 6000 CONIFERS, from 1 to 8 feet; including Thuiopsis dolabrata, T. borealis, Picea Nordmanniana, C. erecta viridis, Abies Menziesii glauca, C. Lawsoni, &c.; 1000 BOX, 9 inches to 2 feet; 1000 AZALEAS, 1 to 2 feet; 2000 YEWES, 9 inches to 4 feet; 1000 Standard and Pyramid PEARS; 1000 Green HOLLIES, 1 to 4 feet. Hundreds of ARAUCARIA IMBRICATA, 9 inches to 3 feet; Lombardy POPLARS, LIMES, &c.; 500 AZALEA MOLLISS, 1 to 2 feet, splendidly budded; 1000 Standard and Half-standard VICTORIA PLUMS, GREENHOUSE PLANTS and CAMELLIAS; FIGS, in pots; well-berried SOLANUMS, in pots; 1000 TEA and H.P. ROSES, and other STOCK.
May be viewed. Catalogues may be had on the Premises; at the Royal Vineyard Nursery, 2, Hammer-smith Road, W.; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Tunbridge Wells.
About 1½ miles from the South Eastern Railway Station, and 1 mile from Southborough.
IMPORTANT to GENTLEMEN, BUILDERS, and OTHERS.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Charlton to SELL by AUCTION, on the Premises, The High Brooms Nurseries, Tunbridge Wells, on FRIDAY NEXT, October 9, at 12 o'clock precisely, a quantity of thriving and well-grown NURSERY STOCK, including a great assortment of Coniferae and Evergreen Shrubs, 2000 American Arbor Vite, suitable for hedges; 750 Thuja Lobbi, 600 Cupressus Lawsonii, various sizes; 500 Laurels of sorts, 500 Standard and Dwarf Roses of the leading kinds, 900 choice Herbaceous Plants, in best named kinds; Flowering Shrubs, Hardy Climbers, Red and Black Currants, &c., specially lotted to suit private buyers.
May be viewed any day prior to Sale. Catalogues may be had on the premises at the Seed Warehouse, 37, Ye Pavilions, Tunbridge Wells; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Woking.
UNUSUALLY IMPORTANT SIX DAYS' SALE of exceptionally well-grown NURSERY STOCK, growing on portion of the land required for other purposes, in the finest possible condition for transplanting, and embracing the most important lot of stock offered for Auction for many years, the quality of which is unsurpassed in the Trade.
GREAT UNRESERVED SALE by order of the Trustees of the late Mr. George Jackman.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Woking Nurseries, Woking, Surrey, on MONDAY, October 12, and FIVE FOLLOWING DAYS, at 12 o'clock precisely each day, several acres of unusually well-grown NURSERY STOCK, comprising 10,000 Conifers, 3 to 7 feet; thousands of smaller Evergreens and Conifers; 1500 Picea Nordmanniana and Pinus; 4000 Box, in variety, 1 to 4 feet; 1000 Aranea imbricata, 1 to 3 feet; 3000 Aucubas, in variety, 1 to 4 feet; 2000 Laurels of sorts, 2 to 5 feet; 2000 English and Golden Yews, 2 to 7 feet; 1000 Gold, Silver, and Green Hollies; 5000 deciduous Flowering Shrubs; 5000 named Rhododendrons, 1 to 3 feet; 2000 Limes, 5 to 10 feet; 1000 Purple Beech, 6 to 10 feet; 1000 Maples, in variety, 7 to 10 feet; Forest Trees in great quantities; 60,000 common Ash, 2 to 5 feet; 50,000 Quick, 1 to 2 feet; 10,000 English and Turkey Oaks, 2 to 5 feet; 6000 English Laurels, 3 to 5 feet; a splendid collection of Ornamental Trees for park and avenue planting, 10 to 20 feet; 5000 Standard and Feathered Plums; Damsons, Quinces, &c.; 2000 Standard and Feathered Flowering Almonds, Peaches, and other Stock.
Goods can be transmitted from Woking Railway Station to all parts without change of truck.
The Auctioneers have personally visited the nurseries and desire to call attention of intending purchasers to this Sale, as it is undoubtedly the most important Auction of Nursery Stock that has been held for many years.
An inspection will well repay a visit by those contemplating planting during the season.
May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday, October 13.
IMPORTANT SALE of a celebrated FRENCH COLLECTION formed by the—
COUNT HORACE DE CHOISEUL. Without Reserve.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 13, at 12.30 o'clock, Without Reserve, the celebrated collection of Orchids formed during the last ten years by the COUNT HORACE DE CHOISEUL, formerly President of the Floral Department at the International Exhibition of 1889.
This collection is composed of only the choicest plants. Over 100 of the Cattleyas have 30 to 40 bulbs, and of the 100 plants which will be offered, no inferior variety has been included by this well-known Amateur.
On view morning of Sale and Catalogues had.

Sunningdale, Berks.

ANNUAL SALE, without Reserve.—SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, carefully prepared for removal; by order of Mr. Charles Noble.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the premises, The Nurseries, Sunningdale, close to Sunningdale Station, on MONDAY NEXT, October 5, and five following days, at 12 o'clock precisely each day; a splendid lot of Standard and Eu-b Rhododendrons, of the best kinds, many of them extra fine specimens for which these Nurseries are so famed; good bushy Ponticum Rhododendrons, 1 to 2½ feet; Flowering Shrubs, in great variety. Many thousands of Conifers, 3 to 6 feet, consisting of Cupressus, Thujas, and Myopsis, specially adapted for hedges or borders; a large assortment of specimen Trees and Shrubs, including Golden Retinosporas, variegated Hollies, Abies, and others for effective planting. 10,000 oval-leaved Privet; a fine quantity of Mahonia Aquifolia, Hardy Heaths, Ivies; a large collection of Standard and Pyramid Apples, Damsons, Pyramid Pears, Gooseberries and currants of the most approved kinds; Cob Nuts, and other Stock.
Luncheon will be provided for intending purchasers, and arrangements can be made with Mr. Noble to lift and forward lots to all parts of the Kingdom at the mere cost of labour incurred and material used.
The Stock may now be viewed. Catalogues can be obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tuesday, October 20.
The COLLECTION of ORCHIDS from Old Park, Ventnor, Isle of Wight.
MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL the above by AUCTION, at their Rooms, on TUESDAY, October 20.

Ealing.—Expiration of Lease.
CLEARANCE SALE of about 11,000 CONIFERS and other STOCK, by order of Messrs. Hart Bros., whose Lease of this branch Nursery will shortly expire.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Castle Bar Nurseries, Ealing, on WEDNESDAY, October 21, at 12 o'clock, the whole of the NURSERY STOCK.
May be viewed. Catalogues had on the Premises; at the Grove Nursery, Ealing; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wimbledon.—Expiration of Lease.
CLEARANCE SALE of about 4½ acres of thriving and well-grown NURSERY STOCK, growing upon a portion of the Nursery the lease of which is about to expire, by order of Messrs. D. S. Thomson & Sons.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, the Nurseries, Wimbledon, on MONDAY and TUESDAY, October 26 and 27, at 12 o'clock precisely, Without Reserve, 9,000 Fruit Trees, 5,000 Gooseberries and Currants, a large quantity of other stock, particulars of which will be announced.
Catalogues of the Auctioneers.

Havant.—Expiration of Lease.
MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Ewing & Co. to SELL by AUCTION, on the premises, the Sea View Nursery, Havant, on WEDNESDAY and THURSDAY, October 28 and 29, at 12 o'clock, the first portion of an extensive Nursery Stock, growing upon the leasehold Nursery, the tenancy of which will shortly expire.
The Freehold Nursery of about 3 acres with Residence is to be LET or SOLD. Particulars on application to the Auctioneers.

Windlesham Nurseries, Bagshot, Surrey.
GREAT ANNUAL SALE of the exceedingly well-grown NURSERY STOCK, carefully prepared for removal, and lotted to suit the Trade and large Buyers, by order of Mr. Richard Mason, whose reputation as a Grower of Nursery Stock is so well known.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Windlesham Nurseries, Bagshot, Surrey, twenty minutes' walk from Bagshot, and 2½ miles from Sunningdale Station, on MONDAY, October 19, and three following days, at 12 o'clock precisely each day, several Acres of exceptionally well-grown NURSERY STOCK, comprising:—

- 5,000 hybrid Rhododendrons to name, 1½ to 2 feet.
- 3,000 Andromeda floribunda, well set for bloom
- 1,000 Azalea pontica, 1½ to 2 feet
- 10,000 Rhododendron ponticum, 1½ to 3 feet
- 5,000 Berberis aquifolium
- 2,000 Berberis Darwini
- 2,000 Pinus austriaca, 2½ to 4 feet
- 1,000 Spruce Firs, 2½ to 8 feet
- 1,000 Pinus strobus, 5 to 9 feet
- 2,000 Portugal Laurels
- 2,000 Colchicum Laurels, 3 to 5 feet
- 5,000 Oval-leaved Privet, 2½ to 4 feet
- 4,000 Thuja Lobbi, Abies, Thuiopsis borealis, and Cedrus, 2 to 7 feet
- 10,000 strong Quick
- 1,000 Coniferae and Ornamental Trees, 1 to 10 feet

10,000 Retinospora plumosa aurea, beautifully coloured, and others suitable for potting and boxes; 10,000 Cupressus Lawsoniana, 2 to 6 feet; 500 erecta viridis, 3 to 3½ feet; Fruit Trees, and other Stock.
The Auctioneers will be pleased to execute Commissions for Gentlemen who cannot attend, and Mr. Mason will lift and forward any lots.
May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Liverpool.
GREAT UNRESERVED CLEARANCE SALE of well-grown NURSERY STOCK, by order of the executors of the late Mr. George Cunningham (Messrs. George Cunningham & Son), in consequence of the Land being required to be cleared for Building purposes.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Oak Vale Nursery, Old Swan, Liverpool (10 minutes' walk from Broad Green Station, L. & N. W. Ry.), on MONDAY, October 19, and three following days, at 12 o'clock precisely each day, the first portion of the well-grown and valuable NURSERY STOCK, comprising great quantities of Trees and Shrubs, 1 to 6 feet; splendid Specimen Variegated and Green Hollies, 2 to 6 feet, embracing nearly all the hardy varieties in cultivation; several hundreds of Silver and other varieties, 4 to 9 feet; a large assortment of Deciduous Flowering Trees, Shrub, thousands of Rhododendron ponticum, Oval-leaved and Common Privet and Common Hollies, suitable for Hedges; large quantities of Fruit Trees, 4 to 10 feet; 30,000 strong transplanted Quick; together with a fine collection of Fruit Trees. The Stock may be viewed any day prior to the Sale. Catalogues can be obtained on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Note.—The Valuable Freehold Building Estate of about 13½ acres, with the important and extensive Frontages to Broad Green and Nursery Road, ready for immediate development, is for Sale by Outside Treaty. Particulars of the Auctioneers.

Groombridge near Tunbridge Wells.
HOLLAMBY'S NURSERIES.
GREAT UNRESERVED SALE of valuable NURSERY STOCK in the best possible condition for removal.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, as above, close to the Groombridge Station, on THURSDAY and FRIDAY, October 22 and 23, at 12 o'clock precisely each day, by order of Mr. Edwin Hollamby, enormous quantities of CONIFER, Standard, Dwarf, and Climbing ROSES, 100,000 LARCH and Scotch FIRS, ASH, and Spanish CHESTNUT, 20,000 CUPRESSUS LAWSONII and THUJA LOBBII, 10,000 strong transplanted QUICK, 10,000 named and other RHODODENDRONS, 500 Ghent and Mollis AZALEAS, 500 ANDROMEDA FLORIBUNDA, 5000 extra strong SEAKALE, for forcing; 10,000 PINUS AUSTRIACA, 3000 Hardy CLIMBERS, established in pots; Portugal, Caucasian, and other LAURELS.

May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Valuable Collection of Established Orchids.
MR. J. C. STEVENS has received instructions from the Executors of the late G. Neville Wyatt, Esq., of Lake House, Cheltenham, to **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY, October 21 and 22, at half-past 12 o'clock precisely each day, his highly important and valuable COLLECTION of ESTABLISHED ORCHIDS (without the least Reserve), which contains many fine things, amongst which will be found:—

- | | |
|--|--|
| Cypripedium Mooreana | Laelia Pilehieri |
| „ Mesuresiana | Masdevallia Veitchii grandiflora |
| „ Chantini | Anguloa Ruckeri sanguinea, grand form |
| Oncidium Ornithorhynchum album | Oncidium incurvum album |
| Epidendrum Walisi | Ada aurantiaca |
| Batemannia Burtii | Laelia Wyatiana |
| Cologyne cristata lemoniaea, splendid specimen | Cattleya Mendelii, including many fine forms |
| Cypripedium hirsutissimum, splendid specimen | „ Skinneri ocellata |
| Lycaste Skinneri alba, several plants | „ exoniensis |
| Odoctoglossum Rossi Amesianum | „ gigas |
| „ uro-Skinneri, splendid specimen | „ Gaskelliana var. Dalhousiana |
| „ ramosissimum | Vanda Kimballiana |
| Cattleya labiata, autumn-flowering variety, true | „ Sanderiana, several plants |
| Anthurium Scherzerianum, Lake House variety, grand plant | Saccolabium Heathii, extremely rare |
| | Cologyne cristata, Chatsworth var. |
| | &c., &c., &c. |

A MOST BEAUTIFUL and LARGELY-FLOWERING VANDA CERULEA, a UNIQUE VARIETY. On view mornings of Sale, and Catalogues had.

Dutch Bulbs. Dutch Bulbs.
SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

In Large and Small Lots, to suit all Buyers.
MR. J. C. STEVENS will **SELL** by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half-past 12 o'clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving Weekly from well-known Farms in Holland. On view mornings of Sale, and Catalogues had.

Annual Sale of Nursery Stock.
THE DORKING NURSERIES—five minutes' walk from Dorking Station, L. B. & S. C., and Box Hill, S. E. Railway.

MESSRS. WHITE AND SONS are instructed by Messrs. Ivery & Son, to **SELL** by AUCTION, as above, on FRIDAY and SATURDAY, October 9 and 10, 1891, at 12 o'clock precisely, a great variety of THRIVING YOUNG NURSERY STOCK (in first-rate condition for transplanting), all having been moved during the last two years) including Aucubas, 1 foot to 2 feet; Box, Hollies, Portugal Laurels, Garden and Common Yews, 2 feet to 4 feet; Flowering Shrubs, in variety; Thuis of sorts; Abies Douglasii, Thujaopsis, Retinoparas, and Cupressus, of sorts, 2 feet to 6 feet; Ficus and Piceas, in varieties; Spruce and other Firs, of various heights; Cedars, Junipers, Araucarias, &c., and thousands of Quicks and Common Laurels, 2 feet to 5 feet; Acer variegata, Thorns, of sorts; Catalpas, Chestnuts, &c. Also a quantity of Ornamental Trees, Standard and Pyramid Apples, Pears, and Plums.

Catalogues may be obtained at the Inns and Hotels in the neighbourhood; at the place of Sale; and of the Auctioneers, Land Agents, and Valuers, High Street, Dorking, and on Fridays at Leatherhead.

THURSDAY NEXT.

CATTLEYA LABIATA VERA,

Semi-established in pans, and rooting freely.

SWAINSON'S OLD LABIATA, NOT GARDNER'S LABIATA.

CATTLEYA SANDERIANA,

Must not be confused with C. gigas Sanderiana.

CATTLEYA SPECIES,

Found in the Chryso-toxa district.

CATTLEYA GODSEFFIANA,

Absolutely new.

CATTLEYA,

THE NEW LABIATA (?).

MR. J. C. STEVENS has

received instructions from Mr. F. SANDER, St. Albans, to **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 8, at half-past 12 o'clock precisely:—

THREE HUNDRED GRAND PLANTS,

Selected, semi-established, of the true old autumn-flowering labiata. Imported four months ago, and are simply in splendid order and condition for blooming strong and fine.

Every plant guaranteed true, and all are unflowered in Europe.

CATTLEYA SANDERIANA,

Not gigas Sanderiana.

This is perhaps the finest Cattleya extant, and is absolutely new.

Natives say that the blooms are nearly a foot across.

CATTLEYA SPECIES.

From the same district as C. chryso-toxa. Flowers warm pink, with enormous crimson and gold labellums, section of Hardyana, Byrkeley Lodge var., shown at Drill Hall; Missiana, Young's, and Statter's vars.—rarely has there been seen a Cattleya so promising.

CATTLEYA GODSEFFIANA.

It must not be supposed from the habit of this Cattleya that it resembles C. Skinneri.

"It is an absolute new species."

Flowers round, 4 inches across, mauve sepals and petals, and striped lip.

CATTLEYA,

THE NEW LABIATA?

From a new locality, where Orchids have never before been gathered. Free flowering, and very showy and large.

SPRING-FLOWERING CATTLEYAS.

SUMMER-FLOWERING CATTLEYAS.

AUTUMN-FLOWERING CATTLEYAS.

WINTER-FLOWERING CATTLEYAS.

The following are a few of the kinds represented in the Catalogue:—

- | | |
|-----------------------------|----------------------|
| Cattleya Mendelii var. from | Cattleya Bowringiana |
| „ Cayaxia | „ Mossie |
| „ Triaca | „ Perevaliana |
| „ chry-otoxa | „ erii |
| „ Schrodera | „ Wiscowiczii |
| „ amethystoglossa | „ maxima peruviana |
| „ citrina | „ Walkeriana |
| „ dolosa | „ Lawrenceana |
| „ Eblorada | „ Gaskelliana |
| „ granulosa | „ crispa |
| „ Schofieldiana | „ velutina |
| „ crocata | „ autumnalis |
| „ guatemalensis | „ bulbosa, &c. |

On view morning of Sale, and Catalogues had.

Notice.

HIGHLY IMPORTANT FIVE DAYS' UNRESERVED SALE of beautifully grown NURSERY STOCK, all well-rooted, and carefully prepared for removal, and specially selected for the Sale. By order of Messrs. Isaac Matthews & Son.

MR. JOHN OAKS, Ash, will SELL by AUCTION, on the Premises, at the far-famed Bagnall Tite Oaks and Milton Nurseries, on OCTOBER 21 and FOLLOWING DAYS, without reserve, several Acres of NURSERY STOCK, grown to the highest perfection. The Nurseries are in an extremely cold situation, and all the trees are perfectly hardy, and grown to the highest perfection. Extremely well-rooted and well-furnished Hodgen's, Common, Maderiensis, Silver, and Gold Hollies in variety, 100,000 Rhododendrons various, a large quantity of all leading varieties of Conifers, Evergreens, &c., suitable for Ornamental Planting, Parks, Cemeteries, Pleasure Grounds, &c. Large quantities of Thorn, Quick, Ash, Elm, Alder, Privet, Austrian Pines, Spruce Fir, Chestnuts, Willows. All other trees for Woods and other plantations.

Catalogues seven days prior to Sale on application to the Nurseries, Milton, Stoke-on-Trent. Milton is the nearest station, L. & N. W. Railway. All trains met.

King's Acre Nurseries, near Hereford.

IMMENSE SALE OF UNUSUALLY WELL-GROWN NURSERY STOCK. Included therein: 6000 STANDARD, PYRAMID, and TRAINED FRUIT TREES, without the Least Reserve. As a portion of the Land will shortly be offered for Sale for Building purposes, it is absolutely necessary to clear the Ground.

ALEXANDER, DANIEL, SELFE, AND CO. will **SELL** by AUCTION, on the Premises as above, on TUESDAY, WEDNESDAY, and THURSDAY, October 20, 21, and 22, 1891, at 11 for 12 o'clock precisely, several Acres of first-class NURSERY STOCK.

Further Particulars in future Announcements, but the Stock may be Viewed at once.

CATALOGUES may be obtained at the Nurseries, or of the Auctioneers, Corn Street, Bristol (and 31, Old Jewry, London, E.C.).

WANTED, a quiet, comfortable HOUSE, Furnished, or Unfurnished, with from 10 to 30 Acres of light FARM LAND, suitable for a POULTRY FARM. Ornament no object. Heath country in Surrey preferred.

Apply, by letter, R. Mr. Lord, Stationer, 12, Gloucester Road, South Kensington, S.W.

WANTED TO RENT, on LEASE, a good DWELLING-HOUSE, with GLASS, and about an Acre or more of Land.

BLUNDELL, Florist, Enfield.

FOR DISPOSAL, an old established NURSERY, FLORIST, and SEED BUSINESS, about 20 miles from London. Nursery 2 acres, well-stocked; three Houses, Pits, Potting-sheds, &c., Dwelling House, and Shop. On Lease. Rent moderate.

Particulars on application to H. J., Gardeners' Chronicle Office, 11, Wellington Street, Strand, W.C.

TO BE SOLD.—Navarino Freehold Property, Worthing. TWO HOUSES, facing the Sea, large Gardens enclosed with high wall running south to north, planted with choice Fruit Trees; splendid soil, suitable for Grapes and Tomatoes. Room for 500 or 600 feet of glass. Also THREE COTTAGES.

Apply, W. MITCHENER, Navarino, Worthing.

To Seed Merchants and Others.

TO BE SOLD, the HOUSE, SHOP, WAREHOUSE, and PREMISES lately occupied by the late Mr. William Miller, deceased, situate at East Herrington, near Sunderland, and used by him as a Seed, Grain, and Oilcake Merchant, together with the Goodwill of the Business.

If not Sold, a suitable tenant would be accepted. Cards to View, and further particulars, may be obtained of WILLIAM BELL AND SONS, Solicitors, 23, Lambton Street, Sunderland.

Highgate.

TO BE SOLD or Let.—Excellent Detached RESIDENCE, with Stabling for 4 horses; 2 Cottages, and CHARMING GARDENS, including Tennis and other Lawns, Ornamental Water, small Orchard, Vineries, Peach House, Orchard House, &c.—in all an Acre and three-quarters; 10 Bed and Dressing-rooms, Bath-room, 3 Reception-rooms, Fernery, and well lighted Studio and buildings; more land available.

Messrs. PRICKETT AND ELLIS, Highgate; or Messrs. DEBENHAM AND CO., 80, Cheapside. (45502.)

To Nurserymen, Market Gardeners, and Florists.
TO BE LET, or SOLD (through the death of the Tenant), BUSINESS PREMISES, as a Going Concern, consisting of a House and Shop, four Greenhouses, and from 2 to 3 Acres of Land, as a Nursery, in the town of Abergweny, near the London and North-Western Railway Station. A thriving and profitable business has and is being carried on. Apply to EVAN JONES, Mardy Park, Abergweny; or, T. GLASBROOK RICHARDS, Solicitor, Swansea.

FOR ORCHIDS, and GARDENERS,

to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World. 30 minutes from St. Pancras.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

The Special Culture of Alpine Plants and Hardy PERENNIALS.

M. PRICHARD, Riverslea Nursery, Southbourne, Christchurch (many years Foreman at Paul & Son's, Broxbourne Nursery), begs to intimate that he has still time on hand for which he is disengaged during the coming season, in the formation of Rock Gardens, for the successful growth of Alpine Plants, &c., combined with economy and picturesque. Absolute personal superintendence.

BULBS — BULBS — BULBS.
CHARLES SHARPE & CO.
 HAVE JUST RECEIVED THEIR FIRST CONSIGNMENT OF
DUTCH BULBS,
 IN SPLENDID CONDITION.
 Single and Double SNOWDROPS, Named and Bedding HYACINTHS (CROCUS, named, and in mixture), Single and Double TULIPS, Border NARCISSUS, POLYANTHUS NARCISSUS, ROMAN HYACINTHS, and all other kinds of BULBS, at very low rates.
 Wholesale and Retail CATALOGUES on application.
 Retail Orders over 10s. in value, Carriage Free.
CHARLES SHARPE & CO.,
 SEED GROWERS, SEED AND BULB MERCHANTS,
SLEAFORD.

GIGANTIC PRIVATE SALE.
FRUIT TREES,
 Roses, Choicest Shrubs,
RHODODENDRONS.

90,000 FRUIT TREES (Standard, Pyramid, and Wall-trained) — Apples, Cherries, Plums, Peaches, and Filberts; 20,000 tall, noble Standard Victoria Plums and Damsons, six years old; the trees are without blemish, twice transplanted, splendidly grown, and intended for tenants and the hedgerows on the estate. 24,000 Black Currants, and forty kinds of Gooseberries. The superb Rhododendrons, Maiden, Standard, and Dwarf Roses; specimen Shrubs, and Hollies, surrounding the mansion, secured but recently, regardless of cost; also Hardy Flowers. See printed Catalogues. Re-moving.
 Estate Agent, Honourable GERTRUDE JONES, Churchfield, Cradley, near Malvern.

THE VERY BEST BULBS AT THE LOWEST RATES.
 LARGE & VARIED COLLECTIONS OF
HYACINTHS, TULIPS, CROCUSES, SNOWDROPS, NARCISSI, LILLIES, &c.
 All thoroughly ripened and in excellent condition for planting.
 Illustrated Descriptive Catalogue, No. 397.
 POST FREE ON APPLICATION.
 Seed & Bulb Growers
DICKSONS CHESTER

SPECIAL CULTURE OF
FRUIT TREES AND ROSES.
 A LARGE AND SELECT STOCK IS NOW OFFERED FOR SALE.
 The Illustrated and Descriptive Catalogue of Fruits, post-free, 3d.
 The Descriptive Catalogue of Roses, post-free.
THOMAS RIVERS & SON,
 THE NURSERIES,
 SAWBRIDGEWORTH, WERTS.

THE NEW ENGLISH ROSES OF THE YEAR
BOURBON, MRS. PAUL,
 The finest light Rose for English Gardens. Strong Dwarfs, 4s. each; Standards, 5s.
H.P. BRUCE FINDLAY,
 The Crimson Autumnal Bedder. Dwarfs, 5s. each, 48s. per dozen; of
PAUL & SON,
THE OLD NURSERIES, CHESHUNT,
 AND ALL LEADING NURSERYMEN.

A RARE OPPORTUNITY
 To obtain a Collection of Choice
FERNS AND SELAGINELLAS
 at exceedingly low prices.
 SPECIAL AUTUMN LIST ON APPLICATION.

W. & J. BIRKENHEAD,
 FERN NURSERY, SALE, MANCHESTER.

CURRANT TREES.
 RED and BLACK, strong 2-year-old.
 DUTCH RED, 10s. per 100.
 RABY CASTLE RED, 10s. per 100.
 NAPLES BLACK, 12s. per 100.
 2s. per 100 less for quantities of 1000. Sample lots of 12 trees of either above sorts, 2s. 6d.
 The above are offered free on rail at Wisbeach, and will be ready for removal in a few weeks. Remittance with order for lots of under 500. Banker's or London reference for larger quantities. When ordering, name this Paper.
 MANAGER, Osborne House Fruit Farm, Wisbeach.

Cheap Palms! Palms!! Palms!!!
J. W. SILVER invites inspection of his immense Stock of PALMS, the Cheapest in the Trade, of KENTIAS of all kinds; CORYPHA, SEAFORTHIA, COCOS, PHENIX, and many others. LIST of prices on application.
 Streatham and Norbury Nurseries, S.W.; and Marlborough Mansions, Victoria Street, Westminster, S.W.

FERNS! FERNS!! FERNS!!! — Trade.
 In 25 most saleable kinds, at 12s. per 100. Large Adiantum cuneatum, fine tops, in 5-inch pots, 30s. per 100. Large Ferns, in variety, 45s. per 100, in 48s. Extra large Aralia Sieboldii, in 48-pots, 6s. per dozen, 45s. per 100. Packed free. Cash with Order.
J. SMITH, The London Fern Nurseries, Loughboro' Junction, S.W.

MARLY LILAC
 (Well Budded).
 The best of all for Forcing. Thousands for Disposal.
CROUX ET FILS,
 NURSERYMEN,
 LE VAL. D'AULNAY, PRÈS SCEAUX (SEINE), FRANCE.
 Great Specialty in Trained Fruit Trees for Immediate Planting.
 CATALOGUES free on application.



To those about to Plant.
A DESCRIPTIVE CATALOGUE of Roses, Fruit Trees, Conifers, Evergreen and Flowering Shrubs, Rhododendrons, Ornamental and Forest Trees, Clematis, and other Climbing Plants, in large variety, sent free on application to—
GEO. JACKMAN AND SON, Woking Nursery, Woking. Established 1810. Area, 150 Acres.

BARR'S BULBS, WINTER and SPRING.
 The following Catalogues free on application:—
 Catalogue of beautiful flowering Bulbs for all seasons.
 Catalogue of all the best and most beautiful Daffodils (Narcissi).
 Catalogue of all the best and most beautiful Hardy Perennials.
 List of rare and beautiful Croci and Meadow Saffrons.
 COLLECTIONS OF BULBS, 10s. 6d., 21s., 42s., 63s., & upwards.
 COLLECTIONS OF DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s.
 Hyacinths, Tulips, Crocus, Daffodils, Iris, Peonies, Lilies, &c.
BARR AND SON, 12, King Street, Covent Garden, London, W.C.

BARGAINS in BULBS.—By Act of Parliament, Railway crossing our Gardens. Must clear. Pheasant Eye Narcissus, 6s. per 1000 (10s. 6d. per cwt. as lifted); Blue Scillas, 10s.; Spanish Irises, 17s.; Bethlehem Stars, 12s. 6d.; Aconites, 13s. 6d.; Biflorus, 12s.; Mixed Narcissi, 30s.; Double White Narcissus, 22s. 6d. All per 1000.
D'ALCORN AND CO., Spalding, Lincolnshire.

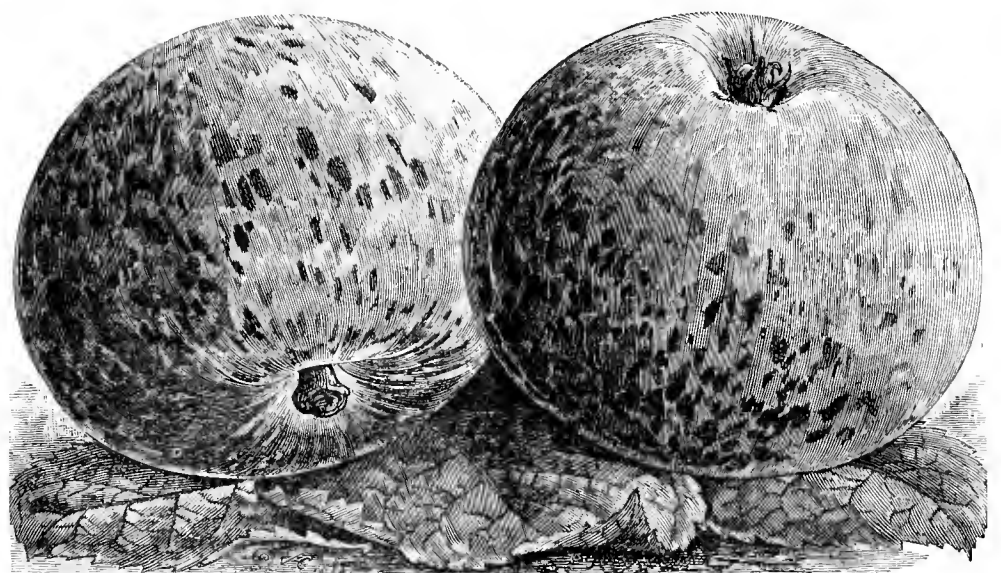
VIOLETS, for Winter-blooming. Marie Louise, 14s. to 18s. per 100; Primrose, best hybrids, 6s. to 10s. per 100. CARNATION, Souvenir de la Malmaison, 7s. to 9s. per dozen. All grand plants.—**SHINGLER AND CHINERY,** The Nurseries, Briston, East Dereham, Norfolk.

NARCISSUS, Grande Monarque, 75s. per 1000, 8s. per 100. Odorus, the great six-lobed and finest form of CAMPERNELLI, 25s. per 1000, or 3s. per 100. Price to the Trade on application to—
T. GELL, St. Lawrence, Ventnor, Isle of Wight.

NOBLE STRAWBERRY.—Thousands of rooted runners.
VICTORIA PLUM.—Thousands of stout Standards.
CHERRIES, in variety.—Fine Standards and Dwarf Maidens.
PEARS, in variety.—Maidens on Pear and Quince.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

TREE CARNATIONS.—Duke of Clarence, the new, the finest crimson-scarlet in cultivation, very large flowers; good plants, in 5-inch pots, 12s. per doz. Price per 100 on application. Carnation Souv. de Labryère, bright scarlet, remarkably free in winter; bushy plants, in 5-inch pots, 9s. per doz. Packing free for cash.
CRANE AND CLARKE, Hillside Nursery, March, Camb.

10,000 BUONYMUS (Green), bushy, well-grown, 18 inches to 30 inches, 6s. to 15s. per dozen. Cash with Order.
J. J. CLARK, Goldstone, West Brighton.



BEAUTY OF BATH.—This excellent New Early Dessert Apple is destined to become a great favourite, not only in private gardens, but especially among Market Growers for profit. It possesses Special Merit to recommend it. It is very Early, coming in about the end of July and beginning of August; is a Strong Grower, very handsome, bright red, brisk pleasant flavour, and a sure cropper. It has gained the highest possible honour, by being awarded a First Class Certificate, Royal Horticultural Society, and has taken First Prizes at various Shows in competition with Forty to Fifty Dishes of Dessert Apples. Orders booked in rotation; 1000 already disposed of up to date for November delivery. Stock limited. Strong Maidens, on English Paradise, 2s. 6d. each; ditto, on Crab, 2s. Two-year Trees, 3s. 6d. each.
 A few thousand of John Ruskin Strawberry to dispose of; Earliest Strawberry in Cultivation. A rival on Noble. 15s. per 100
W. HORNE, PERRY HILL, CLIFFE, near **ROCHESTER, KENT.**

GARDEN. BULBS, ROSES, &c.

FOR WHATEVER IS WANTED, mentioned or not in these columns, please to write immediately to H. CANNELL & SONS, whose SEED and NURSERY STOCK is very complete and extensive, and where nearly everything for the Garden is grown and supplied in large quantities, in the finest possible condition, at the lowest prices consistent with correctness and superior character.



H. CANNELL & SONS, SWANLEY, KENT.

ANTHONY WATERER invites from intending Planters an inspection of the following well-grown and finely-rooted EVERGREENS:— ABIES CANADENSIS (Hemlock Spruce), 5 to 8 feet. DOUGLASHI, 6 to 12 feet. GLAUCA, 5 to 8 feet. HOOKERIANA (Pattoniana), 3 to 6 feet. CEDRUS ATLANTICA, 4 to 8 feet. GLAUCA, 3 to 6 feet. LEBRANI (Cedar of Lebanon), 4 to 10 feet. CUPRESSUS LAWSONIANA ERRECTA VIRIDIS, 4 to 8 feet. LUTEA (Golden), 3 to 6 feet. JUNIPERUS CHINENSIS, 3 to 10 feet. AUREA (Golden Chinese Juniper), 3 to 8 feet. PICEA CONCOLOR, 3 to 7 feet. GRANDIS, 5 to 8 feet. LASIOCARPA, 4 to 8 feet. MAGNIFICA, 3 to 5 feet. PUNGENS, 1 1/2 to 4 feet. GLAUCA (Blue Spruce), 1 1/2 to 4 feet. PINUS AUSTRIACA, 3 to 7 feet. LARICIO, 3 to 4 feet. THUOPSIS BOREALIS, 4 to 7 feet. DOLABRATA and VARIEGATA, 3 to 8 feet. THUIA LOBBII (gigantea), 5 to 9 feet. OCCIDENTALIS LUTEA (Golden), 3 to 4 feet. WELLINGTONIA GIGANTEA, 3 to 7 feet. YEW, Common, 3, 4, 5, and 6 feet. Golden, of all sizes up to 10 feet, in various forms, Pyramids, Globes, and Standards, in point of variety, size, and quality unequalled. Golden Seedlings, 3, 4, to 8 feet. Irish, 5 to 10 feet. Golden, 3 to 6 feet. AUCUBA JAPONICA, 2 1/2 to 4 feet. BAMBUSA METAKE, fine clumps, 4 to 7 feet. BOX, Green and Variegated, 3, 4, 5, and 8 feet. HOLLIES, Common, from 3 to 10 feet. ALTA CLAERENSE, HODGINS or NOBILIS, LAURIFOLIA, MYRTIFOLIA, SCOTTICA, Yellow berried, and other sorts Variegated, of sorts, 3, 5, up to 10 feet. Golden Queen, 4, 5, up to 10 feet. Silver Queen, 4, 5, up to 10 feet. Weeping Perry's (Silver Variegated), on straight stems, with heads of 10 to 15 years' growth. New Golden Weeping. RHODODENDRONS, 3 to 8 feet. Knap Hill Nursery, Woking, Surrey.

EVERGREENS!—EVERGREENS! NOW IS THE TIME TO PLANT.

JOHN PERKINS AND SON beg to draw attention to their large stock of the following fine, bushy, healthy trees, with good roots, all of which will transplant safely:— ENGLISH YEW, 2 to 3, 3 to 4, and 4 to 5 feet. GREEN HOLLIES, 2 to 3, 3 to 4, and 4 to 5 feet. THUIA LOBBII, 3 to 4, 4 to 5, and 6 to 8 feet. THUOPSIS BOREALIS, 3 to 4, and 4 to 5 feet. LAURELS, CAUCASICA, 2 1/2 to 3, and 3 to 4 feet. ROTUNDFOLIA, 2 1/2 to 3, and 3 to 4 feet. PORTUGAL, 1 1/2 to 2, and 2 to 3 feet. AUCUBA JAPONICA, 1 1/2 to 2, and 2 to 3 feet. CUPRESSUS LAWSONIANA, 3 to 4, 4 to 5, and 6 to 8 feet. RETINOSPORA PLUMOSA, 2 to 3, and 3 to 4 feet. PISIFERA, 2 to 3, and 3 to 4 feet. Special cheap offers by the dozen, 1 0, or 1000. THE OLD-ESTABLISHED NURSERY AND SEED BUSINESS, 52, MARKET SQUARE, NORTHAMPTON. Nurseries, Billing Road. Telegraphic Address—"QUICK, NORTHAMPTON."

JOSHUA LE CORNU & SON'S JERSEY FRUIT TREES & ROSE TREES. Carriage paid. Packed gratis. An immense stock of strong, healthy, well-rooted Trees. No Starveling. CORDONS A SPECIALTY. Roses wonderfully cheap. The finest that money can buy. Before ordering, be sure to write for our Illustrated Catalogue. HIGH VIEW NURSERIES, JERSEY.

TWO GRAND NOVELTIES.

A PURE WHITE BEDDING CLEMATIS, and the FERN which has lately received so many of the highest awards and proofs of admiration.

CLEMATIS SMITH'S SNOW-WHITE JACKMANII.—The flowers are paper-white, about the same size as those of the old purple Jackmanii, but produced in even greater profusion. It is unrivalled for beds, and also for climbing. Ready in August. 7s. 6d. each.

PTERIS TREMULA SMITHIANA.—This is a very valuable and distinct Fern. No Collection should be without it. Illustration and description free. 5s. to 10s. 6d. each.

BULBS.—The best procurable. STRAWBERRIES.—All leading kinds. Descriptive LISTS free. Also all the best varieties of CLEMATIS ready for planting out.

RICHARD SMITH & Co., NURSERYMEN AND SEED MERCHANTS, WORCESTER.

AGENCE GÉNÉRALE HORTICOLE, BELGE. De HERDT and STRECKER, ANTWERP. Branch House and Plant Houses, Ghent, 74, Rue de la Forge. Plant Houses & Trial Grounds, Dueseld, Iez Schooten, Antwerp. Cablegrams—STRECKER, Antwerp and Ghent.

Special Trade Offer. ARECA LUTESCENS, Splendid Seedlings for Potting—Very large size (1 1/2 YEAR). PRICE, 12s. 6d. PER 100. SAMPLES FREE ON APPLICATION.

DUTCH BULBS, FRENCH BULBS, AND ENGLISH BULBS.

See our Special Wholesale Catalogue of Bulbs. CONTAINING LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our prices before sending your orders abroad. WATKINS & SIMPSON, SEED and BULB MERCHANTS, EXETER STREET, STRAND, LONDON, W.C.

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FOR THE BEST, send to G. H. RICHARDS, 1, Belvedere Crescent, Lambeth, London, S.E. One of our many Testimonials:—"The 20 bushels of Spawn I had from you for our Mushroom Farm, at Poole, has proved very satisfactory; in fact, the best I have ever had.—T. H. CRASP, Canford Gardens."

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UNITED HORTICULTURAL BENEFIT and PROVIDENT SOCIETY. The ANNUAL DINNER will take place on THURSDAY, October 15, 1891, at 5.30 P.M., at the Cannon Street Hotel, E.C. GEORGE A. DICKSON, Esq., of Chester, will preside. Tickets, 5s. each, may be had of the Secretary, W. COLLINS, 9, Martindale Road, Balham, S.W.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER. A GRAND EXHIBITION of HARDY and OTHER FRUITS will be held on the 20th, 21st, 22nd, and 23rd inst. For Schedules, &c., apply to the undersigned. BRUCE FINDLAY, Royal Botanic Gardens, Manchester.

ROYAL BOTANIC SOCIETY of MANCHESTER. A FRUIT CONFERENCE will be held in Manchester on the 21st and 22nd inst. The Right Hon. the EARL of DERBY will Preside on the First Day, and Alderman Sir JAMES WHITEHEAD, Bart., on the Second Day. The Subjects to be brought before the Conference are published in the Schedule. BRUCE FINDLAY, Secretary.

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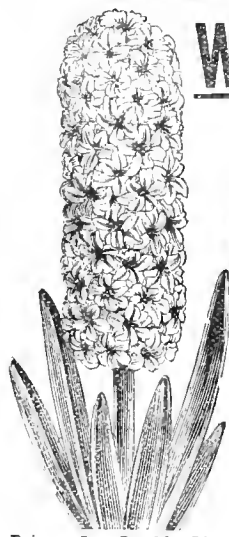
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CATTLEYA SANDERIANA

Must not be confused with *C. gigas* Sanderiana, but is probably the finest *Cattleya* extant.

ABSOLUTELY NEW.

Collector saw no flowers, but natives state flowers are nearly a foot across. It is from a totally new district.

CATTLEYA SPECIES,

District of Chrysotoxa; flowers warm pink, with enormous crimson and gold labellums; section of Hardyana, Byrkley Lodge var., shown at Drill Hall; Massaiana, Young's, and Statter's vars.—rarely has there been seen a *Cattleya* so promising.

CATTLEYA GODSEFFIANA.

It must not be supposed from the habit of this new *Cattleya* that it is in any way like *C. Skimmerii*, but it is an absolutely new species; flowers round, 4 inches in diameter; mauve sepals and petals, and striped lip.

ALSO THE NEW LABIATA ?

Found in a new locality, growing principally on rocks and low trees, over small streams, and flowering very freely in August and September; flowers very large and showy. No Orchids have ever before been gathered in this part of Brazil. (Not guaranteed new).

&c., &c., &c.

NOTICE.

In our next issue we shall give an Illustrated Report of the

EXHIBITION OF CONIFERS

AT THE
CHISWICK GARDEN

OF THE
ROYAL HORTICULTURAL SOCIETY.

THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 3, 1891.

KNIPHOFIAS.

THIS noble genus, which for many years was treated with comparative neglect, is now receiving a greater amount of attention than has been bestowed upon it hitherto, although for some time past these plants have attracted the care and attention of some of our most eminent horticulturists and hybridists. Generally speaking, however, these beautiful subjects have not received that amount of attention they are fairly entitled to, neither are they to be found planted to anything like the extent that they ought to be, when we take into consideration the old and distinct effects that are to be obtained from well and judiciously-placed belts and groups. The forms now in cultivation are so varied in stature, form, and colour that suitable subjects can be found amongst them for almost any site or position, be it either the rock, flower, or wild garden.

The genus has been known to botanists for nearly a hundred years (Moench, 1794), but it was not till 1848 that the typical *K. Uvaria*, once called *Tritoma*, was cultivated as a hardy plant at Kew, and seedlings more or less varying from this type are still to be found as the sole representatives of the genus in the majority of gardens; while in some parts of the country, forms that are evidently seedlings of *K. Uvaria* crossed with *sarmentosa* are the most abundant. These latter, I have noticed, are invariably hardy, perpetual flowering, and well adapted to give character and colour in the most effective manner late in autumn, when all else in the garden has been cut down by frost, or injured by wind and rain. A very striking combination may be obtained by planting these "Torch Lilies" in quantity interspersed with *Galtonias* and *Hya-cinthus candicans*. The writer, some years ago, planted a few thousand of each of these plants in an undressed piece of pleasure ground in the neighbourhood of a small lake in the manner indicated, with the happiest of results; the situation chosen was naturally drained, and stood well above the water. The preparation was simple and inexpensive; large broad belts were deeply dug, well manured, and allowed to settle during the autumn and winter. In March the *Galtonias* were planted, while the *Kniphofias* were turned out in June, both sets of plants were small, all having been raised from seed sown the previous year; about one-half of each flowered the succeeding autumn, and ever since this "Cape Colony" has increased in interest and beauty.

It must, notwithstanding, be clearly understood, that although the species of *Kniphofia* are readily propagated from seed, it is only the most clearly

defined species, such as *K. caulescens*, *K. Quarantiniana*, *K. Northiæ*, *K. pallidiflora*, &c., that can be depended upon to retain their typical form when raised or produced from home-grown seed. I believe, however, that collected seed of such forms as *K. natalensis* and *K. MacOwani* will produce plants of true type, while considerable variation will be found amongst the progeny of the same species seeding in this country. I should, therefore, strongly advise those about to form collections, or cultivators adding fresh varieties to those already in their gardens, to procure specimens from the most reliable sources, insisting upon being supplied with plants propagated by division only from authentic stock. As an illustration of the necessity for taking this precaution, I may mention that, when forming a collection of these plants in my old garden at Ledbury, I had amongst others procured duplicate plants of *K. nobilis* and *K. Saundersii*, two very distinct forms, from half-a-dozen of the most reliable sources. In every instance these plants varied more or less, and none of them agreed with the undoubted typical plants for which I was indebted to the kindness and generosity of that prince of horticulture, Herr Max Leichtlin, the same variation occurring in the case of the hybrid *K. corallina*: and, in fact, all the forms that I tested in the manner indicated. At the same time, it is just possible that something very distinct and beautiful may be acquired amongst seedlings if obtained from a good collection. One of the finest forms in cultivation is a seedling originally found amongst a batch of seedlings of *K. maxima* in Messrs. R. Smith & Co.'s nurseries, Worcester, where these plants have received very considerable attention for a long time at the hands of that very able botanist and plantsman, Mr. S. Appleton. The form I allude to is now well known under the name of *K. maxima globosa*. Herr Max Leichtlin has given a great deal of attention to this genus, he having raised and distributed a number of very beautiful and distinct hybrids, which, when more plentiful and better known, will, I have no doubt, become exceedingly popular, especially in those gardens where the best of hardy plants find place and attention.

Ireland, it would appear, can lay claim to possess the finest collections of *Kniphofia* in Britain, notably those at Belgrove and Glasnevin, and at Mr. T. Smith's, Daisy Hill, Newry; this latter is wonderfully complete and accurate, being, perhaps, the largest and most representative trade collection in Europe. The fact of such a distinguished horticulturist as Mr. Gumbleton having bestowed considerable attention upon these plants for many years, acquiring, as he has done, all forms, be they species, varietal forms, or hybrids, from every available source, is sufficient evidence not only of the intrinsic beauty and interest these plants possess, but that, like other things, the collection to be found in the garden at Belgrove is unique, and quite up to date, both from the botanist's and gardener's standpoint.

In planting or forming groups of these Torch Lilies, care should always be taken to select warm, dry, well-drained, sunny situations as sites. Coming, as most of them do, or as at least the species originally did, from the higher well-drained regions of the African continent, the whole race naturally dislike anything like stagnant moisture about the roots or collar. By way of preparation, the ground should be worked to a good depth, and liberally enriched with thoroughly decayed manure, and the addition of

some old turfy loam: if the soil should be of a stiff retentive character, the admixture of road drift or silver sand and a little leaf-soil will be a material advantage.

I found it a good plan to place the plants almost on the surface of the prepared sites, and afterwards form a mound round each plant with suitable compost. In this way I was able to spread out the roots—which are usually of considerable length, especially if the plants are, as they ought to be, turned out of pots—equally over the space allotted to each occupant. This mode of planting also affords an excellent opportunity for rapid drainage. Immediately after the operation of planting has been completed, the plants should be surrounded and surfaced with a

slates placed on bricks or other supports, so as to allow a free circulation of air, but at the same time to throw off rain and snow from the crown or centre of the root-stock.

When hunting up the plants forming the collection at Ledbury, I always secured what I wanted where and when I could, but experience showed that the correct time to divide and propagate is immediately after the plants have flowered. If a plant is to be increased to any extent let it, at the proper time, be taken bodily up, be it large or small. Split it through, then carefully work off with knife and fingers, each crown separately, reducing the tops to a convenient height, and pot up in sandy loam in pots according to the size of the crowns; afterwards the



FIG. 45.—KNIPHOFIA NORTHIÆ, NUCU REDUCED. (SEE P. 392.)

good coating of cocoa-nut fibre refuse—a capital medium for protection—and a mulching I found agreeable to the plants.

I have invariably found the early part of June to be the best period for planting out stock propagated the previous season, as the plants then had the summer entirely before them in which to take full hold of and make thorough acquaintance with their new quarters. I should, except in very favoured gardens, strongly advise that the broad-leaved caulescent forms, such as *K. caulescens*, *K. Northiæ*, &c., should be planted in the warmest and most sheltered situations, and even under such favourable circumstances, it would be wise to protect them in severe weather, as the fleshy stems of these species are extremely liable to be hit during a spell of hard frost. Then, again, the Leichtlinii race, some of which are deciduous, should receive an extra covering of fibre, dry leaves, or mats, with a hell-glass or

young stock may be plunged in a cold frame, where they will at once commence to root, and thus form sturdy vigorous plants during the winter and spring, in readiness to turn out when the planting period shall have again come round, when the young plants would start into immediate growth without having received any appreciable check.

Plants obtained from the nurseries in the autumn are all the better for the same treatment, while those received in pots may with advantage be given the protection of a frame, or be plunged under and at the sunny side of a sheltering wall or fence, always bearing in mind that December, January, and February are the worst months of the year for removal or division.

It will, by way of precaution, be well to propagate the more tender and scarcer forms as soon as they become strong enough to do so, as it is a very safe policy to have a spare plant or two in

reserve in case a specimen or original plant may suddenly fall into ill-health, and ultimately disappear altogether, a casualty that sometimes occurs after a wet sunless summer, as the past has been, especially if such a summer should be followed by a wet winter, and a subsequent period of sharp frost in spring. The more robust growers, such as *nobilis*, *Saundersii*, *Le Géant*, *nobilis pallida*, *Uvaria largiskapa*, &c., having good constitutions, may with safety be let alone as long as they appear to be happy and content with themselves, and the conditions under which they exist, having recourse only to the breaking-up process when the plants show signs of deterioration, or declining vigour. *W. J. Grant, Monmouthshire.*

KNIPHOFIA NORTHLE.

This fine-foliaged species of a handsome genus of autumn-blooming plants has been recently fully botanically described in the *Gardeners' Chronicle* by Mr. J. G. Baker, F.R.S., and the accompanying illustration of the entire plant, as now growing in the open air at Belgrove, gives a good idea of the fine appearance of its handsome foliage (see fig. 45, on the opposite page). It is, however, only valuable, from a horticultural point of view, for its foliage, as its flowers are unfortunately of no beauty whatever, having, when produced under glass, as in the Succulent-house at Kew, when more or less starved in a pot, a pale green tube with white tips; and when bloomed in the open air from a fully-nourished plant, flowers of a dull orange colour with lighter tips. *W. E. Gumbleton.*

[Our engraving was reproduced from a photograph of the plant taken by the Rev. C. W. Roberts, Middleton, co. Cork. E.S.]

NEW OR NOTEWORTHY PLANTS.

AÉRIDES LAWRENCEÆ, *Rehb. f.*, VAR. AMESIANA, *Sander.*

This is a new and wonderful variety of a handsome plant. The flower-stalks are more than 2 feet long, and except at the very base, densely crowded with richly-coloured and splendid flowers. In size, the flowers rather exceed the largest of those of the typical *A. Lawrenceæ*. The general colouring is a light orange-yellow, spreading over the whole flower to the top of the spur, which is not green as in the type. The purple tips of the sepals and petals, and the middle lobe of the labellum, are larger, and the purplish line in the throat of the labellum is broader, and bordered with many radiating stripes of purplish spots, and blotches of the same colour.

As regards the flowers only, there can be scarcely a doubt that we have before us but a darker-coloured form of the var. *Sanderiana*; but a glance at the whole plant shows us that we have to do with a specimen which, if there were no identity in botanical characteristics of the flower, must be regarded as a true species. It is well known that *A. Lawrenceæ*—the type—is a sturdy grower, with leaves 2 feet in length, and of considerable breadth; it is also known that the *Sanderian* variety, with its deeper-coloured flowers, has much narrower leaves, which are shorter than the spikes, and a more flaccid growth. In our new variety, *Amesiana*, we find a growth even more robust than in the typical *A. Lawrenceæ*, with shorter, more rigid, darker green leaves, which are much shorter than the spikes; and these characteristics are further marked by the presence of the darkest colours to be seen in any *Aérides*.

A gardener as well as a botanist who studies not the flowers alone, but the whole plants, will easily distinguish the type and the two varieties from the habit of growth, and he might suppose that these three different kinds of stems and leaves must produce three different forms of flowers; but man proposes, and these capricious Orchids dispose. As the growth of *A. Lawrenceæ Amesiana* is quite dis-

tinct, and the leaves are shorter, darker, and stronger than even in the typical plant, and quite different from those of Mr. Sander's variety, it is certain that we have not in this case to deal with "natural hybrids." This term is the flag beneath which all little-known variations of well-known species sail; but that we must admit an extent of variation greater than we supposed before, and large enough to include, perhaps, still more varieties.

We received splendid specimens of leaves and flowers from Messrs. F. Sander & Co., St. Albans, who introduced the type in 1883, and this year sent out this new variety. If any doubt still remained, it must have been dispelled by comparing living speci-

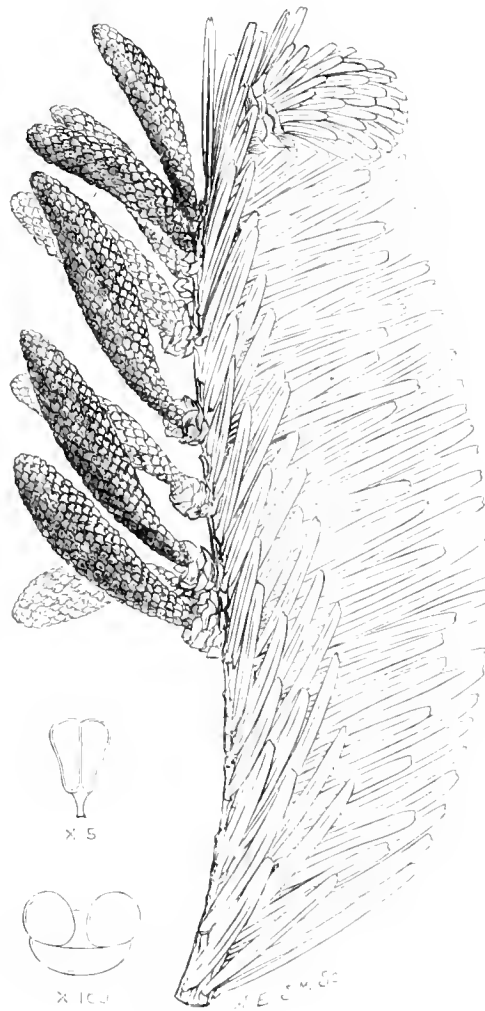


FIG. 16.—MALE FLOWERS OF AÉRIDES LAWRENCEÆ. (SEE P. 395.)

mens, as we had the opportunity of doing on the occasion of our pleasant visit to St. Albans last July. *Dr. F. Kraenzlin.*

CYPRIPEDIUM GODEFROYÆ LUTEUM, *n. var.*

Flowering out of a batch of the ordinary *Cypridium Godefroyæ*, in the nurseries of Messrs. Hugh Low & Co., at Clapton, is an extraordinary form with flowers, in which the ground colour is of a clear soft primrose-yellow, and the spotting pale rosy-lilac, in its softness of tint very different from any other form of *C. Godefroyæ*, not forgetting the variety with a yellow ground colour, previously named by the late Professor Reichenbach *C. Godefroyæ hemixanthemum*. It is a very delicately tinted and pretty form, and a decided novelty. *J. O'Brien.*

KEW NOTES.

WATSONIA IRIDIFOLIA VAR. *O'BRIENI*.—This plant was introduced and flowered in September of 1889, by Mr. J. O'Brien, who exhibited it at one of the meetings of the Royal Horticultural Society, when it obtained a first-class certificate. Mr. N. E. Brown described it in the *Gardeners' Chronicle*, vol. vi. 1889, p. 330, as "a lovely plant, very similar to *W. rosea* in general appearance, but with pure white flowers, and fragrant. This year some bulbs of it were obtained for Kew from Port Elizabeth, and these are now flowering out-of-doors. The stoutest plants bear scapes 4 feet high, with five or six branches, and numerous long-tubed broad-mouthed flowers, fully 2 inches across, and of the purest white. There are from twelve to twenty flowers on each branch, arranged distichously, about ½ inch apart, and four of them open together on each branch. In habit and size of leaf and inflorescence, there is very little difference between this and the so-called species *W. Meriana*, *W. rosea*, *W. angusta*, and several others. I have never seen *W. roseo-alba*, which I believe is cultivated in Holland as *W. alba*; does it differ from Mr. O'Brien's plant?

Watsonia densiflora var. *alba*.—This is another pure white-flowered variety of a species the type of which may be seen in the *Botanical Magazine*, t. 6400, where it is represented with rose-red flowers from a plant introduced from Natal by Messrs. J. Veitch & Sons in 1878. We received seeds of the white-flowered variety from Natal two years ago, and the plants raised from them were kept in a border in a cold-house until May this year, when they were put outside in a round bed on the south side of the T-range, where some of them are now in flower. In the *Botanical Magazine* the leaves of *W. densiflora* are described as linear, reaching a length of 1½ foot, and a breadth of half an inch, but in the white-flowered variety now in bloom at Kew the leaves are 2 feet long and 1 inch broad, very rigid, with a yellowish margin, and a stiff almost spiny tip. The scape is over 2 feet in height, and bears a dense head or spike, 6 inches long, of tubular white flowers 1 inch long and broad, each springing from a brown close-fitting spathe-valve. These overlapping spathe-valves are arranged so regularly, and overlap each other so closely, that the head before the flowers burst through, looks like a long Wheat-ear. The plant is altogether distinct and pretty. Mr. Medley Wood, writing from Natal in 1882, with reference to the occurrence of the white-flowered variety, stated that "it is always found in company with the type, but is, I think, more plentiful in some seasons than in others." The plants now in flower at Kew prove that the white variety comes true from seeds.

Gladiolus Milleri.—Bulbs of this, received from the Botanical Gardens at Port Elizabeth, are now flowering freely in the open border at Kew. There are two colour varieties of it, one with white segments streaked with rosy-purple, the other creamy-yellow with brownish stripes. Both forms are pretty, and the flowers are as large as those of *G. handus*, and quite as numerous on the spikes. There is a figure of this species in the *Botanical Magazine*, vol. xviii., which volume, by the way, contains a number of most interesting Cape plants, Iridaceous chiefly. It is there stated that *G. Milleri* was raised from seeds by Philip Miller in 1757, and was figured by him as *Antholyza foliis linearibus*, &c. It very closely resembles *G. floribundus* and *G. undulatus*.

Zephyranthes candida is a most useful plant for edging borders, as may be seen by its behaviour at Kew, where a border containing *Belladonna* and *Jacobæa Lilies*, and other hardy hulchous plants, is edged with it. Its hardiness is shown by its not suffering in the least degree during the severe frost of last winter; and its sturdy constitution enables it to grow freely in poor soil, and bear division without a sign of suffering therefrom. All through the summer, its elegant dark green grassy foliage is studded with its starry pure white flowers, and it continues to bloom until the frost stops it. As a

pleasant change from the eternal Box edging, or a fringe to hide an ugly tile edging, this *Zephyranthes* ought to become a general favourite.

ORCHID NOTES AND GLEANINGS.

CYCNOCHES VERSICOLOR.

This rare and, perhaps, unique plant, so far as Europe is concerned, has again flowered in the collection of Sir Trevor Lawrence, at Barford Lodge, and two of the flowers have been sent to Kew for preservation. It was described by Reichenbach, in these columns, about three years ago (1888, November 24, p. 596). The plant bears a drooping raceme of numerous flowers, which measure 2½ inches in diameter. The sepals and petals are of a very peculiar olive-green, somewhat inclining to yellow, very difficult to describe, and like velvet. The lip is ovate-elliptical, acute, and very fleshy, in colour pale whitish-yellow, a little dusky at the base and sides, and with about eight to twelve red-brown spots in front of the pair of erect fleshy tubercles in the centre of the lip. The slender column is light green, with numerous small black spots on the basal half. The flower is a male, and thus belongs to the same section as *C. Loddigesii* and *C. chlorochilon*. Some of these days it may surprise us by producing female flowers, an event awaited with considerable interest.

CYCNOCHES CHLOROCHILON ♂ and ♀.

Attention was called to the production of flowers of both sexes of this handsome species in the collection of M. Houzeau de Lehaie, at page 69 of this volume. Immediately afterwards, both sexes appeared in the collection of Messrs. F. Sander & Co., of St. Albans, and during a visit to that establishment the other day, I observed, in a fine batch of this species, two plants, both of which bore a single female flower. Several males were also in flower, but in no case were both sexes borne on the same individual. M. Houzeau has now flowered both sexes on the same plant, thus removing all doubt as to their specific identity. They are being preserved at Kew. It is rather interesting to record the fact that no fewer than four individuals should suddenly produce female flowers in one season, especially as the males alone have been known for so many years. *R. A. Rolfe*.

AREUNDINA HAMBUSIFOLIA, &c.

This pretty *Sobralia*-like Orchid is at present in flower at Clare Lawn, East Sheen. The flowering-stems are 1 foot high, clothed with its bright green leaves. The sepals and petals are coloured magenta-rose; the lip is of rich rose, and the throat white striped with orange. It is a plant that grows freely in the stove, and forms a useful addition to the Orchids which flower at this season. Another pretty Orchid in flower is *Catasetum Bungeorthii*. Contrary to the usual practice, we grow our *Catasetums* in the same material as the *Calanthes*, viz., fibry loam and a little peat, sand, and cow-manure, and the manner in which they grow and flower testifies to the suitability of this kind of compost. One plant has seven large flowers. *W. H. V.*

ORCHIDS AT MESSRS. HUGH LOW & CO.'S.

In the Clapton nurseries the *Cattleyas* are in an especially fine condition this season, the later-flowering ones as *Cattleya Trianae*, of which there are large quantities, promising well for bloom. The *Cattleya Gaskelliana*, which are now nearly past their best, have made a great show, and some fine and highly-coloured forms remain; also a good specimen of *C. Gaskelliana albens*, flowers pure white with a light tint of rose on the labellum. Two houses full of healthy plants of *Vanda cœrulea*, and a like quantity of the favourite *V. Kimballiana* were to be seen lately, with many of the imates in bloom—one fine specimen of the former having nine spikes of flowers. In the *Angraecum*-house a pretty group was made up of specimens of the white *A. articu-*

latum, arranged with flowering plants of *Dendrobium formosum giganteum* and *Odontoglossum Roezlii*. The *Phalenopsis* are in grand health, but with little flower at this season; and the six neat span-roofed houses which shelter the *Cypripediums*, have in bloom some grand examples of *C. Parishii*, many *C. Godefroyae*, among which is a new yellow form; a quantity of *C. niveum*, *C. bellatulum*, and other species and crosses. Amongst other Orchids in bloom here were *Odontoglossums*, *Aerides Lobbii*, *Acineta densa*, *Stanhopea Wardii*, *Catasetum fimbriatum*, many *Lælia Dayana*; a fine lot of the large-flowered form of *Oncidium cucullatum*, *Lælia elegans*, *Masdevallia macrura*. *Dendrobes* are very extensively grown at Clapton, and very fine flowering growths are now being completed on the thousands of *D. Wardianum Lowii*, and other showy species.

LÆLIA GRANDIS TENEBROSA.

A handsome form of this variety is in flower in the collection of G. C. Raphael, Esq., Castle Hill, Englefield Green. The flower, as seen, is 7 inches across; the sepals and petals of Indian yellow colour, tinged and obscurely veined with purple; the labellum, which is equal in size and showiness to that of a *L. purpurata*, is white at the base, which is marked in close stripes with purple, deepening in the middle of the lip to maroon; the front and side lobes of the lip have a broad lilac margin, into which the purple lines of the basal portion extend. The flower, in addition to its being handsome and lasting, has a delicate fragrance. *J. O'B.*

COCHLIODA NOEZLIANA.

Flowers of this handsome cool-house Orchid, from l'Horticulture Internationale, Park Leopold, Brussels, demonstrate the fact that its merits were underrated by its introducers, and that even the showy plate in the English edition of the *Lindensia*, February, 1891, fails to depict the beauties of its individual flowers, although it gives a good representation of its general character. The flowers before us are fleshy in texture, about 1½ inch across, and closely arranged on the racemes. The flowers are orange coloured, the petals, sepals, and side lobes of the lip being overlaid with vermilion, which contrasts well with the clear orange colour on the lip, and the prominent orange-coloured column, with its curiously-hooded reddish apex. It has proved a very free plant in the *Odontoglossum*-house, and when thoroughly established in gardens, it will be a great favourite. *J. O'B.*

MILTONIA VEXILLARIA SANDERIANA, n. var.

Out of the thousands of the different types of *Miltonia vexillaria* which have been imported by Messrs. F. Sander & Co., and flowered at St. Albans, many distinct and handsome varieties have appeared, the best of which hitherto recorded, perhaps, is *M. v. Leopoldi*, which it was thought could not be surpassed. Now, however, another grand form has flowered, which, for distinct characteristics, showiness, and rich colouring, would be preferred by most connoisseurs to any other variety. The plant is of robust habit, with unusually broad leaves, and long gracefully arching scapes, which bear flowers of the size usually found in the large-flowered forms of the species. The sepals are white, suffused with a bright rosy-flush, the two lower ones having dotted lines of crimson near the column; the petals are broader and rather darker in tint than the sepals; and the labellum, which is the more attractive part, is slightly shell-shaped, and concave, which may or may not be a constant feature. At the base of the labellum, and extending forward in the middle line, nearly to the cleft in the front lobe of the lip, is an irregular triangular blotch of bright purplish-maroon, with several thick lines of the same colour of various lengths running from the main blotch on each side, the middle one being the longest. The rest of the lip is bright rosy-crimson. Description fails to do justice to this grand variety, although it serves to record it. *James O'Brien*.

FRUIT PACKING.

HAVING received applications for further details in connection with the best system of packing fruit to prevent decay (see *Gardeners' Chronicle*, August 8, p. 157), I applied to Professor F. H. Storer, of the Bussey Institution, Mass., U.S., who very courteously supplied me with the following information. As the subject is of great practical importance to all fruit growers, I venture to give the main portion of Professor Storer's reply:—

"The common method of keeping fruit here, and it is practised upon a very large scale, is by 'cold storage.' Special houses are fitted with apparatus similar to that used for making artificial ice, by means of which an atmosphere of chilled air is supplied constantly to the fruit."

Professor Storer is assured, however, by very competent observers, that while the process above mentioned is essential for the preservation of the softer fruits, such as those Pears which ripen in late summer or early autumn, much simpler means will answer for "winter Apples," such as ripen in October. In Massachusetts, winter Apples are, in fact, preserved perfectly by packing them in barrels, and storing the barrels in a house "built like an ice-house;" that is to say, the house is built with a hollow wall, which is packed full of dry sawdust. Or rather, when Apples are to be stored, the hollow wall is built with a partition (down the middle of the hollow space), so that the actual wall of the house is lined inside with two distinct vertical layers or walls of the non-conducting sawdust; which ensures a very constant temperature inside the house.

In October, after the Apples have been put in, the storing-house is left open in the cool autumnal weather until it has come to a temperature of about 40° Fahr., in all its parts, when it is closed for good.

It is said to be well, however, to test the temperature occasionally by thrusting a thermometer into the house through a small window or shutter; and in case the temperature should be found to be any higher than 45° Fahr. or so, a door should be left open for some hours in order that enough of the winter air outside might be let in to cool down the whole house.

We are given to understand that this simple method is applicable only to winter Apples, or to winter Pears, which naturally keep a long while—namely, which normally live a long life after they have been plucked from the tree.

Professor Storer considers the subject of great importance commercially, and of high scientific interest, and suggests that some competent, practical man, be sent to New England, for the purpose of collecting information, and to report upon the American methods of preserving fruit. *J. J. Willis, Harpenden*.

NOTES ON GRAPES AT EDINBURGH.

The display of Grapes at the International Show, recently held, was in many respects a most remarkable one. One striking feature to be found throughout the exhibits was the excellent finish, with scarcely an exception. The bunches, taken as a whole, were of large size, hardly any of abnormal growth were to be found without including those, as a matter of course, which were shown for mere weight of bunch. With respect to the varieties shown, there were some instructive facts worth noticing. Of black Grapes, *Gros Maroc* has come prominently to the front since the last exhibition of this kind was held. Admitting that it is not of first-class flavour, no one will deny that it is a noble-looking Grape, and one which usually finishes well; it was shown in remarkably fine condition by several exhibitors. The mistake made, however, in more than one instance was that of insufficient thinning. Where this had been done sufficiently, the berries were of great size, adding greatly to its appearance. *Alnwick Seedling* was to be found in

fine condition from several growers, some showing the large double bunches which this variety produces when very vigorous; others had the smaller bunches, but with berries approaching Gros Maroc in size. These latter were more taking in appearance, being also better suited for the dessert dish. Gros Colmar was shown of excellent colour by a few exhibitors, in one instance both finish, size of bunch and berries were all one could desire. Other exhibits, however, wanted a longer time to bring them to perfection, notably the bunch to which the 1st prize was awarded for weight in the black class. The present can hardly be considered a good season for this variety, which is in best condition after the New Year, the flavour then being considerably better. The old favourite Black Hamburg was shown well by a few exhibitors only. These few were very fine as regards bunches and colour, but hardly so large in berries as are at times to be seen. The quality of the Black Hamburgs in one instance, no doubt, weighed heavily with the judges

which were usually well coloured—some were not quite ripe. This variety was shown in all-round better condition at the Crystal Palace the previous week, so also was Black Hamburg, as a whole. Some first-rate examples of Lady Downes' Seedling were shown, the bunches being of large size and well finished—in some few instances a more liberal thinning would have improved them, as well as adding to their better keeping qualities. Mrs. Pince, mostly a fickle variety, was in a few instances shown well, being even better coloured than usual—in one case the berries were very fine, but the colour not good; this variety, like the Muscat Hamburg, does not evidently find general favour, even with the northern growers. A few large clusters of Gros Guillaume of excellent colour, and with large berries, were shown. If, however, it is compared with other late Grapes, it is surpassed for utility and for flavour also. On the exhibition board it looks well when staged, as in a few instances on this occasion; it is, however, but a show

mended for extended culture in any case. I was pleased to see such good examples of Golden Hamburg, the best being very fine of the kind, both in berry and colour, the bunches also much more compact than this Grape is usually seen. This Grape does not appear to be so much grown now. Buckland Sweetwater has no doubt in a great measure taken its place. The examples of this latter Grape, however, were not so good as those of the Golden Hamburg. The Buckland is, I consider, better grown as a second early kind when it has a chance of being used sooner; if kept too long there is a loss of flavour, and it is not much better than a bag of water. In this respect the preference must be given to the first-named kind. Some few well-coloured and in other respects capital bunches of Raisin de Calabre were staged, this Grape must, in spite of this fact, be classed with Gros Guillaume as a mere show kind. Some few excellent bunches of Foster's Seedling were shown, these should, as far as flavour is concerned, have occupied better positions. Until Muscat of Alexandria is well ripe, it is still one of the best Grapes for dessert. It should, I think, have had a class to itself, as well as Buckland Sweetwater. Canon Hall Muscat, in a non-competitive group, was in prime condition, the berries large and well-coloured. It was not well-represented in the competing classes. The following Grapes were not shown, or if present, only second-rate, viz., West's St. Peter's, still an excellent variety, and far better in flavour than many late kinds; Mrs. Pearson, which, when well grown, is a splendid Grape, both as regards appearance and flavour, hanging well after it is ripe—it should, I think, take the place of both Buckland Sweetwater and Raisin de Calabre. White Tokay: this does not seem to be grown so much now; some first-rate bunches of it and Mrs. Pearson were, however, staged at the Crystal Palace the week previous. White Lady Downes' I did not see either, and it is rarely to be seen in anything like good condition. Black Prince, which a few years back would have found a place for size of bunch alone, was absent; so also was Trentham Black and the Frontignans.

Of the new Grapes not yet in commerce, the palm must be given to Black Duke, of which, no doubt, we shall see more examples another season; it bids fair to be an excellent keeping kind, with the additional advantage of superior flavour and a good constitution. Appley Towers Seedling, shown against it, was not sufficiently ripe, but it is a most promising kind, the bunches compact, the berries large and well coloured. This exhibition of Grapes must be considered as one of the best displays ever brought together, and that in spite of a season which has not been the most favourable in many respects for attaining a high degree of finish. *Vitis.*

ABIES WEBBIANA.

In order to complete our illustrations of this noble species, we now add details of the young cone as sent to us some months since by Mr. Rashleigh, of Menabilly. The drawing (fig. 47) tells its own tale, save in so far as regards the hue, which is of the deepest violet or plum colour. The foliage is remarkably handsome, bold, and silvery-white on the under surface, so that this species, at any rate in the southern counties, may be commended as one of the handsomest. We have seen it doing well in Shropshire, but how far north it may be grown successfully we cannot tell. As a denizen of the Himalayas, it is not cold that it fears so much as damp, and the treacherous character of our springs.

FOREIGN CORRESPONDENCE.

MARKET MEASURES.

CHICAGO, ILL., U.S.A., August 6, 1891.—I am a subscriber to the *Gardeners' Chronicle*, and generally lend it to friends who cannot afford to subscribe for it; and weekly or oftener some of them come to me



FIG. 47.—ABIES WEBBIANA. YOUNG FEMALE CONE; RICU PURPLE LEAVES, SILVERY-WHITE BENEATH.

in making their awards; one bunch shown in a single bunch class was a model of this standard kind. Madresfield Court fully maintained its reputation as a Grape of the first rank. It was grandly shown in one instance, the berries of that peculiarly large size and depth which is indicative of careful thinning. In nearly every case, this kind was coloured well, and without traces of "cracking," which, considering the season, speaks well for those exhibitors who showed it in such good form. Muscat Hamburg was but poorly represented; only in one or two instances was it to be seen in good condition as regards colour, size of bunch and berries.

The bunch to which the first prize was awarded for flavour in the black class was, in other respects, but a poor example, being of a foxy colour. Considering we have such a fine variety in Madresfield Court, between which and the Muscat Hamburg there is but little if anything to choose as regards flavour when well ripened, it does not seem worth while to continue its culture, the former kind having so many other points in its favour. Black Alicante was represented by some excellent all-round bunches,

Grape at the best, cropping qualities and flavour duly considered.

In Muscat of Alexandria the white Grapes were splendidly represented. Many of the exhibits were of superb quality in every respect. The competition, although good in the chief class, did not equal that at the International at Manchester on the last occasion. The colour of the 1st prize lots was in nearly every instance all that one could possibly desire to attain. The best of these Muscats were run closely by the three grand bunches of Golden Champion amongst one of the collections of fruits. These were probably as fine in berry, bunch, and colour as this Grape has ever been shown; the skin of the berries was perfectly clear, there being no trace of the brownish markings which often characterise this otherwise fine Grape. Duke of Buccleuch was not shown anything like as good as the foregoing, hardly an exhibition sample, with one or two exceptions being staged, the bunches being mostly small, but the berries good. Golden Queen in one instance was quite free from its peculiar blemish; it is not, however, a Grape that can be recom-

for explanations of terms they see in your columns, especially in those giving market quotations. For instance, in the last number you say, giving prices [The equivalents we have here supplied for our correspondent's edification. Ed.], Apples, half-sieve=14 imp. quarts; do., Tasmanian, case = 250 Apples; Cherries, half-sieve=14 quarts; Gooseberries, half-sieve=14 quarts; Lemons, case = 240 to 500; Celery, bundle = usually 20 heads; Mushrooms, punnet=7 inches in diameter, 1 inch deep; Mustard, punnet=do.; Seakale, basket = 12 to 18 heads; Turnips, bundle=one dozen; new Potatos, 6s. to 8s.—per cwt.; old Potatos, per ton—of 20 cwt.=2240 lb.

I am asked, what quantity, or weight, or count, is meant by half-sieve, case, bundle, punnet, and basket, and how many (pounds, or parts of bushel) new Potatos sell for 6s. or 8s., and how many pounds there are in the ton of old Potatos, which bring £7 sterling—that is, is it 2000 lb. or 2240 lb. that are sold for £7? Many similar questions are asked that I cannot answer. I think you could make an interesting article for your readers living outside of England by explaining all the various terms that are used in marketing fruits, and grain, and vegetables, &c. Here we use the short ton, 2000 lb., or the long ton, 2240 lb.; but invariably, where law does not fix the pounds, we say long or short ton, as the case may be.

We have bushels for various grains and vegetables and fruits, but each fixed at so many pounds to the bushel. We have in California and on the Pacific coast generally, centals (or 100 lb.) for grain, but everywhere else it is bushels. We know nothing of "quarters" except in English grain quotation, and then take it to mean 40 lb. of Wheat. We buy and sell Apples and other large fruits, Potatos, Turnips, Carrots, and like roots by the bushel (your standard imperial bushel is substantially our bushel); while Strawberries, Raspberries, Currants, Gooseberries, and the like are sold by the quart or pound; Cherries, by quart, pound, or 100 lb.; eggs, by the dozen or pound; Lemons and Oranges by the dozen, hundred, or box, and the size of box is fixed by law and known to all; Celery by the dozen, and that means one dozen bunches containing 25 stalks, heads, or roots, or whatever you may call the full complement of stalks that grow on one root. We use baskets, of course, but they range in size from ½-pint to 5 bushels, and the term is never used in buying or selling anything when any quantity or weight is at stake.

Peaches, Pears, and the like are often sold by the basket, but when that is done, we say "so much for 1 bushel basket, so much for half-bushel basket, so much for a peck basket," thus showing that basket refers only to the vehicle, and not to the measure. Run over your various quotations of measure or quantity, and you will find a hundred that are merely technical, and not known outside your own range. Even in selling meats, I see the same state of affairs existing, and it is very difficult for us to tell what your quoted prices really mean. We know what a pound is, or a gallon, or a bushel, or a dozen, or a score, or a long ton or a short ton, but cannot guess as to sieve, or case, or punnet, or basket, or bundle! D. O. C.

INDIA.

BOTANIC GARDEN, CALCUTTA.

The Report for the year 1890-91 shows that steady progress has been made in improving the Botanic Garden, not only as a scientific centre of the highest value to all botanical students, but also as a pleasurable and instructive resort to the public. More than 20,000 specimens were added to the Herbarium, illustrating the flora of regions so widely removed as Central Asia, Australia, Assam, Perak, the Shan States, the Khasi Hills, the Andaman Islands, and the Great Coco Island. Arrangements were also made for continuing the work of collection in Assam, Upper Burma, and the Andamans.

A third volume was added to the interesting series of garden Annals, containing monographs by Dr. King and Dr. Prain on certain Indian and Indo-Malayan species. The Lloyd Botanic Garden in Darjeeling, which is under Dr. King's supervision, is reported to be in good order. Under recent arrangements the Curator of this garden is charged with the task of improving the station of Darjeeling by planting and looking after young trees. In course of time, it is hoped that the damage done in past years by the wanton destruction of fine trees may be in some measure repaired.

CROSS-BRED ORCHIDS.

I had an opportunity recently to look over the large collection of Orchids which have been raised from seed in Mr. Cookson's garden at Oakwood, Wylam-on-Tyne. Much progress has been made in the work of hybridising with *Cypripediums*, *Dendrobiums*, *Calanthes*, and a few others of the more popular Orchids. I believe Mr. Cookson was the first to obtain plants of the cool-house *Odontoglossums*. An attempt is now being made to cross *Disa grandiflora* with the *Phaius*. It may fail, for many failures have to be recorded in this kind of work, but with each failure some useful lesson for future work is learned. I was much struck with the vigorous growth of *Phaius Cooksoni* ×, which is a recent acquisition raised by crossing *P. Wallichii* with the pollen of *P. tuberosus*. The flowers were fertilised on March 26, 1887; the seed vessels ripened in December of the same year, and the seeds were sown on the 16th of that month. The plants soon appeared, and grew so rapidly that the first flowering plant was exhibited at the Royal Horticultural Society's meeting in February, 1890. The seedling plants have made good progress, and some of them have been already divided. No doubt the plants have taken their vigorous constitution from the seed-bearing plant, but the flowers partake of the characteristics of the parents, and so distinct in their way that the plant itself may well be ranked as a true species.

P. tuberosus, a native of Madagascar, is quite distinct as a species. It is a species which is remarkably well grown by Mr. William Murray, Mr. Cookson's gardener, who has much improved the Orchids since he took charge of them. His method of culture is to attach the plants of *Phaius* to Teak rafts in the first place, on a base of living sphagnum moss, and these rafts are placed for a part of their depth in the usual compost of fibrous peat and sphagnum moss, with ample drainage. The plants had rooted freely down the Teak rods, and into the compost, which was kept moist, so that the sphagnum moss on the surface made healthy growth, and was full of vigorous roots. The warmest house is necessary, of course, for these plants. *P. Humblotii*, also introduced from Madagascar about the same time as the other, has proved to be a distinct and beautiful autumn-flowering species, easily grown now that its requirements have become better understood. Humblot, who gathered both species, says, that the plant grows at the base of large trees, in dense shade, and is in a moist state all the year round. It requires a hot and moist atmosphere, but not such close shading as one would suppose. The plant is well figured in the *Reichenbachia*, and the editor remarks that it should be "shaded from direct sunlight, but not heavily shaded, inasmuch as the strongest diffused light we can give it here only equals that in dense shade under a tropical sun." It requires a light compost, and succeeds well with pot culture. J. Douglas.

[It may interest some of our readers, as well as serve to indicate the possibilities of Orchid hybridising and crossing, if we supplement Mr. Douglas's words. A recent visit to Oakwood, afforded Mr. Murray the opportunity of showing his various treasures in crosses and hybrids, and of telling us what species of plants he had operated on. *Cattleya Wardiana* had been crossed with *Laelia purpurata*, *L. cinnabarina* and *Cattleya Mossiae*; *Dendrobium nobile*

var. *alba* and *D. japonicum*, this had produced the handsome *D. Cassiope* ×; *D. Macarthurii* and *D. Dearii*. In *Cattleya* crosses we found *C. Mendelii* × *L. purpurata*, *C. Dowiana* with the latter species; *C. Trianae* and *Laelia harpophylla*, *C. Lawrenceana* and *C. Mossiae*, *C. Dowiana* and *C. speciosa*. In *Dendrobiums*, *D. Bensonii* and *D. Macarthurii*, *D. albo sanguineum* and *D. nobile*, *D. Wardianum* and *D. luteolum*. *Cypripedium* furnishes many crosses, and we found *C. bellatulum* crossed with *C. Morganæ* ×; *C. Sanderianum* and *C. hirsutissimum*; *C. Godeiroya* with *C. superbum*, and with *Spicerianum*—most promising unions; *C. selligerum* and *C. Morganæ*; *C. Sanderianum* and *C. lo* ×; *C. Sanderianum* and *C. Veitchii*. The above shows what one gentleman is doing in the way of raising novelties from various species of Orchids, and, moreover, performing the work systematically, and with certain definite objects in view. It is almost needless to say, that the record of every cross is committed to writing, and a complete pedigree register kept. Ed.]

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

SEASONABLE OPERATIONS.—In order to keep up a stock of fruitful trees, a certain amount of planting, root-lifting, and relaying must be done annually, rooting out any trees which, through old age, have become unfruitful. Pyramids are usually planted near the walks in the kitchen or the fruit gardens; but, apart from appearances, this method of training the fruit trees has little to recommend it, the bush form being much better generally, the bushes cropping earlier, and producing finer fruits. Instead, therefore, of training up a stem leader, this is pruned back at about 2 feet from the ground, and others, the result of the cutting back, trained up at about equal distances from it. In a few years these shoots become in their entire length clothed with fruit-buds, and it is from such bushes that the best fruits are gathered. If the Apple be worked on the Paradise, and the Pear on the Quince, the bushes may be planted closely together, and a truly fine collection of each grown on a small piece of land. When these come into bearing, the aged or unfruitful trees in the open or on walls may be destroyed, the space being replanted with either cordons or some other favoured form, and in this way any scarcity of fruit will be prevented.

TOP-DRESSING.—This work may be commenced as the trees are cleared of fruit, removing the old soil to a good depth, some of the roots being brought to the top, the tips cut with a knife, and relaid in good soil. Apricots and Sweet Cherry trees may now safely be done, good loam, bone-meal, and mortar and burnt earth being used in the new compost. After this has been placed over and about the roots, tread it firmly, and give a mulch of straw manure. If it is not intended to severely root-prune Pears, the trees may be top-dressed, and where the trees are lacking in vigour a trench may be opened at a distance of 3 feet from the stem, removing the soil to the depth and width of 2 feet; then trim the amputated or bruised roots, and refill the trench with fresh compost. Pyramid trees will greatly benefit if done in this way, and much finer fruit the following season will be obtained.

ORCHARDS.—Where the land is known—by the small size of the fruits—to be impoverished, thorough soaking of the soil with farm-yard drainage or other manurial aid in a liquid form will do much good in strengthening the buds. If this be done now, and repeated at intervals of a few weeks during the winter months, the trees will be greatly benefited. Large orchards under turf should be grazed with sheep or cattle, and never should the grass be reserved for hay. H. Markham, Mereworth Castle, Maidstone.

THE ORCHID HOUSES.

THE EAST INDIA-HOUSE.—There is not any better *Cypripedium* than *C. Morganæ* ×, and I would advise those amateurs who have it not, to procure a plant forthwith, for though the plant has seen big prices, it may now be bought cheaper than is likely to be the case for some long time to come. It is the

best of growers, handsome in foliage and flower-spike, with grand flowers in numbers, three and four on a stalk. The most suitable compost for the plant is one consisting of three parts peat to one of turf, from which the fine soil has been knocked out, and a small quantity of sphagnum moss, the latter being always used in the top layer, as it adds to the appearance of the plant, and is an almost certain indicator of the whole as regards moisture. *C. ceananthum superbum* × is another variety that is always admired, and which blooms at this season. The plant may be obtained at a moderate price. That many of the crosses of *Cypripedium* are amongst the most satisfactory-flowering Orchids for the dweller in large towns, I think no one will deny; and their easy cultivation, is another inducement to amateurs to grow them. *Dendrobium Phalaopsis*, a magnificent species, is now in flower. It is one that everyone should possess, the plant appearing to grow freely under the treatment accorded to *D. bigibbum*. *D. formosum giganteum* is another of the fine autumn-flowering Dendrobes, and the blooms being large and white, add greatly to its value. The plant requires a long rest, and to be kept dry, and never placed in a house with a low temperature to ripen its growth, the Cattleya-house being the best place for it. I may remark here, apropos of resting the plant, that the pseudo-bulbs must not be allowed, from want of water, to shrivel. The temperature of the East India-house should be kept from 68° to 70° at night, with a rise of 7° during the day by fire-heat; if by sun, then 15° will not do any harm, but air must be carefully afforded.

INTERMEDIATE-HOUSE.—*Cattleya pumila*, under which name I include *C. marginata*, *C. Dayana*, and *Lælia præstans*, are among the best of the dwarf Cattleyas, and these flowers are now opening, and will last in perfection for three weeks. We have plants in 8-inch baskets that have from twenty to thirty flowers each, almost enveloping the plant and basket. *Dendrochilum Cobbianum* is now showing its flower-spikes, and should any of the plants need re-potting, it will be done at once, the young roots pushing away from the base of the young pseudotubers when the flower-spikes have reached a length of 6 inches. *Epidendrum Wallisii* will require much attention, or thrips will soon begin to harbour in the heart of the new growth. A camel's-hair pencil wetted with saliva will either take out the young embryo thrips or stick them down in such a manner that they can do no harm. *Vanda Kimballiana* is opening its flowers, and demonstrating what a lovely Orchid it is. A well-known grower of Orchids the other day, classed it with *Phalaopsis* for beauty. *V. Kimballiana* should not be grown in a hot place, as the plants will then be sure to "spot" badly, but grown with the other Vandas in the Intermediate-house. The temperature of the Intermediate-house may be 60° at night, that of the Cattleya-house 65° to 67°, and the cool house at 50°. *A. G. Catt, Parkfield, Hallow, Worcester.*

FRUITS UNDER GLASS.

PINE-APPLES.—In the absence of sunny weather of late, much attention will have been required to maintain the plants in health, want of bright light causing drawn and weak leaves, and the late-fruiters need all the light possible, if well-finished fruits are looked for. Shading must now be entirely discontinued, and all shade-washes on the glass removed. Ripening fruits should be placed in a dry house to increase their flavour, and if a separate house is not at command, a dry room is a good place for the plants. Keep them dry at the roots. It is now a good time to re-arrange the house for the winter, separating those in fruit from the others, the successions requiring more ventilation and less water than the fruiters. These latter will require greater warmth and atmospheric moisture, carefully supplying them with manure-water made from guano; avoiding excess of moisture at the root or in the house, this causing weak leaves, and damaging the fruits. Keep the plants steadily moving, with a genial growing bottom-heat, and do not get the roots in a parched state by overheating the hot-water pipes; indeed I prefer to rely on a bed of tan, or tree-leaves and stable-dung, to any great use of fire heat. If such heating materials are employed, it is well to add some fresh tan, leaves, &c., taking care not to allow the heat to rise higher than 90°. A few degrees less is better than 1° above 90°, unless the plants are short of roots, when 90° is a safe tem-

perature if the watering be done with care. The temperature by day may range from 75° to 85°, according to the weather, with the temperature at night being 70°.

Successions will require less heat, but they must be kept growing, and to this end the sunheat should be utilised as much as possible, the night temperature being kept at from 60° to 65°, the minimum being that of cold nights; the day temperature should be 70°. Overhead syringing may now be discontinued, sufficient moisture being supplied by damping down. When fermenting materials in large quantities are made use of, prepare it in advance and under cover. Suckers, which have been grown in frames will now require more warmth than a frame affords, re-potting the stronger ones, and plunging these in a bottom-heat of 80° to 90°. I do not like the very late potting of Pines, and would only re-pot those that might require it badly; and do not afford them a large shift, keeping these re-potted suckers close for a short time, and water them very carefully. A night temperature of 55° to 60° will suffice for such suckers as were potted late in the summer, and are well-rooted. These have no need to be grown quickly, but just kept moving throughout the winter. Plants taken out of frames are apt to suffer at the roots from want of water when brought into a dryer place, and require attention accordingly. *G. Wythes, Syon House, Brentford, W.*

THE FLOWER GARDEN.

HARDY PERENNIAL FLOWERS.—Just now, when we are dolefully anticipating the change the first frost will make in the beds of Pelargoniums and tender plants generally, one's thoughts naturally revert to the variety, beauty, and easy culture of a host of hardy perennial herbaceous plants, which are not in the least injured by a few degrees of frost. And the question will be asked, could not these plants be grown where tender and half-hardy ones now occupy the beds in summer and early autumn? Geometrical-shaped beds in parterres are unsuitable for many kinds of herbaceous plants, but isolated beds—or a number of them put together without geometry—on the lawn, and filled with bulbous and the ordinary summer bedding plants, might well be planted with a selection of hardy perennial plants, which would afford a good succession of flowers. These latter might be intermixed with a few Pelargoniums, Calceolarias, Lobelias, &c., in the same manner as is done in the herbaceous borders to be met with in many kitchen gardens.

During the past and present months, the following species and varieties would render good returns:—*Aster albus*, *A. Amellus*, *A. multiflorus*, *A. pyrenæus*, *A. besarabicus*; *Anemone japonica*, the rose-coloured flower, and the white variety, *Honorine Jobert*; *Gaillardia grandiflora*, *Helianthus* (*Sunflower*) *multiflorus*, *Aconitum autumnale*, *Lobelia cardinalis*, *Phygelius capensis*, *Phloxes*, *Antirrhinums*, *Sedum spectabile*, *Lupinus polyphyllus*, *Pentstemons*, *Ilacanthus candicans*, *Galegas*, *Scabiosa suaveolens*, *Rudbeckia Neumannii*, *Lilies tigrinum* and *speciosum*. All plants needing support should be carefully secured, keeping the sticks and ties well out of sight, and remove flowers past their best, and decayed stems, and leaves.

CARNATIONS.—Here, I never put up layered border Carnations, or winter them in cold pits and frames, but I usually plant the layers direct from the mother plants early in the present month, the ground being previously manured and dug, and well broken down, treading it over evenly, and top-dressed with soot and wood-ashes, which are scratched in with a rake when the levelling is done. Soot and wood-ashes protect the plants from their chief enemy, wire-worms, and also some kinds of grubs, which feed on the roots. The plants, taken up with nice balls, are planted 1 foot apart, letting them down as low as the "grass," and making the soil firm about them. If a dressing of wood or sifted coal-ashes be laid on between the plants and rows, to the thickness of about 2 inches, frost will not readily reach the roots.

CUTTINGS OF CALCEOLARIAS, ETC.—The required number of Calceolaria, Gnaphalium, and Leucophyton Brownii cuttings should be now made and put in, in the manner advised in the *Gardeners' Chronicle*, Sept. 19, p. 339. Many persons fail to propagate Leucophyton, because they place the cuttings in heat instead of dibbling them into sandy soil in a cold frame, as they would Calceolarias, affording the same sort of after-treatment. Leuco-

phyton is almost hardy, and very little protection is required by the young plants in frosty weather.

BEDDING PLANTS AND SPECIMEN PELARGONIUMS.—All recently-struck bedding plants, as well as specimen Pelargoniums, &c., should be got under cover. Pelargoniums and store pots of *Ageratum*, *Lobelia*, *Verbena*, and such like, will winter very well in a light house from which frost and damp can be excluded, the soil in the pots being kept on the dry side. *Alternantheras* and *Mesembryanthemums* require to be wintered in mild heat, and very near to the light. *H. W. Ward, Longford Castle, Salisbury.*

PLANTS UNDER GLASS.

THE BELLADONNA LILY.—It is seldom that this fine autumn-flowering plant is seen in gardens at the present time, and when it is met with, it is usually in the herbaceous borders, and rarely flourishing. The best place for the plant is at the foot of a south or south-west wall in rich sandy soil. If the soil be heavy, a trench should be dug 18 inches deep and 2 feet wide, and having cleared out the crumbs of soil, place 6 inches of rough drainage, and above this freshly-cut turves, and fill up the space with sandy compost. In planting, place the bulbs 3 inches below the surface, with a handful of clean sand under each.

From the middle of the month of February to the beginning of March, is the best period for planting and shifting the Belladonna Lily. During the growing season a good supply of water at the root is of service, and in dry weather a mulch of half-rotted dung. Last spring I divided a bed which had not been disturbed for a great number of years, and after selecting the best bulbs, planted them in the way above described, in front of a Peach-case, 120 feet in length. These bulbs have given us a magnificent supply of their delicate flowers during the past three weeks.

HERBACEOUS CALCEOLARIAS in small pots should now be shifted into larger pots, so as to avoid any check to growth. A good compost for these plants consists of two parts good loam, and one each of leaf-mould and finely-sifted decayed cow manure, and sand in proportion. Place the plants where they will get full light, and near to the glass in a cold house or pit. Fumigate the structure occasionally to keep the plants clean.

PRIMULAS.—These will now require to be taken into drier quarters, as if left out in cold frames, there will be danger of them getting injured by damp. A disused Melon or Cucumber-house is a suitable place for these plants during winter, keeping them well to the light. Plants which are throwing up their flowers should have clear manure-water afforded them once a week.

STOCKS AND SCHIZANTHUS.—The present is a suitable time to make a sowing of intermediate and East Lothian stocks, which are very useful for cutting and for house decoration; make, likewise, a good sowing of those lovely annuals, *Schizanthus pinnatus* and *S. retusus*, for furnishing the conservatory and greenhouse during the spring months. Sow the seeds in a 48-pot, and place in a cold frame till there is danger from a frost, when they ought to be removed to a pit where the mean temperature may be kept from 45° to 50°, standing the plants near the glass to prevent drawing. Thin out the seedlings when large enough to four or five in a pot, shift the potful of plants into larger pots early in the spring, employing a potting compost of two parts loam and one each of rotted manure, leaf-mould, and sand in proportion.

VOILETS.—Those which are intended to be grown in frames during the winter should be lifted without further delay. In doing this, preserve as many of the roots as possible, and place the frames in which they are to be grown in a sheltered spot, but where the sun shines from morning till evening. After planting, finish off with a dressing of fresh wood ashes and soot. Keep close for three or four days, and afterwards give abundance of air on favourable occasions.

BULBS.—Another batch of Hyacinths, Tulips, &c., should be potted; also early-flowering Lilies when obtainable, it not being good practice to keep these bulbs out of the soil for long periods. These early Lilies will be found very valuable in spring decoration, especially those of *L. longiflorum*. *R. Milner, Peirce Castle, Swansea.*

EDITORIAL NOTICES.

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

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

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

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY	Oct. 6	{ Committee Meeting: Conference on Michaelmas Daisies and Perennial Sunflowers, at the Royal Horticultural Society's Gardens at Chiswick, at 11 A.M.
WEDNESDAY	Oct. 7	{ Conference on Conifers, at the Royal Horticultural Society's Gardens at Chiswick.
THURSDAY	Oct. 8	{ Resumption of Conifer Conference, at the Royal Horticultural Society's Gardens, Chiswick.

SHOW.

THURSDAY	Oct. 8	{ Crystal Palace Great Fruit Show (three days.)
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SALES.

MONDAY	Oct. 5	{ Dutch Bulbs, at Stevens' Rooms. Nursery Stock, at The Nurseries, Sunningdale, Berks, by Messrs. Protheroe & Morris (six days). Dutch Bulbs at Protheroe & Morris' Rooms.
TUESDAY	Oct. 6	{ Nursery Stock, at 2, Bedford Road, Green Street, Enfield Highway, by Messrs. Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY	Oct. 7	{ Dutch Bulbs at Stevens' Rooms. Clearance Sale of Greenhouse Plants, Lights, and Piping, at Nursery Farm Lane, Wilham Green, S.W., by Protheroe & Morris. Dutch Bulbs at Protheroe & Morris' Rooms.
THURSDAY	Oct. 8	{ Valuable Imported Orchids, from Messrs. E. Sander & Co., at Stevens' Rooms. Annual Sale of young Nursery Stock, at Wood Lane Nursery, Isleworth, by Protheroe & Morris. Greenhouse Plants, Lease, Boilers, and other Fittings, at Nursery, Beaumont Road, Leyton, by Protheroe & Morris.
FRIDAY	Oct. 9	{ Nursery Stock, at High Broom Nursery, Tunbridge Wells, by Protheroe & Morris. Imported and Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY	Oct. 10	{ Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—53° I.

Should the weather continue as propitious as it is at the moment of writing, the success of the Chiswick Conferences next week will be assured. We are obliged to write in the conditional, for past experience has shown not only the uncertainty of the weather, but also that the attendance at some of the best and most interesting exhibitions and congresses there has been scanty. On the other hand, on many

occasions, notably at the Apple Conference, the number of visitors has been large, and in nearly all cases larger than in the Drill Hall.

Let us hope that bright weather, and an interesting programme, will secure a large company. Those who visit the garden, hallowed by so many associations, though bereft of more than half its former area, will note with pleasure signs that the evil days of the Society have passed with the end of the Kensington régime; and that, thanks to the devotion of the Council, and specially of its officers for the last two or three years, a manifest improvement is visible. The traces of the lamentable neglect of former years, which we should qualify as shameful did we not know the circumstances, are disappearing under the more liberal expenditure which the finances now render possible, and although a great deal remains to be done, a great deal has been accomplished.

A generally abundant fruit crop will enable visitors to inspect a well-filled fruit-room, and to compare notes on the ground and in the vineries. Messrs. MAYFARTH'S apparatus for the drying of fruits, to which we have frequently referred, will be shown in action, and will indicate one way in which surplus fruit may, in such a season as this, profitably be dealt with. For Apples of most kinds, the apparatus seems quite successful; but so far as Plums are concerned, the same amount of success has not hitherto been attained, probably because we do not yet know the kind of Plum best suited for the purpose. So far, the Fellenberg has proved the most suitable, and some that we had the opportunity of tasting a few days since, were very good imitations of French Prunes.

The collections of Michaelmas Daisies and of perennial Sunflowers will be at their best. As many readers will remember, a large collection of species of both genera has been grown this season at Chiswick, and a nomenclature committee has carefully examined the plants, during growth, with a view of ascertaining the correct names, abolishing useless synonyms, and of noting which kinds are the most attractive for garden purposes. Aster is one of those genera in which the limits of species, as generally understood, are even less distinctly marked than usual. We have a crowd of forms, merging by almost imperceptible gradations one into the other, so that none shall say (with any regard for his own reputation), "Here endeth species A," or, "Here beginneth species B." Nevertheless, in spite of these little difficulties, which do but form an agreeable pastime for systematic botanists! it is easy to pick out from the main crop a few which are remarkable above their fellows, for their beauty of colour, their freedom of flowering, their tall, or their dwarf stature, their earlier, or their later period of blooming, and so on. These forms have accordingly been noted, and names affixed to them, so that the lovers of herbaceous perennials in the future will have some authenticated evidence before them when making their selections. The Fellows of the Society owe not a little to the members of the committees, who without fee or reward other than a pleasant sense of duty fulfilled, devote so much time to the Society's work. At a subsequent period we shall be in a position to publish a complete list of the more desirable kinds of Aster and Sunflower; in the meantime we may mention, among Helianthus, H. orgyalis, the most graceful of all in its foliage; the large-flowered varieties of H. multiflorus, the Soleil d'Or, or improved double form of the same species; the citron-yellow,

H. decapetalus, H. rigidus, Heliopsis laevis, with rich orange flowers, &c.

Among dwarf Asters, none are better than A. Amellus bessarabicus and acris. Later on come various forms of diffusus, such as horizontalis, multiflorus, and many others. Of taller-growing varieties, the form of Aster Novi Belgii, known as Robert Parker (lilac); the variety of A. Novae Angliae, called puniceus pulcherrimus (white); and A. Novae Angliae roseus, are most remarkable. Aster Linosyris, a yellow-flowering species, native in some parts of Britain, is remarkable for the contrast it affords to the other species, which range from white to bluish, and to rosy-lilac. In the determination of these species, the committee has had the advantage of the co-operation of Mr. DEWAR, who has a large collection under his charge at Kew. The Conference on these plants will be held on Tuesday next, beginning at 2 P.M.

On the two following days it will be the turn of the Conifers, and a most interesting exhibition will, in all probability, be got together. In the first place, a special area, 150 feet long by 37 feet in width, will be specially laid out for their reception, and Messrs. VEITCH, JEFFRIES, CUTBUSH, and others, have announced their intention of taking part. The specimens of cut branches with cones, for which special prizes, —including a Veitch Medal—are offered, will also, presumably, be very numerous and interesting, as applications have been made to Her Majesty the QUEEN to send specimens from Balmoral and Osborne; while the leading Scottish, Irish, and English Conifer-growers have been solicited to take part in the exhibition. From Kew upwards of 300 specimens are to be exhibited. In Scotland, the services of our excellent correspondent, Mr. MALCOLM DUNN, have been enlisted; and from the details given in another column it is seen that a representative collection from the various counties will be forthcoming. Bearing in mind the vast importance and the great interest of the subject, both from an economic and from an æsthetic point of view, we can but hope that the English growers will be as well represented as the Scotch.

ROYAL HORTICULTURAL SOCIETY.—The next meetings of the Floral, Fruit, and Orchid Committees will be held in the Gardens, at Chiswick, on October 6, at 11 A.M.

NATIONAL CHRYSANTHEMUM SOCIETY.—A meeting of the committee took place on the 28th ult., at Anderton's Hotel, Fleet Street, Mr. E. C. JUKES in the chair, the attendance being, as usual, large. The matter of providing a new design for the Society's Certificate of Merit was referred to the Schedule sub-Committee, with instructions to select one, and issue the Certificate without delay. The Secretary reported it had been definitely arranged that the Conference on Chrysanthemum sports in connection with the November show, would take place in the Board Room at the Royal Aquarium, at 6 P.M., on the 10th, the opening day. The special awards recommended by the judges at the early Chrysanthemum show were approved by the meeting. On the application of the Market Harborough Chrysanthemum Society, Messrs. J. WRIGHT, of the Temple, and W. THEOBALD, of Highgate, were nominated as judges at the Chrysanthemum show at Market Harborough on November 11. An interim financial statement was made by the Secretary, of a satisfactory character. The Secretary was empowered to make the necessary arrangements for the November show. Eight new members were elected. The usual vote of thanks to the Chairman closed the proceedings.

THE PROSPECTS OF THE POTATO CROP.—As I have just returned from a ten days' trip to Scotland that I took for the purpose of applying the

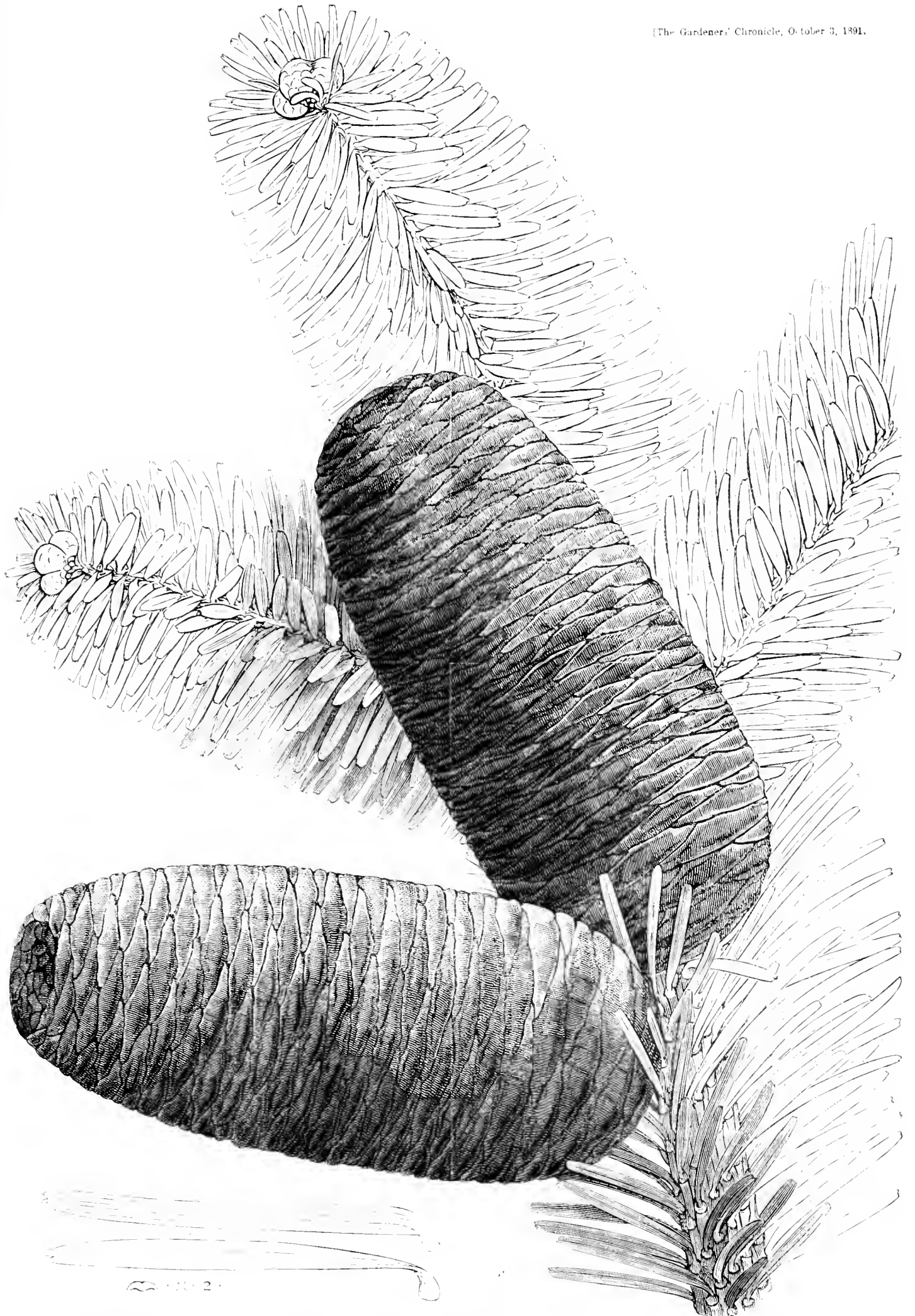


FIG. 42.—*ABIES WEBBIANA*. SHOOT AND CONES, NATURAL SIZE; LEAVES, DEEP GREEN ABOVE, SILVERY BENEATH; CONES, PURPLE. (SEE P. 395.)

Bordeaux Mixture, with a view to seeing how far one dressing would stay the progress of the disease in that country, you may be interested in hearing of the crop. I occupied my whole time at looking at Potatoes round Dunbar, Edinburgh, Dundee, and Arbroath, and from what I saw, unless the crop is damaged by blight which was only just showing in places, the crop will be an immense one. Upon one farm the crop upon 300 acres will not be far short of 4000 tons. Several large fields I looked at will turn out 10 and 12 tons to the acre. I daresay, as I was introduced to the farmers by the editor of the *North British Agriculturist*, they were among the best in Scotland; but I went over a number besides, and in all cases the crop was good, and in driving about the country one could not fail to notice the flourishing appearance of the bine, and upon examining the bottoms, all the promise of the top was carried out. In my opinion the Scotch have a grand crop once more; they certainly deserve it upon the best farms, for their system of culture would be difficult to improve upon, it is so suited to local requirements of climate, soil, &c. On the 21st. I examined the R.A.S. experiment with the Bordeaux mixture, and found the bine of 2 acres of Regents dressed with the 2 per cent. solution three times, still green and growing. This was at Sittingbourne, in Kent; the farm is at Milton, 1 mile from the station, and well worth anyone's time to see. The land is most highly cultivated, so the disease has had every chance. *Wm. Whithead Cousins, South Row, Covent Garden Market, in Agricultural Gazette, September 28.*

BEGONIAS AT TRING PARK.—The tuberous Begonias seem to have done well as bedding plants this wet season, and one of the best effects we have seen is in the Night Hon. Lord ROTHSCHILD'S garden at Tring Park. In one of the many garden nooks there, the rising background planted with handsome Conifers, fronted by charmingly-arranged flowers, among which the Lilies, Gladioli, and many showy annual and perennial and scented plants, such as Lavender bushes, are conspicuous, and the whole edged with *Abies pumila*; the middle of the grass-plot is arranged as a geometrical garden. The centre is chiefly of Clematis, with some side beds of Violas. The radiating beds alternate rich dark scarlet Begonias, edged with *Centaurea*; dark Heliotrope, edged with blue *Lobelia*; and silver variegated *Pelargonium*, with a band of dark *Iresine*, edged with yellow *Pyrethrum*. Around, at a proper distance to render the whole effective, are circular beds, in which the centres are occupied by noble standard clipped Golden Yews and Golden Queen Hollies, the beds beneath them being planted with suitable flowers. One bed of large yellow Begonias, with a band of *Iresine* and edging of *Centaurea*, is very effective. Only decided colours of Begonias are grown at Tring Park (chiefly rich dark scarlet and yellow), and the manner in which Mr. E. HILL, the gardener there, works them, is worthy of note. They are grown from home-raised selected seeds, and as such vary too much to be indiscriminately planted. Where they are wanted to make an effect among other things, they are planted out the first year in trial beds, from which all of the proper colour and uniform habit are marked, and the marked ones only are started at the proper time, and planted as they now appear in the effective arrangement alluded to above.

VEGETABLE AND FRUIT CULTURE CLASSES.—Arrangements have been made for holding classes for the study of the principles and practice of horticulture in the Grosvenor Museum, Chester. The botanical instruction will be delivered by Mr. J. D. SIDDALE; practical demonstrations in pruning, grafting, planting, packing, storing; also lectures on general culture will be given by Mr. JOHN TAYLOR, Hoole Hall Gardens; diseases of crops will be treated by Mr. R. NEWSREAD, Curator of the Museum. It is intended to illustrate the lectures by lantern pictures, microscopes, and to utilise the excellent life histories of injurious insects now in the museum

there. These classes should prove useful to the numerous young gardeners in the local nurseries and private gardens.

THE HYGIENIC VALUE OF THE ATMOSPHERE IN WOODS AND FORESTS.—The *Biedermann's Centralblatt für Agricultur-Chemie* has recently expressed an adverse opinion on the theory which attributes the healthiness of living near woods and forests to the richness of the atmosphere in oxygen. It states that the atmosphere in the neighbourhood of trees does not contain any excess of oxygen, as is commonly presumed, and states that this will not be surprising if it be remembered what a great difference exists between the consumption of oxygen by animal-life, and the exhalation of this gas by the life-processes of plant-life. The writer calculates that a few people living in about an acre of woodland will more than compensate for the oxygen given off by the trees. If this be true, and the writer vouches for it, the healthiness of well-wooded districts must be attributed to the greater purity of the air in such districts. In a wood there is no smoke, no sewage, no noxious vapours due to human civilisation, and very few of the germs and bacteria which are found in towns. Moreover, it has been shown by LERASINI and ARATA that the innumerable leaves and twigs of a wood exercise what may be termed a filtering action upon the air, and tend to collect and retain floating particles and micro-organisms carried thither by the air-currents. Besides this, trees break the inclemency of cold dry winds, which are so dangerous to the respiratory organs, and tend to keep the temperature of the soil uniform. To this it must be added, that in country districts especially, if they are well-wooded, there is more natural ozone than there is elsewhere (there is probably none in crowded towns), and the action of ozone is itself salutary.

TABLE DECORATIONS IN RUSSIA.—Russians, who are very fond of flowers, do not relish a repast when the table is not one mass of fragrant blossoms, and nowhere else in Europe does one see such gorgeous table decorations as in St. Petersburg or Moscow. Large sums of money are often spent for rare Orchids to adorn the board of some wealthy entertainer; and at the dinner given some time ago by Prince NARISKINE to the Diplomatic Corps at St. Petersburg, the flowers in the dining-hall cost over 20,000 roubles.

CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The annual general meeting for the election of officers and committee for the ensuing year, and other business, will be held at the Royal Horticultural Society's gardens, on Friday evening, October 2, at 8 o'clock. The committee have decided to hold a concert during October, in aid of the Gardeners' Orphan Fund, further particulars regarding which will be announced at the annual meeting.

AUSTRALIAN FRUIT IMPORTATIONS.—The probability of large shipments of fruit to this country being made from our Australian colonies in the early future, the practicability of which has been so recently demonstrated by the great quantities of excellent Tasmanian Apples with which our markets have this year been supplied, is now further exemplified by the arrival, this week, of a small consignment of Raisins from the Australian Irrigation Colonies on the River Murray, being the first fruits received from these settlements, the establishment of which, some three or four years ago, has been attended with such remarkable success that their progress has been described by a colonial bishop who recently visited them (Dr. THORNTON, of Ballarat), as simply "amazing." A quantity of Raisins are now on view at the London Offices of the Australian Irrigation Colonies, 35, Queen Victoria Street, E.C. They are entirely sun-dried—the clear dry atmosphere of that part of Australia where the settlements are situated enabling the drying of all descriptions of fruit to be carried out in the most perfect manner and without risk of injury. They have been pronounced of excellent quality, both

in flavour and appearance, and are very attractively put up in 2-lb., 6-lb., and 12-lb. boxes. The above consignment will, in due course, be followed by others of a no less interesting character, embracing the following valuable fruits of commerce:—Oranges, Lemons, Raisins, Currants, Apricots, Peaches, Figs, &c., together with wine, olive oil, and other products, for which a large demand is anticipated in this country in future years. The total area of land constituting the Australian Irrigation Colonies, and of which some 25,000 acres at each of the two settlements (Mildura and Renmark) are now being dealt with, will fall but little short of half a million acres; and although the colonial demand will probably absorb the entire production for some years—there being at present a large importation of these fruits, &c., into Australia from foreign countries—an extended reciprocal trade with the mother country will be early cultivated (more especially with reference to wine, olive oil, &c.), in view of the enormous future production which is confidently anticipated and practically assured.

CHICAGO EXHIBITION.—Mr. J. M. SAMUELS, a nurseryman of Clinton, West Kentucky, is the chief of the Bureau of Horticulture. Mr. J. M. THORPE has been appointed chief of the division of Floriculture.

HYACINTHUS CANDICANS.—The hardiness of this species is beyond doubt, and several other correspondents have written to us to that effect from very different parts of the country. It would seem that the bulbs will not withstand the digging-up and drying method pursued with many other kinds of bulbs, and that if they are dug up when matured, they must be replanted without much delay. Mr. J. Pounsett says that the plant seeds quite freely, and can be raised easily from seed, which will only germinate well the first year, so that any other mode of propagation seems superfluous. Though a native of South Africa, the *Hyacinthus* appears not to have been affected by the late cold wet season, fine spikes of 5½ feet in height being plentiful where the soil was light and rich.

FIGUS REPENS.—Mr. W. FANMER, of Kylemore Castle Gardens, Galway, sends us a fruit of this species with the large leathery leaves which it bears in the fruiting stage, or when away from the wall, and which form so remarkable a contrast with the small papery-leaves of the plant when grown against a wall. The two forms were figured in our columns at p. 51 and p. 53, for January 10, 1891.

STRIPED BEGONIA TUBEROSA BLOSSOMS.—We are indebted to the kindness of Mr. ERNST BENARY for some blossoms of a novelty in tuberous Begonias. These are of various ground colours, as crimson-orange, pink, and others, which are striped, and flaked after the manner of a Carnation, and mostly with whitish-yellow, or the variegation is suffused with the ground colour. A striped Begonia is a novelty that will find favour with those who object to the glaring colour of the selfs.

THE CULTIVATION OF THE DATE IN PERSIA.—Referring to the Date cultivation in Persia, the Consul at Teheran, in a report to the Foreign Office, says:—"The capabilities of the Lower Karun lands for Date cultivation are great, and are sure to attract planters soon. The Date supply keeps increasing year by year, and so does the demand; 60,000 tons were exported last season from Busrah in ocean steamers and coasting craft; 20,000 tons being sent out in boxes, the material for which, in the form of 7,000 tons of cut lengths of wood, with nails, oiled paper for inside wrapping, and iron hooping for outside binding, all prepared for easy putting together, was imported from England and elsewhere. The Palm-leaf itself formed woven bag and basket package coverings for 40,000 tons. An acre of ground contains 600 trees; they bear fruit at five years, and reach full fruition at seven. In a fairly good season, a tree in full bearing gives an average profit of 3 rupees, at which rate the acre would return £20 a-year. While the trees are growing up, the ground,

with the irrigation which they require, yields a crop of Wheat, Clover, or grass, and later can be managed to afford pasture, there being but little heavy shade thrown by the feathery foliage above. It is stated that 160 varieties of Dates are distinguishable by the native growers in these Palm districts. The Arabs pay close attention to conditions of climate, soil, water, &c., so as to cultivate the Date to the best advantage. The Government are encouraging the Date cultivation, and it is said that 60,000 trees have recently been planted on Persian soil.

"BULLETIN DE LA SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES"—An interesting record of the proceedings of a Society of French gardeners, mostly resident in or about London; meetings are held at intervals, which must be very useful and instructive, and means are adopted whereby French gardeners may be placed in English establishments, and English gardeners in corresponding situations in France. The papers printed in the present *Bulletin* are mostly excellent, and show how much our young French friends have profited by their stay here.

THE FÊTE OF ST. FIACRE.—The *Moniteur de l'Horticulture* gives a report of this fête, presided over by M. HENRI DE VILMOISIN, supported by the Archbishop of Paris. There are, it appears, more than 700 members of this philanthropic association, 242 of whom assembled at the banquet.

CHEAP FRUIT RATES.—Mr. W. PARLOW, in the *Star*, September 26, says:—I was much grieved, as will be many other of your readers, on seeing the paragraph in your issue of the 21st, stating that—"Owing to the glut of Plums in Kent, many growers will not pick hundreds of bushels, as the expenses come to more than the price obtainable at the London market." It is pitiful that there should be such waste of good and wholesome food, which could be largely obviated by the railway companies if they would carry fruit at lower rates. Allow me to suggest that the companies should make a special reduction in their charges for conveyance of fruit during the fruit season, or at least during the month or two of most abundant production. This, I think, will prove an advantage both to consumer and producer, and be more remunerative to the companies through an increase in traffic, as at present large supplies are being held back.

THE ADVANTAGES OF COW MANURE.—A foreign contemporary describes the liquid that runs from manure-heaps during any rain as so much "liquid gold," and recommends that properly-protected receptacles should be used for all manures. It calls attention to that too-often neglected source of fertility, the droppings from the poultry-houses, and states that this manure is often equal in value to the finest guano. Cow-dung comes in for a share of praise. It is estimated that fully 80 per cent. of the manurial elements in the food consumed by cows is voided in their excrement. Dr. COLLIER, an American expert, states that in his experiments, which were carried on over a considerable length of time, fully 90 per cent. of all the fertilising constituents of the food consumed by cows was voided, and that this should be used to preserve the soil's fertility. He found that at the usual prices for commercial fertilisers, the amount of plant-food in the daily excrement (liquid and solid) of well-fed cows was worth over ten cents, or 36 dols. a year (1 dol. = 4s. 2d.), and since the daily food of these cows cost 14½ cents per head, nearly three-fourths of the cost of the food was returned again in the manure.

THE CHEMICAL CHANGES WHICH ACCOMPANY THE DEVELOPMENT OF THE POTATO.—*Biedermann's Centralblatt* contains a short paper by MARCACCIO upon the conversion products of starch which take place during the growth of the Potato. It seems that Potato-starch, even in quite ripe Potatoes, becomes converted into cane-sugar; and Barley and Wheat grains, in germinating, double the amount of

cane-sugar at the expense of the starch they originally contained. Samples of Potato meal and finely-cut Potatoes were dried, some in the sun and some in an oven at 45° C., and in both cases an increase of cane-sugar was observed. In germination, the Potato, like the Barley-grain, gains cane-sugar through the conversion of the starch; finally, the cane-sugar breaks down into glucose, or grape-sugar.

BONE-MEAL MANURES.—In a paper published in the *Chemiker Zeitung*, J. STOCKLASE gives the results of an examination into the composition of bone-meal; he analysed various samples prepared by different methods. Sufficient care does not appear to be exercised in the preparation of this valuable manure; sometimes the fat is not properly removed, and this impedes the decomposition in the soil, both of the nitrogenous matter and the phosphate of lime. Steaming is not an altogether commendable process, for it seems that when the pressure is sufficiently great to remove fat, a great deal of the nitrogen, a valuable constituent, also goes. STOCKLASE advocates the extraction of the fat by means of treatment with light petroleum. He regards finely pulverised bone-meal deprived of fat as an excellent manure, superior to basic slag, and not even second to precipitated phosphate in action.

THE "RESPIRATION" OF CACTUS PLANTS.—Cactæ, when exposed to light of moderate intensity, at a temperature of 35° C., = 95° F., give off oxygen and carbonic acid gases simultaneously, their respiration ratio being from 0.98 in the case of *Opuntia* to 0.88 in the case of *Mamillaria*, while their assimilation ratios vary from 2.38 to 2.28. This phenomenon has been recently investigated by E. AUBERT, and from the results of his experiments, he has come to the conclusion that it is due to the fact, that the thin chlorophyllian layer is not able to decompose the whole of the carbonic acid gas evolved by respiration from the colourless parenchyma underneath. The intense light of the tropics decomposes the whole of the carbonic anhydride, and in the tropics the loss of carbon takes place only during the night.

JARRAH WOOD IN CHURCH BUILDING.—The application of foreign woods in English church buildings is essentially an innovation of this latter part of the nineteenth century. In old English ecclesiastical buildings, we naturally look for the timber work, whether constructive or ornamental, to be formed of Oak. The wood seems specially adapted for the purpose, and from its association, to have become like the ancient churches themselves, almost hallowed in its use; but we are, apparently, about to change all this, and the latter half of this progressive century will be recorded in future history by the introduction of timber that will probably puzzle the archæologists of future ages. On the authority of *The Church Times*, we learn that in the recent restorations of one of the most interesting of Kentish churches, namely that of Herne, situated on the road between Canterbury and Herne Bay, and about 2 miles from the last-named watering place, the bays between the principal and intermediate rafters have been filled in with boarding and finished with mouldings, the spandrels being richly carved; the whole of the woodwork of the new roof being of Jarrah wood (*Eucalyptus marginata*) from Western Australia.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.—An exhibition of hardy and other fruits will be held in the Town Hall, Manchester, on the 20th, 21st, 22nd, and 23rd of the present month; and on the 21st and 22nd a Conference will take place in the Town Hall, at 12 o'clock each day. On the first day of the Conference, the Right Hon. the Earl of DERBY will preside, and on the second day, Alderman Sir JAMES WHITEHEAD, Bart., Master of the Fruiterers' Company. The following subjects will be introduced by the gentlemen whose names are appended:—Mr. BAILLIE, of Chester, "The Fruit-growing Movement: Present Day Features and Prospects;" Mr. CHEAL, of Crawley, Sussex, "The Condition, Preparation, and

After-treatment of the Soil for Fruit Culture;" Mr. S. T. WRIGHT, of Hereford, "Fruit Growing for Profit;" Mr. CRUMP, of Madresfield, "The Raising, Budding, Grafting, and Pruning of Apple Trees for Orchard and Estate Planting;" Mr. T. F. RIVERS, of Sawbridgeworth, "Orchard-house Culture;" Mr. EDWARD LUCKHURST, of Romford, "The Importance of Early Planting and Shelter in Fruit Culture."

PUBLICATION RECEIVED.—THORLEY'S *Illustrated Farmers' Almanack and Diary for 1892*.

"CATTLEYA LABIATA VERA."

M. LUCIEN LINDEN sends us a letter of eight quarto pages in length, relating to this subject, and considers that he has an uncontested right to demand its insertion. Although we cannot admit the right, we should have been pleased, as a matter of courtesy, to admit M. Linden's communication if it had been of reasonable length. M. Linden is probably not aware that over forty columns of printed matter were "squeezed out" of our last issue, for which place has to be found in this, in addition to the constant influx of fresh "copy." Under these circumstances, we must confine ourselves to giving a summary of M. Linden's communication, leaving him to print the letter, as he proposes, in full in his *Journal des Orchidées*.

M. Linden begins by the statement that his father, the eminent botanical traveller, had known for a long time that a very remarkable species of *Cattleya* grew in one of the provinces of Brazil. In December, 1889, MM. Linden sent their collector, M. BUNGEROTH, to that province, charged with the duty of collecting several thousand specimens of the plant. In April, 1890, the first batch arrived in Brussels, in good condition. Among them were a dozen which had opened their flowers during the voyage. These were different from those which flowered subsequently in October, and which latter were recognised as *Cattleya labiata autumnalis*. On November 9, at the meeting of the *Orchidienne*, the old type of the species was exhibited, and the jury, on that occasion, were unanimously of opinion that there was no difference between these two plants and the *Cattleya Waroqueeana* exhibited by M. Linden except that some of the varieties of *Waroqueana* had a deeper coloured lip. Mr. O'BRIEN, who had formed one of the jury on the occasion referred to, expressed the same opinion in the *Gardeners' Chronicle* of November 15, 1890. On November 10, M. Jules HYE, of Ghent, sent to M. Linden a flower of *C. labiata autumnalis*, which he had procured at the sale of Mr. Tautz's Orchids. There was no difference between this flower and the majority of those which were expanded in M. Linden's collection at the Horticulture Internationale. On October 22, 1890, Mr. O'BRIEN wrote to M. Linden in the following terms:—"It appears to me that this is autumn-flowering *labiata* of which our old *C. labiata autumnalis* is but the sample; this is the bulk." On the occasion of his visit to the Horticulture Internationale about a fortnight ago, Sir Trevor LAWRENCE stated that he had immediately recognised that *C. Waroqueeana* was the true *labiata autumnalis*. Mr. STATTER, of Manchester, has expressed the same opinion. In November, Messrs. LINDEN sold, at Messrs. PROTHEROE & MORRIS' rooms, a number of the plants under the name of *labiata autumnalis*. Some who were present declared that these plants were merely forms of *Gaskelliana*. Mr. LINDEN replied to these opinions in the December number of the *Journal des Orchidées*. It was, therefore, not in last February, as Mr. Rolfe asserts, but in the preceding November, that the identity of the two *Cattleyas* was established. There are at the present moment in the Orchid-houses of the Horticulture Internationale more than 2000 spathes; supposing that each gives two or three flowers, there will be produced from now to January some 5000 or 6000 flowers. This magnificent crop, the second since the introduction, will be conclusive.

This is the substance of M. Linden's letter; some of the omitted portions are purely of a personal and commercial character, unsuited for the editorial columns.

PLANT NOTES.

TROPEOLUM PENTAPHYLLUM.

THE Chili five-leaved *Tropeolum* deserves more extended cultivation, and may be grown wherever the ordinary and more commonly-grown *T. peregrinum* (canariense) succeeds. The former, as is well-known, is an annual, and both succeed well in light, warm soils, especially in such as are of a calcareous nature, and in sunny positions. *T. pentaphyllum*, it scarcely need be said, is tuberous-rooted, hence the treatment

it requires varies considerably from the above. For growing over trellis-work, or attached in form of handles to artificial basket-summer flower-beds, it has no equal; especially when such handles are of moderate thicknesses, so that the fine growth and vivid blooms show their characteristics. It is also well-adapted for covering iron pillars, sunny walls, &c., in like manner. To succeed with it, however, the tubers should be started into growth betimes, then grown on slowly, but robustly, in small pots, in airy pits, until about the first week in June, when they should be planted out for the summer growth in full sunshine, and such soil as has been suggested.

William Early.

CALCEOLARIA PINNATA.

This plant is an annual one, coming freely from seed sown in the open ground in April, and making a good effect by the end of the month of May, and is then fit to plant out in the beds which it soon fills. The plant may be kept low by being pegged down, or it may be allowed to grow naturally, when it will reach a height of about 2½ feet. It blooms all through the summer and autumn, and is not liable to disease of any sort. It would make a good bedding-out plant, and prevent the disappointment that is too often experienced with the shrubby kinds of Calceolarias dying off with black-stem disease in hot weather. Wm. Smythe.

CELSIA CRETICA.

This pretty greenhouse-plant, sometimes called *Verbascum*, flowered last May and June, and plants of it are again in full bloom. They are very showy and beautiful when arranged with other plants, and its fine spikes of yellow flowers last a long time in good condition. I think no greenhouse or conservatory should be without a few examples of *Celsia cretica*, as it is easily managed if treated in the same manner as herbaceous Calceolarias, and grows freely from seeds sown in light sandy soil, or from cuttings struck under a bell-glass. Wm. Smythe, Basing Park.

CHISWICK NOTES.

SOME borders of Hollyhocks have been very gay at Chiswick this year. One point of importance in reference to this favourite plant is worth noting for the benefit of cultivators. It has been found that plants lifted and housed during winter were affected with the dreaded fungus the following season; whilst those which were not so disturbed (subjected to what may be called natural conditions) presented a clean bill of health. The moral to be deduced from this course of treatment is an obvious one.

BOOK NOTICES.

BUSH FRIENDS IN TASMANIA. By Louisa Anne Meredith. (Macmillan & Co. 4to.)

There are old friends and new, but the older ones usually hold the higher place in our estimation. "Bush friends in Tasmania" are old acquaintances, our good opinion of which has not lessened by lapse of time; but now another batch comes; and, judging by all appearances, they will take no lower place in our regard than their predecessors.

Thirty-three years ago, says the author, I sent to London, for publication, "some of my friends in Tasmania," and the unanimously warm welcome with which the book was greeted both in England and Australia, came like sweetest music into our remote and isolated home. Now, in the late evening of life, when the work of author and artist is usually considered done, I am thankful still to retain some power for the practice of my old pursuits, and for the completion of this second, and certainly last volume, which offers more of my bush friends to the public, and contains plant portraits of yet greater interest and beauty than its predecessor. . . . For a woman nearly eighty years of age to make the voyage from Tasmania to London, bringing a book to publish, was doubtless an exploit of less wisdom than valour; but my purpose is achieved, and I now hope to return and end my days among my children, in the pleasant colony to whose service my best efforts have been so long devoted.

A preface like this seems to imply an appeal for the indulgence of the reviewer. If any such notion actuated the writer, it was in reality wholly uncalled for. We do not know which to admire most, the genial spirit which pervades the whole book, the right-mindedness and sympathy with what is good, beautiful, and true, the pluck of the authoress, or her artistic faculty. There is no straining after effect, either in the text, or in the plates, both of which reflect simply and accurately what was passing before the mind of the author, or what was displayed before her eyes. In twelve large quarto plates the artist has given us a selection from among the most beautiful and interesting plants of Tasmania. Many of them, such as the Acacias, the Correas, the Epacris, the Blandfordias, are well-known inmates of our greenhouses; others were cultivated here in the time of our predecessors, but are rarely seen now. Perhaps Mrs. Meredith's book may do something towards their reintroduction. *Anopterus glandulosa*, a shrub occasionally met with in our conservatories, and always admired, is recommended for trial out-of-doors in the south of England. We should be glad to hear of its being tried; but after the experience of last year, we doubt whether it would survive a "grand winter." The plant has leaves not unlike those of the Portugal Laurel (which, of course, is no Laurel), and the authoress adds, that the *Anopterus* is "well named Laurel, though how, in the usual course of popular colonial nomenclature, it escaped being called a Daisy or a Sunflower, is little short of marvellous." As the plant in question is a Saxifragad, it would be no more incorrect to call it a Daisy than it is to call it a Laurel.

Among the most remarkable of the plants here figured is the *Richea dracophylla*, a plant far more like in superficial appearance to a Bromeliad, than to what it really is, an Epacrid. Like the Waratah (*Telopea*), the *Richea* is in danger of extermination, from the quantities which are every year brought into Hobart. "Not love of beauty, but inconsiderate selfish greed implies such wanton waste."

In addition to the coloured plates, there are series of uncoloured page-plates, called "Poem-titles," because they serve as frontispieces to the numerous tender and graceful little poems with which the work abounds. We are sure the artist will forgive us—may, we think she will sympathise with us, in our preference for these uncoloured representations of plants as gracefully arranged, as accurately drawn, and reproducing the artist's drawing more faithfully than the coloured designs. A word must also be said in praise of Mr. Edward La Trobe Bateman, who has contributed what the authoress calls the quaint lettering to the "Poem-titles." The form given to the letters has been suggested by the outlines of the foliage and branching of the plants represented, and is, if sometimes "quaint," always in harmony with the picture of which it may claim to be part. Sir Joseph Hooker and Professor Westwood have lent their aid in the identification of the plants and insects represented in the volume.

OUR COUNTRY'S FLOWERS AND HOW TO KNOW THEM. By W. J. Gordon. (Day & Son, Berners Street.)

This little book comes before us with a preface by the Rev. Professor Henslow. After giving in the first chapter a list of the popular names of plants, the author plunges into the subject of classification in a chapter which we should fancy must be somewhat appalling to a beginner. In a following chapter the reader is aided by a glossary and a series of coloured plates. In these plates the plants are rather crowded, but they are recognisable, though crude in colouring. Small woodcut outlines are also given, showing the main characteristics of the several genera, and, lastly, the characters in brief of the species. It is evident that much pains and labour have been bestowed on the work; its plan is novel, and its details, so far as we have tested them, accurate.

TILLAGE AND IMPLEMENTS. By Walter J. Malden.

This is one of Messrs. Bell's agricultural series, and is the production of one who has been a farmer from boyhood, who is still a farmer, and who has learnt at the plough-handle most of what he knows about the tilling of the soil. Beginning with the drainage and preparation of the land, the author proceeds to detail the ordinary details of farm work, beginning with the "catch crops," such as *Trifolium incarnatum*, winter Rye, winter Barley, and Tares. Similar directions are given for autumn-sown crops on various descriptions of land for winter-ploughing, spring-seeding, summer-hoeing, Potato-planting, &c. The latter half of this little volume is occupied with descriptions of the various implements and machines used on the farm. The book is unpretending, but full of useful detail. It is published at a low price by Messrs. George Bell & Sons.

SCOTLAND.

THE following is a list of contributors of specimens of Conifers to the Royal Horticultural Society's Conference at Chiswick, October 7 and 8:—

Her Majesty The Queen, Balmoral; Duke of Argyll, Inverary; Duke of Buccleuch, Drumlanrig; Duke of Richmond, Gordon Castle; Marquis of Northampton, Torloisk, Mull; Earl of Mansfield, Seone; Earl of Stair, Castle Kennedy; Earl of Moray, Darnaway; Duke of Sutherland, Dunrobin; Earl of Cromarty, Castle Leod; Countess of Seafield, Cullen; Earl of Aberdeen, Haddo; Lord Kinnaird, Rossie Priory; Earl of Hopetoun, Hopetoun; Sir Jas. H. Gibson Craig, Bart., Riccarton; Sir Pat. K. Murray, Bart., Ochbertyre; Sir Robert Menzies, Bart., Castle Menzies; Sir J. Colquhoun, Bart., Rosdhu; Sir S. M. Lockhart, Bart., Lee Castle; Sir A. G. Cumming, Bart., Altyre; W. H. Maxwell, of Munches; Stuart Fotheringham, of Murtbly; J. Merry, of Belladrum; Mrs. Malcolm Patton, The Cairnies; Hon. H. H. Duncan, of Fordell; J. Malcolm, of Pottalloch; A. Stirling, of Keir; J. Ord Mackenzie, of Dolphintoo; William Gunn, Nutwood, Strathpeffer; T. Graham Young, Durris.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

THE following are the awards made to non-competing exhibitors at the recent International Show in the northern metropolis, which we were unable to publish with the first list, in our issue for September 26:—Silver Medals to Messrs. Dickson & Co., Edinburgh, for a table of miscellaneous plants; The Saralgo Packing Company, California, for an exhibit of sun-dried Californian Prunes; Mr. Curror, Eskbank, for a plant of *Oncidium incurvum*—awarded for good culture; Mr. A. McGregor, for *Saccolabium Blumei majus*—awarded for good culture.

TREES AND SHRUBS.

ACTINIDIA KOLOMICTA.

ONE of the last letters written to us by our greatly-lamented friend, Jean Van Volxem, was a note referring to the appearance of this species in his grounds at Vilvorde. The leaves he spoke of as gorgeous with their lilac spots, such as he had also seen three years previously in the arboretum of M. Lavallée at Segrez. In sunny places it—a hardy tree or shrub—will become a substitute for Bougainvillea. The species is not mentioned in Franchet and Savatier's *Enumeratio*, but is so, according to Van Volxem, in the Japanese *Hondzo zou fou*.

EXOCHORDA ALBERTI.

We are indebted to Mr. George Paul for a specimen of this Rosaceous shrub, which is evidently very nearly allied to *E. grandiflora*, a Chinese species, introduced by Fortune, and well figured in Lavallée's *Arboretum Segregianum*, t. xii.; see *Gardeners' Chronicle*, 1858, p. 925. It differs in its shorter calyx-lobes, and by the stamens, which are said to be twenty-five in number, arranged in five bundles, instead of fifteen in five bundles of three each; in other words, the stamens are originally five in number, but each one divides into five, or three, according to the species.

E. Alberti was discovered in Turkestan by Albert Regel, and was described by his father in 1884, in the *Acta Horti Petropolitani*, viii., p. 696 (1884). A figure may be found at tab. xiii. of the ninth fascicle of the *Descr. Pl. Nov.* It is quite hardy, but as a garden shrub hardly different from *E. grandiflora*. The leaves are thin, membranous, glabrous, obovate, entire, apiculate, tapering at the base into a slender stalk about a quarter the length of the blade. Vernation conduplicate. Stipules none. Flowers in long loose racemes, each flower 3 cent. across, with a green funnel-shaped thick tube, surmounted by five oblong, obtuse, white fimbriate sepals. Petals five white, twice the length of the sepals, spreading suborbicular concave. Stamens fifteen, half the length of the petals, perigynous, inflexed. Anthers white. Carpels five at the bottom of the tube, each with two or one on the pendulous ovule. In this specimen, then the stamens were fifteen in number only.

THUIOPSIS DOLABRATA.

This is one of the most desirable evergreen shrubs, owing to its distinctness and hardiness. Moreover,

and it is one upon which he has been at work during the past three winters.

Mr. Goldring tells us, "The hill you see, and the water, are quite of artificial formation, as the country about Makurpara is entirely flat, except the undulations of the nullahs or water-courses. Under the hill is a rocky grotto, with miniature waterfalls, Ferns, Palms, &c., growing in a natural way, and this place is cool even on the hottest days. The artificial rocks are made to resemble red sandstone, a tone that harmonises well with greenery. Rocks are constructed in groups round the lake, in order to show off to the best advantage the many beautiful climbing plants, which are one of the chief features in Baroda gardens. The bridge is partially festooned with the lovely *Ipomoea vitifolia*, with Vine-like leaves, bronze-purple when young, and pure canary-yellow flowers the size of those of *I. Horsfallii*; it is a plant I hope to see soon in English greenhouses, for though an old plant in herbaria, it does not appear to have been introduced. The bushes in the foreground are of *Ipomoea carnea*, a South American species, I believe, but which has become naturalised

tourists and others who visit Baroda during the winter, when the park looks at its best.

HOME CORRESPONDENCE.

THE WHITE-FLOWERED CENTAUREA NIGRA.—(On August 29) there was a statement in these pages that this plant had been found growing in a field near Stroud, and no one else is reported to have met with it. I may mention that the plant is to be met with in the neighbourhood of Bervie, on the Kincardineshire coast, and I saw it last year for the first time in a collection of wild flowers at the flower show at that place, and on remarking to the Rev. Mr. Brown, parish minister of Bervie, that I had never met with it before, he assured me that it was not uncommon in that neighbourhood, nor were white-flowered plants of *Campanula rotundifolia*. The white *Campanula* I have often found wild, but have not yet found time to explore the Bervie district. I observed from the railway carriage window the *Lithospermum maritimum* growing profusely on the sea beach there (why, Mr. Editor, has such an appropriate name been dropped, for first *Steenhamera*, and now for *Mertensia*?). White-

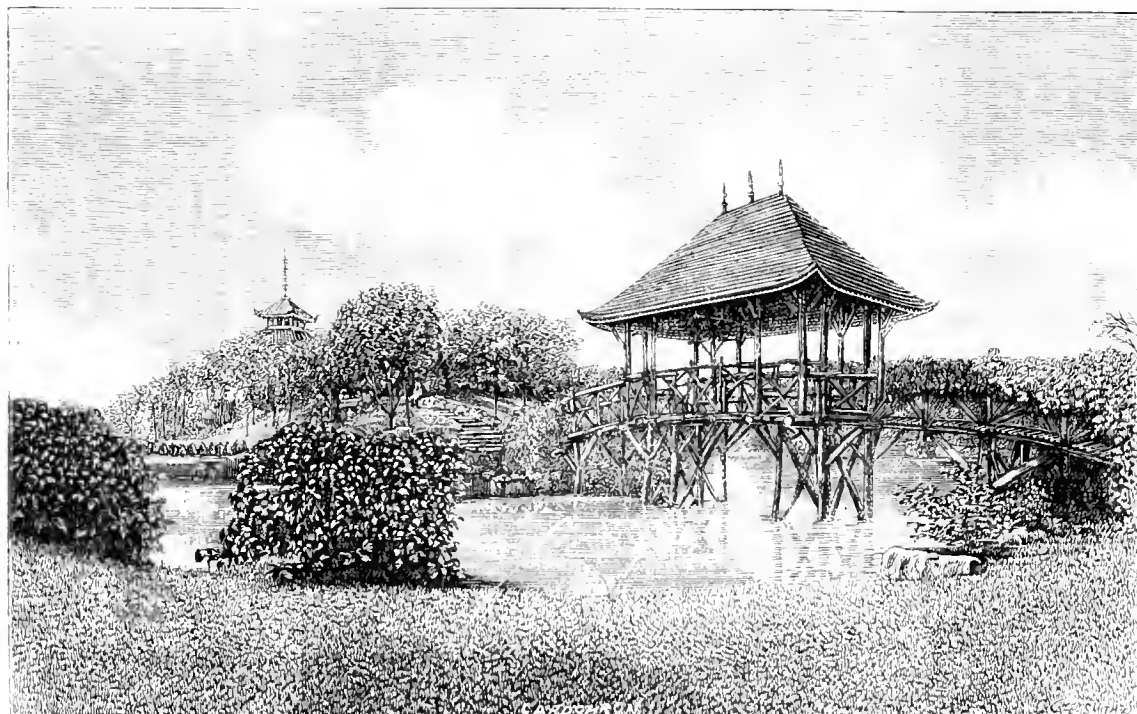


FIG. 49.—SCENE IN AN INDIAN GARDEN.

it will thrive in or near towns better than most Conifers. Mr. Woodgate, of the Gardens, Perryfield, Oxted, obligingly sends us a photograph, executed by Miss McNiven, of a specimen of regularly pyramidal habit, 20 feet 6 inches in height, and 41 feet in circumference at the base.

AN INDIAN GARDEN.

Our engraving (fig. 49), shows a view in a garden of one of the great native princes of India—H.H. the Gaekwar of Baroda. Were it not for the pagoda-like structure in the distance, and the canopied bridge, one might fancy the view to be taken from an English garden, but the absence of the characteristic luxuriant growth of a tropical garden, the Palms, Cycads, Bamboos, and other noble foliage plants is due to the fact that the garden is only of quite recent formation, it being one of the gardens that the Gaekwar engaged Mr. Goldring of Kew, to lay out,

about Baroda, where you may see it in hedges. It is a shrubby plant, with cordate leaves, and large rose-pink flowers, and only climbs when it has the support of a tree or bush. Without these plants, Indian gardens would lose half their beauty. *Bougainvillea*, *Thunbergia*, *Ipomoea*, *Antigonon*, *Quisqualis*, *Jasminum*, and *Bignonia* are among the finest genera of flowering climbers, while throughout the winter and in the hot season these are rivalled in brilliancy by the many gorgeous flowering trees and shrubs. The dryness of the region is not favourable for the luxuriant growth of such fine foliage plants as one sees in Bombay gardens, but with an ample supply of water one can grow almost any tropical plant."

Besides photographs of the new gardens that are now being made, we have seen some of the public park at Baroda, which is considered to be one of the finest in India, and which under the superintendence of Mr. J. M. Henry (an old Kew man, but now many years a resident in various parts of India), the park has advanced to its present high state of keeping and beauty. It is much admired by the English

flowered plants of the *Campanula glomerata* are common among the blue on the cliffs by the sea at St. Cyrus; indeed the Montrose neighbourhood is very rich in native plants, and in a Pine wood a few miles north are found *Linnaea borealis* and *Goodyera repens* growing very plentifully. *J. Marshall*, *Montrose*, *N.B.*

CAMPANULA PYRAMIDALIS ALBA.—At Chelworth, a village about 14 miles from Ipswich, these plants are often met with in cottage gardens and windows. Some of these pot plants stand in 7-inch pots, and are from 5 to 6 feet in height, with from ten to fifteen spikes of fine white blossoms. Those plants which are growing in 6-inch pots have two and three flower-spikes. This variety of *C. pyramidalis* was introduced to the notice of the villagers a few years since, and has become popular there. Its increase is slow, if side-shoots only are taken, as is the case at Chelworth; but in my earlier days we used to propagate the plants by means of cuttings from the stouter roots, which were placed round the side of a potful of sandy soil. The flower-spikes remain in bloom for fully two months and keep a long time fresh in water. *D.*

NEW PLANTS—The few lines under this heading in this week's issue, by one of our eminent authorities, indicate what beautiful species there are on the "dark continent," only awaiting the collectors' hands, to grace our gardens and houses. The yellow-flowered *Pancratium maritimum*, however, has been heard of before, and, as known, only limited means prevented it ere this from becoming an occupant of our houses. It is satisfactory, however, to learn that at last it is really a sojourner in our land; and lovers of this beautiful family will await with interest Mr. Gumbleton's opinion when he beholds it in bloom. With reference to the white-flowered *Kniphofia*, it would be interesting to learn what relation it bears to that white-flowered variety which grows upon one of the islands near the African coast, and which, however, is not "tall and vigorous growing," as is the variety he mentions. There are many other lovely flowers, natives of this wonderful country, that should be better known to English growers. To many amateurs the mere name of "Africa" conveys visions of tropical heat, as being alone suitable, in which to successfully cultivate any species brought from that continent. To certain classes of plant-life this definition must be applied; but there are, besides, positively hundreds of species, comparatively unknown in these isles, that might be successfully grown by any one possessing a greenhouse; in many instances, a frame will suffice. To illustrate my meaning, see how easily the popular *Vallota* may be cultivated. Again, take the *Ixia*, and, later still, the *Freesia*, now grown everywhere, all of which grow wild in South Africa. Some years ago, the writer had a valuable collection of bulbous plants under his care, a special feature of which were "Cape, and other African species." Owing to facilities afforded, many kinds were collected that are seldom seen in one collection, Disas in colours scarcely dreamt of in this country; and as for *Lachenalias*, the varieties might be counted by the score. In this country the sorts generally known may easily be numbered upon one's fingers; but to my fancy the gem of this family was one sent under the name of *L. orchinoides* (species), a pure white fimbriated form that defies description. What became of it I know not; but whenever I have happened to come across a good *Lachenalia* collection, I have searched in vain for this treasure. I am afraid I have, however, trespassed too much already upon your space to go deeper into the subject as my inclination would lead; but to all amateurs who delight in uncommon greenhouse bulbous flowers, I would strongly advise them to expend an item in some of the "Cape bulbous flowers," such as *Hæmanthus*, *Moræas*, *Rocheas*, *Cypella*, and *Watsonias*, not forgetting just a few bulbs of that charming Cape *Gladiolus*, the variety known as *tristis* (so befitting its name), taking care to secure the true variety. *Pioneer*.

INSECTIVOROUS PLANTS.—As these plants are occupying a conspicuous place in your paper just now, may I draw your readers' attention to the fact that the *Paulownia imperialis* may be classed among them. Last spring I had the opportunity of watching them under glass, and noticed they fed on small Diptera, chiefly consuming the contents of the thorax. I think all plants having glandular trichomes [pairs] would be worth observing in this respect. *B. Piffard*.

DWARF TROPÆOLUM MRS. CLIBRAN.—This variety of *Tropæolum* is an excellent bedder, never exceeding 6 inches, and a profuse bloomer. The flowers are of medium size, and of a rich orange-yellow colour, and the substance so good as to make it calculated to stand wet weather without injury. *W. D.*

HYDRANGEA PANICULATA.—With reference to the question put by "E. W." in the issue of the *Gardeners' Chronicle* of September 5, "Is *Hydrangea paniculata* a hardy plant?" I would like to state my experience. In the summer of 1890, I had a number of plants of this *Hydrangea* which flowered well, but unfortunately got infested with red-spider. In the month of August the blooms were all cut, and the plants—which were in pots—turned out-of-doors, where they stood in an odd corner till the beginning of winter. They were then turned out of the pots, and thrown carelessly into a heap, where they lay till the following spring exposed to all weathers. Everyone knows what a severe winter that of 1890-91 proved to be. Throughout the most part of which the earth attached to the roots of these *Hydrangeas* was frozen hard. In the spring I cut them hard back, freeing the roots from the old soil, and repotted them, placing the pots on the floor of a cool

house facing east, with the result that they soon broke, flowering fairly well during June and July; and not a single plant died. This rather rough experiment convinced me that *Hydrangea paniculata* is one of the hardiest shrubs we now possess. *J. Lowrie*. [It was killed with us in the open border. *Ed.*]

THE WHITE PASSION-FLOWER, CONSTANCE ELLIOT, AND THE VARIEGATED ENGLISH ELM.—Is it quite certain that this charming white-flowered Passion-flower is merely a white variety of the blue *cœrulea*. If so, it is rather singular that it should have proved decidedly more tender with me as well as other correspondents. That the variegated Elm with such a large percentage of white in its leaves should prove less vigorous than the green is only what may be expected. But whether its naturally slow growth and weaker habit arise from any want of hardiness, seems rather doubtful. I wish emphatically to add my testimony to that of other correspondents, as to its extreme grace and beauty, especially in hot dry seasons. *D. T. F.*

BREAKING UP PAN.—I doubt its being of so much use as is supposed, to break up "pan." No tree will go through it except the Oak, but when broken up, unless it is put on the surface, and the fibre, Fern, or heather root from the surface, broken up small, and put down below, it makes no difference, for the pan soon re-settles itself, and "forms" again. No Conifers will grow large when there is yellow pan containing iron, unless they are given space; with space they run on the surface and do very well indeed, except perhaps the two *Sequoias*. But common Spruce is poisoned by the iron. Scotch is not. *Ch. v. D.*

PROLIFICATION OF CARNATIONS.—The enclosed Carnations illustrate a form of proliferation that I have not previously noticed. Is it rare? First of all appeared a good, full, and well-formed flower. After due time the petals were shed. Then I observed what seemed to me a fine fat pod of seed. This I marked and left to mature. Shortly this apparent pod burst, and now another set of petals is manifest. This freak is confined to shoots on one side of the plant only. *G. P.* [Not uncommon, but the second flower is usually raised above the other on a short stalk. *Ed.*]

POISONOUS LEAVES.—On p. 310 of the *Gardeners' Chronicle*, a correspondent reports a serious case of eczema or erysipelas caused by handling a plant of Poison Ivy (*Rhus toxicodendron*). It is a curious fact that many persons can handle these plants with impunity, and are hard to persuade about their effects on others. I have frequently seen the leaves of *Rhus venenata*, an equally poisonous species, exposed for sale in autumn in Covent Garden Market, and very brilliant they are. I was recently informed of a case of poisoning caused by using for ornament the plumes of *Rhus Cotinus*, though, perhaps, my informant was mistaken in the species. Similar effects are still often produced by handling *Primula obconica*, though attention has more than once been called to the danger of it. A lady recently told me that this plant last year cost her more than £50 in doctors, of whom she consulted two or three about her case; but none of them suspected the true cause until she found it out herself by accident. *C. W. Dod, Edge Hall, Malpas.*

THE DOUGLAS FIR.—Is it known that the young shoots of the Pacific slope variety (fast-growing), Douglas, when bruised, give the same smell as the English Sweet Rush. The Colorado, or slow-growing variety, now favoured by English nurserymen as a finer tree, has not this scent, but one which is nearly the same as that of the common Spruce. *Ch. v. D.*

SAVING AND SOWING CONIFER SEED.—Last year, in September, I saved a nice lot of seed from Thuja Lobbii and Cupressus Lawsoniana. It was carefully rubbed out of the husks, and dried in a cool shed. About the middle of October, it was sown, in ordinary cutting boxes, in sandy soil, lightly covering the seed. The boxes were placed in a cold frame for a month, when they were afterwards stood in a vinery, which was kept cool all the winter. The soil was kept moist, and no more. By the middle of June, the seedlings were ready for transplanting, which was done on a border in the kitchen garden, to which, as it was heavy, some sand and rotted leaves were added as a dressing, just to give the plants a start. I put out 500 of the former at the time named this year, which are now nice

little plants, pushing off into a leader; and, by the time they have had another season's growth, they will be useful for either winter decoration of the flower-beds, or for planting in the shrubbery or elsewhere. The Cupressus seedlings, being weaker, I had put into boxes for the first year's growth; and next April they will go into the border along with the Thuja. Of these we raised a thousand, with scarcely any trouble. If the soil were better suited for small seedling Conifers, they would grow much faster; but the natural soil is heavy and retentive, which is all against quick root action, and, without this, it is useless to expect a quick top growth from seedlings, of even such a quick-growing tree as Thuja Lobbii. It is interesting to watch these seedlings grow into trees 10 and 20 feet high, with so small an amount of time and labour expended on them. *E. M.*

IPOMCEA LEARII.—This magnificent stove evergreen twiner can be seen in the finest character in the large tropical house at Bower Ashton, Bristol, the seat of Sir Greville Smythe, Bart. Planted out, it has run up in the roof, and, sending forth its shoots in several directions, blossoms freely, the large blue flowers, with bars of rosy pink radiating from the centre to the circumference, being very conspicuous. Here one sees Mr. Lear's beautiful *Ipomœa* perfectly at home, and its peculiarly striking hue of blue, together with the massiveness of the blossoms, must be seen to be appreciated. The flowers are short-lived, and the colour quickly changes to a pale rose tint; but then they are rapidly produced, and the mass of rich bright blue overpowers any obtrusion of the fading rose colour. This species will also do well, it is said, in a cool greenhouse; but it would be requisite to have the roots kept warm. It is recorded that when Mr. Knight had the Chelsea Nurseries, I. Learii was a great feature there, and a specimen had more than five hundred expanded flowers at one time. Is this superb floral beauty in danger of becoming a neglected plant? *R. D.*

THE TUBEROUS-ROOTED BEGONIAS IN BEDS.—When walking through the flower garden at Bower Ashton, Bristol, on the morning of August 26, after a very wild and stormy night, when the wind raged furiously, and heavy rain fell in torrents, and the colours appeared to be clean washed out of Pelargoniums, Calceolarias, Verbenas, Phlox Drummondii, and other leading bedding plants; the beds of Begonias were fresh, bright, and most effective under the morning sun, which, unhappily, though absolutely necessary, only continued to shine for a brief period. A few of the larger blossoms were a little damaged through beating against each other, but the most erect were clean and unharmed, as if they had passed through a still and not a stormy night. The plants were seedlings, but it is Mr. Bethell's intention to select the best bedding types, plants of compact sturdy habit, with medium-sized flowers freely produced upon stout erect foot stalks, the flowers looking upwards to the sky above them, and not hanging their heads and hiding their faces as if ashamed of the sorry floral service they render. Large-flowered varieties of loose habit, with drooping flowers, are of little value in beds. A mixture of crimson, scarlet, rose, pink, orange, salmon, buff, blush, and white shades mingle well together, when the habit is similar, and mixed beds are decidedly more effective than those of one colour, or shades of the same colour. *R. D.*

PEA "THE STANLEY."—Having been induced by the description to try this new Pea, recently introduced from America, I procured a packet, planted same alongside a number of other dwarf wrinkled and well-known sorts, about the third week in March, and obtained a result which far exceeded my expectation. The crop was ready for pulling four days after William Hurst, and produced an abundant crop of large pods well filled with Peas of first-class quality. To view the robust and bushy habit of this Pea in full pod was really a grand sight, and in my humble opinion this is destined to become a popular kind amongst dwarf Peas; one very remarkable feature in this variety was the uniformity in the size of pods, there being no small or undersized pods in my crop. This Pea, unlike many of the so-called new kinds, with elaborate descriptions, certainly fulfils in every particular the character given by the raiser. *T. N.*

DANIEL'S CONTINUITY CABBAGE LETTUCE (p. 285).—It may be interesting to your readers to know it does equally well on light as on heavy soil.

I had it here this year for a trial, and am very well pleased with it. I sowed it on April 7 with several other kinds of Cabbage Lettuce. It was planted out the first week in May. I commenced cutting from it on May 20, and it lasted good until the second week in September. All the other Lettuce bolted in July. It is the best Lettuce I have ever grown, both for its good flavour and long keeping. *H. Turner, Fineshade Abbey Gardens, Stamford.*

DIANTHUS NAPOLEON III.—Of all the Dianthus this is, perhaps, one of the most floriferous and showy, its free-blooming habit often causing the death of the plant. The plant seems to be all stems, for it makes but little growth below till late in the season, and is therefore rather slow to increase. The flowers are borne in close heads on stems about 9 inches high, and are of a rich crimson shade. For border and pot culture this Dianthus is very valuable, and no garden should be without it. *J. S.*

POTTS' SEEDLING AND LORD GROSVENOR APPLES.—I have fruited both of these varieties this year for the first time, and find them excellent as early fruits. Lord Grosvenor has not made many shoots, but plenty of fruit spurs; and on some of the trees there were as many as fourteen very fine Apples, one of which when measured was 4 inches wide and 3½ inches high—not a bad fruit for the first year's bearing. *E. Molyneux.*

TOMATOS IN THE OPEN GROUND.—I am well aware that this is no uncommon sight around London and in the warmer parts of the country, but I question if any have been grown in this way so far north of London, and as good as some I saw at Burghley last week. Mr. Gilbert planted them on a south border between rows of Peas early in June, about 2 feet apart in the rows, and trained them on single stems to 4 feet perpendicular stakes; this was done as an experiment, and it has proved a great success, a large quantity of fruit having ripened on them, and more will follow, if we get no frost. Most of them are full grown, and if bad weather should come, and they do not ripen outside, they will soon colour when put on the vinery shelves, and fetch quite as much money in the market, although they may not be so good in flavour as those ripened on the plants. The varieties planted were Laxton's Open Air, Vick's Criterion, and Wynn's Conqueror. This latter variety appears to be identical with the Old Red—it had fruited the best of all; one row left in full fruit bore a heavy crop. A wario soil and position, assisted by the shelter afforded by some rows of Peas, have done much for these Tomatos, but sowing early, and growing the plants to a large size before planting them out, has also contributed largely to Mr. Gilbert's success. *W. H. D.*

LORD GROSVENOR APPLE.—In answer to an enquiry which appeared in the *Gardeners' Chronicle* recently concerning the above variety, I am glad to inform your correspondent that the Lord Grosvenor Apple does well in this garden. I had a strong tree of Blenheim Orange Pippin which never bore fruit since it was planted, the tree being ten years old, so I grafted it with scions of Lord Grosvenor and Newton Wonder, one being an early and the other a late fruit. It has this year a splendid lot of fruit of both varieties. All my trees of Lord Grosvenor are bearing well, and free from canker. I think all who saw my fruit at the Derby show lately, said they were the finest that they had seen this year. My experience is that Lord Grosvenor will flourish where Lord Suffield will not. Four of the heaviest cropping Apples with me this year, are Lord Grosvenor, Domino, Newton Wonder, and Anna Elizabeth. *W. Taylor, King's Newton, Derby.*

A NEW BEDDING TROPÆOLUM, MRS CLIBRAN.—I have seen examples of this, which have been raised and will be sent out by Messrs. W. Clibran & Son, Manchester, next season. It is of a bright golden yellow colour, a profuse flowerer, and the habit of the plant compact and good, its height averaging from 4 to 6 inches. *B.*

THE VICE-REGAL LODGE GARDENS, DUBLIN.—These extensive and well-managed gardens are at all times worthy of a visit from horticulturalists on pleasure bent, as well as those in search of horticultural information. They are, as they have been for the last thirty-six years, under the able management of Mr. G. Smith (an old Sconeite), who is a very courteous and hospitable gentleman. My recent visit (August 24) was a brief and hurried one, so no note-book was introduced, and I now simply jot down a few mental notes, so that I may

place on record the heavy crops of Grapes and Peaches which were observed in the main range of fruit-houses, which is 600 or 700 feet in length. The varieties of Grapes were Mrs. Pince, Lady Downes', Muscat of Alexandria, Gros Colmar, and Black Alicante, the last-named variety being exceptionally good on young Vines in one or two compartments devoted to the culture of this favourite Grape. Some young trees of the Princess of Wales Peach were carrying heavy crops of extra-large fruits; the crops had been taken from the Vines and trees in several houses, the season beginning in May. The trees and Vines were in fine condition, notwithstanding the heavy crops. Several houses, including a large ridge-and-furrow house, with its several beds, were devoted to the growth of Melons, whose crops were very promising. One large span-house was filled with Palms, large plants being set along the middle, with smaller ones on either side, as well as on the side stages—capital decorative subjects, and for which there is great demand at the Vice-regal Lodge during the season. Other houses were well stocked with Orchids and many choice plants. In the kitchen garden, in which the principal ranges of glass are situate, large breadths of vegetables of various kinds bore evidence of good and careful culture. The same may be said of the standard and wall fruit trees, which were bearing excellent crops of fruit. The grounds surrounding the Lord-Lieutenant's charming residence are extensive as well as beautiful, and the kind of keeping of these, and the gardens in general, testifies that they are presided over by an able and energetic practitioner. *Tourist.*

HYACINTHUS CANDICANS.—More than a thousand plants are grown here, and I have left them in the ground during the last two winters, protected from frost by a top-dressing of short litter, our losses being this spring not more than 6 per cent. I have tried the plan of storing the newly-imported bulbs in sand during winter, and planting them in March, with very fair results, planting also in the autumn when the bulbs are received. Of the two I prefer the latter season. Not having had any unprotected last winter, I am unable to give Mr. Earley any information on the point desired, *i.e.*, that of hardiness; but in previous years, when unprotected, the results have not been favourable. For the centre of large beds and in borders, intermixed or surrounded with plants of *Salvia patens*, the effect is pleasing to the eye. *F. Clarke, Louth Castle Gardens.*

HYDRANGEA PANICULATA, treated as a shrub, not as a herbaceous plant, is perfectly hardy now in Mid-Lothian, and has stood unprotected in the open ground for the last four years, being at the present time in fine flower. *Hon. Mrs. Hope.*

THE BRANCHING ETOILE D'OR MARGUERITE.—Having planted out a number of the above plants, we have found them very useful for display and furnishing cut blooms. The large pale yellow single flowers are greatly admired for table decoration. It is a strong grower, and is quite different from the old Etoile d'Or. *W. J. Gilks, Glenthorne, Harrow Weald.*

SOCIETIES.

ROYAL HORTICULTURAL.

FLORAL COMMITTEE AWARDS, *Tuesday, September 22.*

First-class Certificates.

To *Elaeagnus pungens* var. *maculata*, from Messrs. J. Veitch & Sons.

To *Rhododendron Ceres*, from Messrs. J. Veitch & Sons.

Awards of Merit.

To *Dahlia Nellie Mchray*, from Mr. T. S. Ware.

To *Dahlia Mrs. Walter Besant*, from Mr. T. S. Ware.

To *Dahlia Mrs. Ocock*, from Mr. A. Rawlings.

To *Chrysanthemum Viscount Cluquo*, from Mr. R. Owen.

To *Dahlia Sultana*, from Mr. C. Turner.

To *Dahlia Rayon d'Or*, from Mr. C. Turner.

To *Dahlia Mars*, from Mr. C. Turner.

To *Dahlia Lorna Doone*, from Mr. C. Turner.

To *Dahlia Cecil*, from Mr. C. Turner.

To *Dahlia Touchstone*, from Mr. C. Turner.

To *Dahlia Ada Rahan*, from Mr. C. Turner.

To *Dahlia Sir Roger*, from Messrs. H. Cannell & Sons.

To *Dahlia Ernest Cannell*, from Messrs. H. Cannell & Sons.

To *Dahlia Mrs. Thornton*, from Messrs. H. Cannell & Sons.

To *Dahlia Draughtsman*, from Mr. G. S. P. Harris.

To *Dahlia Little Sarah*, from Mr. G. Humphries.

To *Dahlia Mrs. Humphries*, from Mr. G. Humphries.

Botanical Certificate.

To *Cupressus alba*, from Messrs. Pitcher & Manda.

Cultural Commendation.

To *Nerine flexuosa*, from W. Marshall, Esq.

MEDALS.

Silver-Gilt Flora.

To Mr. G. Phippen, for group of *Dahlia* and *Lilies*.

Silver Flora.

To Messrs. J. Cheal & Sons, for collection of *Dahlia*.

Silver Banksian.

To Mr. T. S. Ware, for collection of *Dahlia*.

To Mr. A. Rawlings, for collection of *Dahlia*.

Bronze Banksian.

To Mr. J. T. West, for collection of *Dahlia*.

To Messrs. W. Paul, for collection of *Roses*.

To Mr. J. Walker, for collection of *Asters*.

ORCHID COMMITTEE AWARDS.

Silver Banksian Medal.

To Messrs. F. Sander & Co., for group of *Orchid*.

First-class Certificates.

To Thos. Statter, Esq., for *Cattleya intermedia alba*.

To Baron Schroder, for *Cypripedium Antigonum*.

FRUIT COMMITTEE.

Silver Medal.

To Mr. W. Paul, Waltham Cross, for collection of *Apples* and *Pears*.

FUNGUS FORAY OF THE YORKSHIRE NATURALISTS' UNION.

ON Wednesday and Thursday, September 16 and 17, those members of the Union interested in fungi met at Doncaster, to explore the neighbourhood. The attendance was excellent, testifying to the increased interest taken in the study of those aberrant members of plant-life, fascinating not only on account of the great variety of form and colour presented, but more especially on account of the great insight afforded by many kinds bearing on such problems as the origin of parasitism, evolution of sex, power of adaptation to varied conditions, relation between fungi and numerous diseases of higher types of life, &c.—problems which now claim part of the time devoted solely in the past to an honest endeavour to find out the name previously given to a particular fungus, an investigation that too frequently resulted only in individual conviction; nevertheless, the ideal was always realised—an addition to the county list. When the questionable ambition of racing for the first place, as to number of species between county clubs has had its day, it is to be hoped that the energy at present so expended may be utilised for a higher purpose. Lists to be of value should contain a paragraph at the commencement to the effect that the material on which the list is founded can be examined at ——. Species of *Agaricus* were scarce, many sections being entirely absent. *Lactarius*, *Hygrophorus*, and *Russula*, were best represented, amongst the least common being *Lactarius volemus*, *L. uvidus*, *Russula aurata*, *Hygrophorus chrysodon*, *Paxillus crassus*. *Merulius aureus* was found in fine condition, this is probably its first British record. In future there is to be an annual foray in Yorkshire.

FUNGUS FORAY OF THE STIRLING NATURAL HISTORY AND ARCHÆOLOGICAL.

SEPTEMBER 26.—It fell to the lot of the writer to represent, as well as he could, the Cryptogamic Society of Scotland at the meeting of the Stirling Naturalists' Society; so, accompanied by Mr. H. G. Ward, we arranged to go. The Glasgow mycologists kindly arranged for an excursion, on Friday, September 25, so that Cadder Wilderness might be taken *en route*, and thus no time would be lost. Now, Cadder Wilderness has obtained a considerable celebrity amongst British mycological stations, as it has, in bygone days, been the accredited home of not one but all the rare species at that time known to occur in the British fungus flora. So, in high spirits, we started, under the guidance of the leading mycologist in the second city of the empire, for this Tom Tiddler's ground. No sooner was the railway carriage entered, than discussions on various mycological problems began—where this species grew, where that flourished best, the colour of this one's spores, and of that one's stem; but, above all, what varieties we should find. Alas, for human hopes! Somebody had blundered about the train, and instead of treading the majestic glades of Cadder, we found ourselves, after an hour's travelling, back again in Glasgow, with no more trains to Cadder till 6 o'clock in the evening. It was pitiful to see our dejected countenances, but we bore our trials like mycologists. This *contre coup* enabled the writer to proceed to Stirling at once. On enquiry, it was found that the Stirling Society was likely to master on the morrow to the extent of some fifty members, so that our work seemed to be

cut out for us. It was also learned that, meteorologically, Stirling was a particularly favoured spot, being so sheltered by the hills that extremes of weather were almost unknown, and that storms either of rain, snow, or wind practically did not occur. This was grand news, for the weather during the previous week had been anything but good in Scotland. Somehow or other the barometer at our hotel went altogether wrong in the night; the steel hand had receded in a most unsatisfactory manner. When we consulted it on the morning of the excursion, we endeavoured to comfort ourselves with the dictum that "no reliance can be placed on those old-fashioned wheel-barometers." A start was made at 10 A.M., after visiting the Manse of St. Ninian's, and a small wood, Cocksett Plantation, which overlooked the battle-field of Bannockburn. It yielded some twenty-five species in about as many minutes. The fine Fir woods of Polmaise Castle were next visited, and we explored them to our heart's content. Here, the rain began to fall, and the wind increased to a strong gale. In spite of this, however, many interesting species were encountered, including *Agaricus flammans*, *euthelus*, *sipiens*, *ambustus*, *crebrius*, *dispersus*, *hygrophorus*, *hypothecus*, *Polyporus amorphus*, and *Thelephora caryophylla*. Climbing to the top of the hill, which overlooked a valley to the west, we witnessed an interesting phenomenon. The western face of this hill was steep and precipitous. The wind was blowing from the west so heavily that we could with difficulty hold our feet against it, but at the edge of the precipice we were in a narrow zone of calm air. The explanation is simple, the wind blowing directly on to the face of the cliff was deflected upwards, if one may say so, the gusts passed over our heads when we stood on the extreme edge of the cliff. At the appointed time we repaired amidst the storm of wind and drenching showers to the appointed rendezvous, and await the arrival of the Stirling naturalists. In due time a solitary figure was made out, fighting its way against the storm; this proved to be the Rev. J. Robertson, the minister of St. Ninian's—the other forty-nine naturalists having thought it wiser to stay at home. We hunted the grand Fir woods in company, until we all became sufficiently moist, and then repaired to Stirling. A pleasant evening was spent in examining our finds; but when we turned our steps southwards, we could but remark, with regard to Glasgow and Stirling, "Ah, they manage these things better in Paisley!" C. D. P.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

SWIETENIA MAHOGANI.—Can any of your readers say if *Swietenia Mahogani* is grown in this country? [at Kew]. I understand it is a very handsome tree, and would be well worth its room in our greenhouses. H. H. G.

MARKETS.

COVENT GARDEN, October 1.

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

BUSINESS brisk, with heavy supplies of Kent Cobs selling freely at higher rates. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, each	0 4-0 6	Lettuces, per doz.	1 0-1 6
Beans, French, lb.	0 3-0 4	Mushrooms, punnet	2 0-...
Beet, red, per dozen	2 0-3 0	Mustard and Cress, punnet	0 4-...
Carrots, per bunch	0 6-...	Parley, per bunch	0 4-0 6
Cauliflowers, each	0 1-0 6	Shallots, per lb.	0 6-...
Celery, per bundle	2 6-3 6	Spinach, per bushel	3 6-...
Cucumbers, each	0 4-0 0	Tomatoes, per lb.	0 6-0 9
Endive, per dozen	2 0-3 0	Turnips, per bunch	0 6-...
Herbs, per bunch	0 4-...		

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Apples, 1/2-sieve	1 0-3 0	Melons	0 6-1 0
Damsons, 1/2-sieve	1 6-...	Peaches, per dozen	1 0-4 0
Grapes	0 8-1 9	Fire-apples, St. Mi.	...
Kent Cobs, 100 lb.	40 0-...	cha-el, eaob	2 0-8 0
Lemons, per case	20 0-35 0	Plums, 1/2-sieve	1 0-2 6

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Asters, French, 12 bunches	9 0-12 0	Maiden Hair Fern, 12 bunches	4 0-9 0
—English, per dozen bunches	2 0-6 0	Marguerites, per doz.	2 0-4 0
Carnations, 12 blms.	4 0-6 0	Mignonette, doz. bun.	1 6-3 0
Carnations, 12 blms.	0 9-1 6	Orchids:—	
Chrysanthemums, 12 blooms	1 0-3 0	Cattleya, 12 blms.	6 0-12 0
—12 bunches	4 0-9 0	Odontoglossum crispum, 12 blms.	3 0-6 0
Cloves, per dozen	0 6-1 0	Pelargoniums, scarlet, per 12 bun.	3 0-4 0
Coriander, 12 bun.	1 6-2 0	—12 spays	0 6-0 9
Dahlia, 12 bun.	2 0-3 0	Pyrethrum, 12 bun.	2 0-3 0
Eucharis, per dozen	2 0-4 0	Roses, Tea, per dozen	1 0-3 0
Gaillardia, 12 bun.	2 0-4 0	—coloured, dozen	2 0-4 0
Gardenia, per dozen	2 0-4 0	—yellow (Mare-chals), per doz.	2 0-6 0
Gladioli, 12 bunches	4 0-12 0	—red, per dozen	1 0-2 0
Heliotrope, 12 sprays	0 3-0 6	—various, doz. bun	2 0-6 0
Lavender, doz. bunch	4 0-5 0	Sweet Peas, 12 bun.	1 6-3 0
Lilium var., 12 bun.	6 0-12 0	Tuberose, 12 blms.	0 3-0 6
„ Harrisii, doz.	3 0-5 0		
Liliums, various, doz.	1 0-3 0		

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Adiantum, per doz.	1 0-12 0	Ferns, small, per 100	8 0-15 0
Aralias, per doz.	6 0-12 0	Ficus, each	1 0-5 0
Aspidistra, per doz.	18 0-63 0	Fuchsias, per dozen	3 0-5 0
Asters, per dozen	3 0-6 0	Geraniums, per doz.	3 0-6 0
Begonias, per doz.	4 0-6 0	Heliotropes, per doz.	3 0-5 0
Caladiums, per doz.	12 0-21 0	Lilium Harrisii, doz.	3 0-12 0
Campaulas, per doz.	8 0-12 0	—lanceifolium, doz.	10-15 0
Chrysanthemums, per dozen	6 0-9 0	Marguerites, per doz.	5 0-10 0
Coleus, per dozen	3 0-6 0	Palms, various, each	2 0-21 0
Cyperus, per dozen	4 0-10 0	—specimens, each	10 6-84 0
Dracaenas, each	1 0 5 0	Solanums, per dozen	9 0 12 0

POTATOS.

With better weather, arrivals have come to hand in a much finer condition, and many parcels, in consequence, have been disposed of at an advance on last week's quotations, the market being very firm for best samples. *J. B. Thomas.*

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fabr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.		
	Above 42° for the week ending September 26.	ACCUMULATED.			16ths Inch.	Ins.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 4, 1891.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.					Below 42° difference from Mean since Jan. 4, 1891.
1 0 aver	55	0	+ 186	+ 79	5	175	35.7	20	28
2 1 —	56	0	— 38	+ 10 20	+	128	20.8	19	31
3 0 aver	78	0	— 88	+ 95	2	126	16.6	20	30
4 2 +	97	0	— 109	+ 128	2	132	17.1	24	33
5 0 aver	81	0	— 102	+ 114	1	129	18.8	23	32
6 1 +	99	0	— 125	+ 149	3	125	19.4	25	36
7 0 aver	87	0	+ 97	+ 45	8	138	27.6	24	33
8 0 aver	78	0	+ 38	+ 35	3	125	23.2	29	30
9 0 aver	90	0	— 92	+ 118	2	132	26.3	31	38
10 0 aver	75	0	+ 61	+ 20	1	155	22.3	42	31
11 0 aver	83	0	+ 15	+ 31	1	139	24.3	49	34
12 1 —	102	0	— 24	+ 40	1	132	21.3	39	17

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 26, is furnished from the Meteorological Office:—

"The weather has been changeable and unsettled in all parts of the Kingdom. Extremely heavy rain was experienced over the east of Scotland during the earlier days of the week, and some heavy falls occurred from time to time in the western and north-

western districts. In most parts of England, however, the falls, although equally frequent, were less heavy.

"The temperature has been slightly below the mean in 'Scotland, E. and the Channel Islands,' just equal to the mean in nearly all other districts, and a little above it in 'England E. and S.' The highest of the maxima were recorded on rather irregular dates, and ranged between 62° and 64° in 'Scotland,' from 65° to 67° in 'Ireland,' and from 65° to 69° over 'England.' The lowest of the minima were registered on the 23rd in the north, and on varying dates elsewhere, they were as low as 30° in 'Scotland, N.,' and 31° in 'Scotland, E. and W.' Elsewhere they varied from 36° in 'England, N.W.,' to 43° in 'England, N.E.'

"The rainfall has been rather less than the mean in 'England, E.,' the 'Midland Counties,' and 'England, S. and S.W.,' as well as in 'Ireland, N.' and the 'Channel Islands.' In all other districts there has been an excess. In 'Scotland, E.' the fall has amounted to about three times the average.

"The bright sunshine has exceeded the mean in 'Ireland,' but has been deficient over 'Great Britain.' The percentage of the possible amount of duration ranged from 49 in 'Ireland, S.,' 42 in 'Ireland, N.,' and 39 in the 'Channel Islands,' to between 23 and 25 over the greater part of 'England,' and the 'west of Scotland,' and to between 19 and 20 over 'Scotland, E. and N.'

NOTICES TO CORRESPONDENTS.

APPLE SCALE: *T. S. W.* Mussel Scale (*Mytilaspis pomorum*).

BOOKS: *E. L. Cassell's Popular Gardening* contains all you want. It is in four volumes, the price moderate.—*S. D.* You really require a library of works on gardening to enable you to grow all those fruits that you named in your letter; but we will merely name two—*The Forcing Garden*, by Samuel Wood (Crosby Lockwood & Co., Stationers' Hall Court, London); and *Handy Book of Fruit Culture Under Glass*, by David Thomson (see previous reply).

CRACKING OF PEARS: *G. W.* Your Pears crack because they are affected with a fungus called *Fusicladium*, which feeds on the rind of the Pear and the tissues beneath it, and kills them whilst the central portions go on growing. The outer portions being no longer elastic, crack. You can do nothing now but carefully destroy all the fruit. Your Plums have probably cracked from the excessive wet to which they have been subjected.

DAHLIAS: *A. F. T.* Curious, but not worth preserving, as there are so many better. Ask some trade grower for the name of the variety. We do not know it.

EEL WORMS IN CUCUMBER ROOTS: *P. F. A.* Certainly; burn both plants and soil, so that next years crop may stand less risk.

FUNGUS ON TUSSILAGO FALFARA: *J. B. W.* The fungus is *Coleosporium souchi*. The uredo and telentospores both occur on same plant. The parasite on *Populus alba* is *Melampsora acidoides*; the acidium stage of this being found on *Mercurialis perennis*, and is called *Croonia mercurialis*.

GRAPES: *G. H.* Some of the berries sent are affected by the dreaded "spot," for which no cure is known. Collect and burn all the berries which show any signs of the malady. The bunch of Muscats sent show that there has been an excess of moisture in the vinery, either from pot plants being placed there, or the border which has been watered unadvisedly. The berries drop at the least touch, or even without being disturbed. Many a crop of Muscats is spoiled when ripe from this cause.

NAMES OF FRUIT: *D. Donald.* Not Vanguard Peach, which is a Noblesse in appearance, and more hardy and robust, but yellow Alberge.—*Homestead.* Plums: 1, Czar; 2 and 3, Victoria; 4, Pershore; 5, common Damson; 6, 7, 8, not recognised.—*M. E. V.* Not recognised. Please send proper specimens.—*J. Taylor.* 1, Williams' Bon Chrétien; 2 and 4, not recognised; 3, Louise Bonne; 5, Marie Louise. Apple not recognised.—*B. B., Exeter.* 1, Marie Louise; 2, Emil d'Heyst; 3, Louise Bonne.—*W. J. S. Pears.* 1, Beurré Superfin; 2, Secku; 3, Louise Bonne. Apples: 5, Royal Russet; 6, Round Winter Nonsuch; 4, too small to recognise.—*R. Ward.* 1, Emperor

Alexander; 2, Duchess of Oldenburgh; 3 and 4, not recognised; 5, Cox's Pomona; 6, Fearn's Pippin.—*T. K. & Co.* Apple: Orange Pippin. Pear: rotten.—*H. T.* 1, Williams' Bon Chrétien; 2, Beurré de Capianmont; 3, Souvenir du Congrès; 4, Tower of Glamis; 5 and 6, miserable specimens—cannot be recognised.—*Ted.* Pear: Williams' Bon Chrétien. Apple: Stirling Castle.—*C. G.* Pears: 6, Vicar of Winkfield; 5, not recognised. Apples: 1, Duchess of Oldenburgh; 2 and 3, poor samples! not recognised; 4, Old Nonpareil.—*J. H.* Plums: Yellow is Magnum Bonum, red is Pond's Seedling. Apples: 1, Brad-dick's Nonpareil; 2, Tibbett's Incomparable; 3, Colon d'Or.—*G. J.* Apples: 1, Ribston Pippin; 2, Margil; 3, New Hawthornden. Pears: 4, Gansel's Bergamot; 5, Beurré Bachelier; 6, Rosemary Russet.—*W. H. Tillet.* Pear: Beurré d'Amanlis. Apple: Kerry Pippin.—*Pomona.* Apples: 1, identical with Ecklinville; 2, Lord Derby; 3, not recognised; 4, Scarlet Nonpareil.

NAMES OF PLANTS: *G. M. A.* Campanula rotundi-folia var. alba.—*J. B. & S.* 1, Salvia Horminum; 2, Mentha rotundifolia. *D. Dewar.*—*W. S. S.* 1, Spiræa sp.; 2, Spiræa sp. (impossible to name without flowers).—*J. R.* Anchusa italica; Cupressus sempervirens. Many thanks for the Passionflower.—*J. W. B.* 1, Lycium barbarum; 2, Saxifraga crassifolia; 3, a seedling form of Biota orientalis; 4, Daphne Mezereum; 5, Berberis Bealei or Fortunei; 6, Phalaris arundinacea varie-gata; 7, Thuiopsis borealis; 8, Cupressus Goveniana.—*G. L.* Bignonia radicans.—*An Old Sub-scriber.* Chrysocoma Linosyris.—*L. & B.* Medica-go lupulina.—*Pomona.* 5, Physalis Alkekengi; Winter Cherry, a hardy European member of the order Solanaceæ. It is not poisonous, and the fruits are eaten at dessert in Spain and other south European countries.—*P. A. Falkirk.* 1, Cas-tanea vulgaris (the Sweet Chestnut); 2, Pyrus Aria (the White Bean).—*G. H.* Lastrea aristata variegata, Croton longifolius var.—*H. R.* 1, Stan-hopea Wardii; 2 and 3, varieties of Stanhopea oculata.—*H. E.* One of the varieties of Gladiolus Colvillei.

PHLOXES, PENTSTEMONS, &c.: *J. Forbes.* Doubtless excellent of their kind; but, the flowers had fallen in almost every case. The crimson bedder Antirrhinum appeared to be a good plant.

SHANKING OF GRAPES: *J. B.* See *Gardeners' Chronicle*, July, 1891, p. 23.

THE GROWING OF FRUIT UNDER GLASS: *S. D.* Take service for several years with two or three growers for market. You should advertise in these columns, stating your wants.

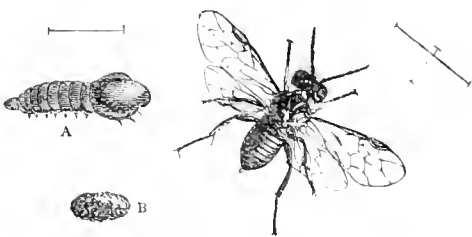


FIG. 50.—SLUGWORM AFFECTING THE PEAR TREE.

THE PEAR SLUG: *A.* Spraying is of little use, as it would have to be applied when the fruit is on the tree. After feeding on the leaves, the caterpillar descends to the soil, there to form a cocoon, from which the perfect insect is produced in fifteen days. The application of quick-lime to the surface is therefore recommended.

COMMUNICATIONS RECEIVED.—*Albert F. Upstone.*—*G. W. Cummins.*—*E. M.*—*F. W. B.*—*G. N.*—*E. H. K.*—*A. W. C.*—*C. B. P.*—*Dr. Kranzin.* Berlin.—*J. P.*—*C. Joly.* Paris (with thanks).—*C. W. D.*—*R. F.*—*Old Subscriber* (next week). *A. V. T.*—*G. W.*—*W. F.*—*H. R.*—*A. Y. E.*—*G. A.* is thanked for his criticism.—*C. de B.*, Antwerp.—*J. B. B.*—*E. Beckett.*—*J. Weathers.*—*W. H. R.*—*A. J. Webster.*—*B. M.*—*J. S. Glamis.*—*A. Donaldson.*—*Expert.*—*J. G. Baker.*—*R. D.*—*E. M.*—*J. D.*—*F. C. L.*—*B. R. Lowe.*—*M. Temple.*—*W. B. H.*—*R. A. R.*—*W. A. C.*—*H. W. W.*—*G. W.*—*T. C.*—*J. B. W.*—*A. D.*—*T. F.*—*Miss F.*—*Ernst Beary.*—*D. & W. Croll.*—*J. McD.*—*F. A.*—*W. W.*—*J. A. F.*

BOOKS RECEIVED—*Handbuch der Laubholz-kunde.* Dr. L. Dippel, Berlin, Paul Parey.

PHOTOGRAPHS RECEIVED (with many thanks).—*J. O'B.*—*T. P.*, Beckenham.



STANDEN'S Established 30 Years. MANURE.

Exceeds all others in general fertilising properties and staying powers.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Ladies interested in Plant Culture.

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Sold in Tins, 6d., 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each.

And in Kegs (free), at Reduced Prices:—28 lb., 10s. 6d.; 56 lb., 18s.; 112 lb., 32s. each.

LETHORION (VAPOUR GONE), (PATENT).



The total destruction of Insect Pests in Greenhouses is thoroughly secured without the slightest possible injury to Flowers or Plants of the tenderest kind. It CANNOT fail where the houses are secure.

PRICES—For Frames, &c., of 50 cubic feet, 6d.; 100 feet, 9d.; 500 feet, 1s.; 1000 feet, 1s. 6d.; 4000 feet, 5s. each.

Owing to the enormous demand, intending users should give their Seedsmen Early Orders to secure a supply.

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THE "LONDON" TOBACCO JUICE. (FREE OF DUTY.)

Manufactured from strong American Leaf Tobacco, and highly concentrated. Sold in bottles:—Pints, 1s.; quarts, 1s. 9d.; half gall., 2s. 6d.; gall., 4s. Or, in casks of 10 gallons, and upwards, at 2s. 6d. per gallon.

EXTRA STRONG TOBACCO JUICE.

Specially manufactured for Evaporating in Greenhouses. Pints, 1s. 6d.; quarts, 2s. 9d.; half-gall., 6s.; gall., 11s. And in kegs of 5 gallons, 10s. 6d. per gall.; 10 gallons, 10s. per gallon.

THE "LONDON" TOBACCO POWDER.

This preparation consists of best Virginian Tobacco, finely ground and mixed with other ingredients of an essential character. Price, in tins, 1s., 2s. 6d., and 4s. Or, in bulk, £3 per cwt.

NICOTINE SOAP.

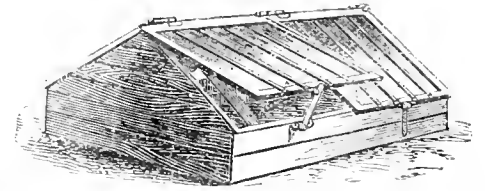
An effectual and speedy Eradicator of Scale, Thrip, Green Fly, Mealy Bug, Red Spider, American Blight, and all Parasites affecting plants, without injury to foliage. In jars, 1s. 6d. and 3s. each, and in tins, 5s. 6d., 15s. 6d., and 25s. each.

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PORTABLE PLANT FRAMES.

These Frames are made of the Best Materials, and can be put together and taken apart in a few minutes by any one.

Sizes and Prices, Glazed and Painted.		£	s.	d.
6 feet long, 3 feet wide	CASH	2	0	0
6 feet " 4 feet "					2	5	0
12 feet " 4 feet "	PRICES,	4	0	0
6 feet " 5 feet "					CARRIAGE	2	15	0
12 feet " 5 feet "	4	15	0	
12 feet " 6 feet "	PAID.	5	12	6

Larger sizes at proportionate prices.

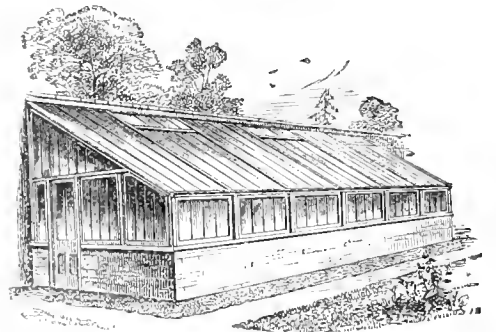
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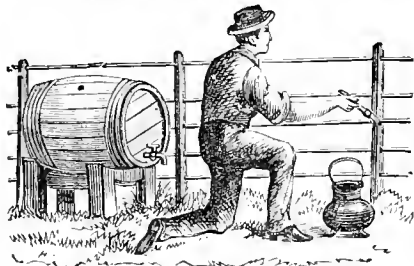
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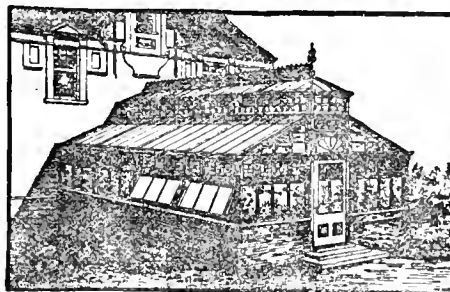
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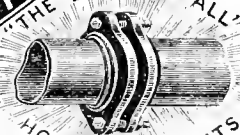
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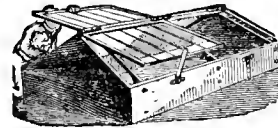
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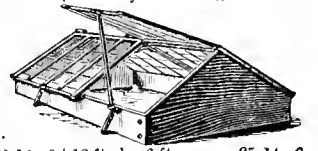
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6 ft. by 3 ft. ... £2 0 0 | 6 ft. by 4 ft. ... £2 5 0

12 ft. by 3 ft. ... £ 3 2 0 | 12 ft. by 4 ft. ... £ 3 15 0

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NEW SPAN-ROOF GARDEN FRAME.



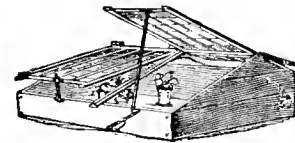
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4 ft. by 6 ft. ... £2 14 0 | 12 ft. by 6 ft. ... £5 14 0

8 ft. by 6 ft. ... £ 4 4 0 | 16 ft. by 6 ft. ... £ 7 4 0

No. 74.

THREE-QUARTER SPAN GARDEN FRAME.



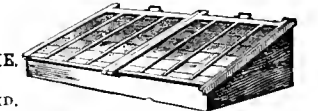
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4 ft. by 6 ft. ... £2 14 0 | 12 ft. by 6 ft. ... £5 17 0

8 ft. by 6 ft. ... £ 4 5 6 | 16 ft. by 6 ft. ... £ 7 8 6

No. 75.

MELON AND CUCUMBER FRAME.



CASH PRICES. CARRIAGE PAID.

4 ft. by 6 ft. ... £2 0 0 | 12 ft. by 6 ft. ... £4 3 0

8 ft. by 6 ft. ... £ 3 0 0 | 16 ft. by 6 ft. ... £ 5 6 0

No. 77—Smaller size Frames, similar to No. 75.

6 ft. by 4 ft. £1 15 0
9 ft. by 4 ft. £ 2 7 6
12 ft. by 4 ft. £ 3 0 0

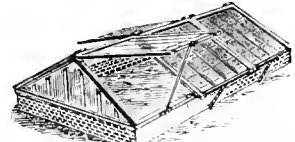
GLAZED LIGHTS 6 feet by 4 feet ... 14s. each.

UNGLAZED LIGHTS " " " " " 5s. 6d. each.

Carriage paid on Orders of 40s. value.

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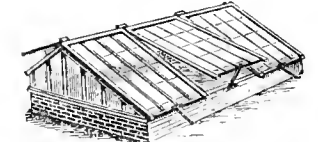
CASH PRICES. CARRIAGE PAID.

12 ft. by 5 ft. ... £5 0 0 | 12 ft. by 6 ft. ... £6 0 0

24 ft. by 5 ft. ... £9 0 0 | 24 ft. by 6 ft. ... £11 0 0

No. 72.

THREE-QUARTER SPAN-ROOF FORCING FRAME.



CASH PRICES. CARRIAGE PAID.

10 ft. by 6 ft. ... £5 0 0 | 10 ft. by 7 ft. ... £8 0 0

20 ft. by 6 ft. ... £8 10 0 | 20 ft. by 7 ft. ... £10 0 0

No. 76.

FORCING PIT WITH SLIDING LIGHTS.



CASH PRICES. CARRIAGE PAID.

12 ft. by 6 ft. ... £3 11 0 | 12 ft. by 7 ft. 6 in. ... £4 4 0

20 ft. by 6 ft. ... £5 13 0 | 20 ft. by 7 ft. 6 in. ... £5 12 0

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Hop Exchange Warehouses, Southwark Street, London, S.E.

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Works: 97, MILTON STREET, GLASGOW.

SOLD BY SEEDSMEN, &c.

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	16 x 14	20 x 18
	18 x 14	22 x 18
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Mr. W. J. COPPIN, for some years second man at High Cross, Framfield, Sussex, as Head Gardener to C. E. LAMBERT, Esq., Eilingham House, Leatherhead.

Mr. L. WILLIAMS, as Gardener to R. O. LEYCESTER, Esq., Toft Hall, Knutsford.

Mr. C. PARROTT, who was formerly second man in Mr. LAMBARD'S garden, Beechmont, Sevenoaks, has taken the Head Gardener's place.

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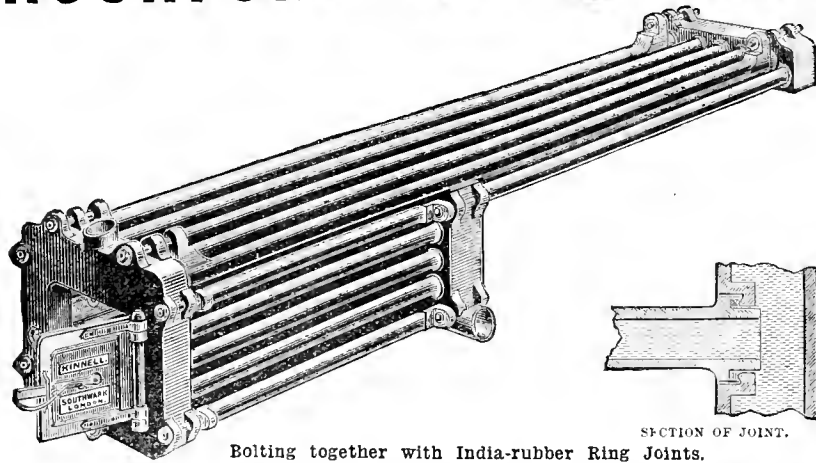
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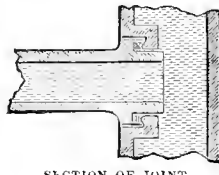
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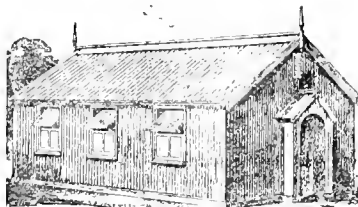
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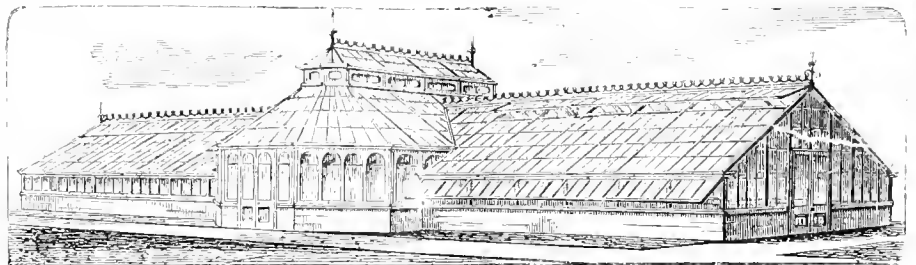
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ROYAL BOTANIC SOCIETY of MANCHESTER.
A FRUIT CONFERENCE will be held in Manchester on the 21st and 22nd inst. The Right Hon. the EARL of DERBY will Preside on the First Day, and Alderman Sir JAMES WHITEHEAD, Bart., on the Second Day. The Subjects to be brought before the Conference are published in the Schedule.
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R. P. COSWAY, Tiverton, Devon.

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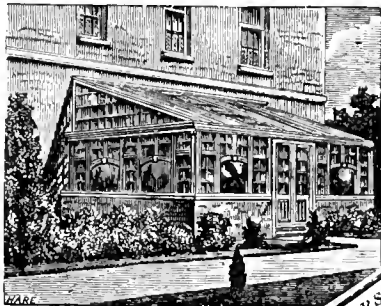
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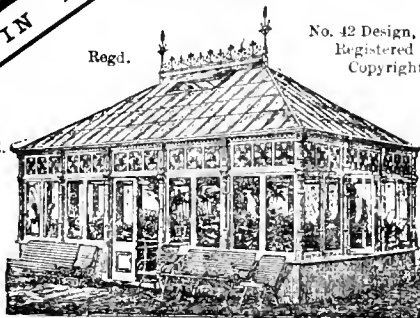
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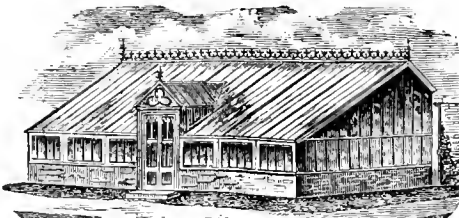
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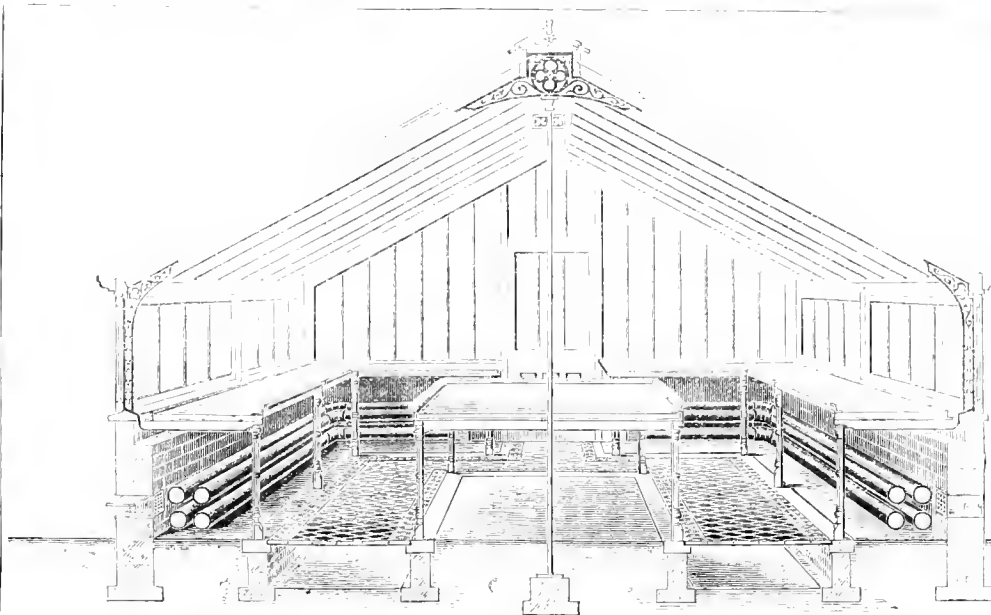
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MESSRS. PROTHEROE & MORRIS' ROOMS,

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There are only Seven Plants in Europe, which are mostly in the princely Collection of Baron J. H. W. Schroder. This Orchid is, among Dendrobies, the Vanda Sanderiana among Vandas, and as totally distinct from all other Dendrobies as Vanda Sanderiana from all other Vandas. It must be distinctly understood, that the Dendrobium we offer is absolutely unlike any other Dendrobium phalænopsis variety, and a gem among Orchids quite incomparable.

THE FACT of Baron Schroder flowering each of his plants annually proves how free-growing this Dendrobe is.

THE FACT of the sensation it caused this spring when exhibited before the Royal Horticultural Society, at the Drill Hall, proves that when we state this Dendrobium to be "THE KING OF THE GENUS," we do not over-estimate its beauty.

THE FACT that about seven plants, now in collections, come from two small plants originally introduced to the Royal Gardens at Kew, conclusively proves its free growth.

THE FACT is, Mr. JAMES O'BRIEN says it is a very free doer, as is evidenced by fact of the plants, now in collections, having been grown from such small scraps as the original plants were when first received.

THE FACT that there will be shown, on the day of Sale, dried flowers, ranging from white to rose and purple, proves that our New Guinea variety is finer than the original.

THE FACT that we are able to show quantities of flower-spikes over 2 feet long, proves that this Dendrobe is as fine for cutting purposes as Odontoglossum Alexandræ, and it even surpasses that grand Orchid in its more brilliant colouring, lasting equally long in perfection.

SANDER, ST. ALBANS.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 10, 1891.

APPLE CULTURE AND APPLE ORCHARDS.

YOUR recent articles advocating fruit-tree culture on a more extensive scale than hitherto, will lose nothing by friendly criticism, or more critical handling of the subject than your correspondents have accorded it. I do not consider that the main object, that is the more general culture of fruits, is likely to be obtained by a too great stickling for rule-of-thumb methods of the gardener. Spade husbandry is undoubtedly the best if well carried out; but it is not desirable to advocate for all places and soils digging the ground by hand, or to insist on its being needful in securing good crops of fruit. When fruit trees are planted, they repay proper outlay in this respect, but once this is done well, I maintain that the trees in ordinarily good soils will need but little more care. The knowledge of this fact should sweep away any difficulties which may arise in the minds of inexperienced planters.

Although it is recorded that twenty-two named varieties of the Apple were in cultivation in Pliny's time, and, according to Stow, "Carp and Pepins" (Pippins) were introduced about the middle of the sixteenth century; still, knowing the Crab is a native of most countries of Europe, there can be little doubt that all the Apples of the present day sprang therefrom. A more hardy and enduring tree could not well be discovered. I have seen it grow out from the crevices of the roots of a huge Oak, and extend to large size, retaining the utmost vigour; whilst, whether amidst brushwood or in hedgerows, it proves irrepressible. Such being the prototype of the Crab, I have no hesitation in saying, that Apple trees on the Crab once well planted in good soils, having natural drainage, will bear fruit abundantly for very long periods, provided they are permitted to grow, more or less, naturally. I would not suggest that no pruning will be required, but I do believe more young trees are ruined by injudicious and excessive pruning than by any other cause. It is only necessary to observe the pole-trimmed fruitless branches of what are known as pyramidal trees, in numerous suburban gardens, to determine this fact.

The late Mr. Shirley Hibberd was perfectly right when he inveighed against this unnatural practice when carried to extremes. For such a tree to succeed, it must not be pollarded. An Apple tree will grow to large dimensions. Speechly records a tree growing at Burton-Joyce, near Nottingham, with branches extending 20 to 24 feet from the bole, which, in 1792, produced upwards of 100 pecks of Apples; and I can well believe it, as I have the remains of an Apple tree in

my own garden, the bole of which measures 55 inches in circumference; and a local market-gardener living near affirms that he once bought the crop upon it at a given price, and subsequently gathered the crop, which amounted to 25 bushels. Yet this tree grew upon grass land, never receiving any artificial aid whatever. Speechley's tree was reckoned to be about sixty years old, which is probably the age of my tree. Who, therefore, can calculate the quantity of fruit such a tree produced from first to last, and what the amount of profit has been in all those years?

The Apple, to succeed, must have plenty of head room. It may be necessary, as regards such varieties as King of the Pippins, Wellingtons, &c., occasionally to thin out the spray from the centres of the trees; not so, however, in the case of Bleaheim Orange, Hawthornedens, and those of similar habit.

Such small attention as the above, and an occasional surface mulching with manure, &c., is all that such trees require to produce, after the first eight years, fairly uniform crops—such crops, in fact, as it is not possible for annually severely-pruned trees to give under any circumstances.

I have heard it said by self-esteemed wiseacres, that Apple trees "should be so pruned as to admit of wild ducks flying between the branches." My good neighbour next door followed this practice, and I have seen a load of faggots carted from his orchard on more than one occasion. The result was, he had no crops. Latterly he has taken a lesson from over the fence, and his trees have assumed more natural shape, and are fruiting admirably. But it will be said by those who are accustomed to toy or dwarfed trees, on the Paradise stock, and have little practice with well developed orchard trees, "Dwarfs are best, and give greater returns," which is a contention I shall never cease opposing, even though I am told I am "behind my day." When the Archimedian mowing-machine first came over, I alone contended it never would answer. Then also I was adjudged "behind the times." Patience then, as it will now, awarded me, however. The Archimedian machine had another cutter blade added to it, and as a near copyist of Ransome, Green, and others, it remains amongst us. That dwarf trees give their limited crops earlier I am well aware, but the actual gatherings cannot compare with those of standard trees. My three standard Hawthornedens, never large-headed trees, give heavy crops without fail year by year. Reverting to my fruit-book for this year, I find they have already been denuded of seven sieves of fine fruit, some of which average 1 lb. in weight. Such gatherings commenced on July 25, having returned 6s. and 5s. per sieve, all outgoing accounted for besides. From 8 to 10 sieves of Apples still remain upon these same trees, to be gathered in successive batches. If we admit that three dwarf trees could occupy the space required by each of these trees, making a total of nine, or even say they occupy the space of twelve dwarf trees, is it to be imagined the latter twelve would produce 17 sieves of fruit, or even half that quantity?

Against the standards, grass feed below has to be credited; but against the dwarfs, cultivated ground must be debited, to say nothing as regards original cost of the trees.

Having stated the facts, I freely admit that both systems of culture are desirable and profitable, and am assured that both can be carried to a successful issue, with a tithe the outlay suggested, or at least hinted at, in much that is written. Even as regards districts possessed of undrained subsoils, and indifferent ground generally, where deep light soils with gravelly subsoils do not exist, but in their lieu cold clays, &c., shallow planting should be followed, and if it is possible to excavate a hole 3 feet deep, and deposit brick rubbish 6 inches in depth therein, before the soil is placed in, so much the better. Chopped-up turf is excellent root-food for them, hence all who plant on grass lands, will do well to place the surface spit by itself until excavations are made, then to chop it up and place it at the bottom. When shallow planting is intended, the roots should be spread out upon the freshly-moved soil not more

than 2 inches below the ground level, a mound being placed around the bole of each to steady it.

In recent controversies much has been said and written concerning the miserable appearance of the majority of old orchards scattered throughout the country, and this has been made a handle whereon to hang theories of unlimited neglect.

This is undoubtedly a common error. We have no reason to imagine those in possession of such orchards would not resuscitate and improve the trees if they could. Indeed, the presence of young trees planted amongst the old, all but invariably show the bent of their owners. The fact is, few take into consideration the longevity of these trees, and the immense age of the majority of such orchards. Haller averred that certain orchard trees in Hertfordshire had stood there a thousand years, and were still prolific (!). Judged by this imagery, the ages of many existing orchards are very old; so that the wonder should be, not that the trees are so feeble, but that they exist at all.

Aged orchards are often associated with extremely old homesteads—a suggestion that, at least, one is as old as the other. But the mind cannot rest there. Even supposing the tenements have been erected, it is no proof that the orchards may not have graced the surroundings of still earlier ones. It will be well, therefore, to put aside the insinuation that aged orchards generally show the owner's neglect; and to have resort to new plantings.

The Apple can be brought to higher perfection in Britain than any other fruit; very good examples are produced in the Highlands and Orkneys, as well as the Shetland Isles; hence there is no valid reason against planting freely to meet our increasing demands.

The recommendation to plant this fruit plentifully is not so new as some aspiring publicists would have us believe. Thus wrote Gerard early in the seventeenth century:—"I have seen in the pastures and hedgerows about the grounds of a worshipful gentleman dwelling 2 miles from Hereford, called Master Bednome, so many trees of all sorts that the tenants drinke for the most part no other drinke but that which is made of Apples; the quantity is such, that by the report of the gentleman himselfe, the parson has for tithe many hogsheds of syder. The hogs are fed with the fallings of them, which are so many that they make choice of those Apples they do eat, who will not taste of any but the best. An example, doubtles, to be followed of gentlemen that haue land and living; but ennie faith, the poore will break down our hedges, and we shall haue the least part of the fruit. But forward in the name of God. Graffe, set, plant, and nourish up trees in euery corner of your grounds; the labour is small, the cost is nothing, the comoditie is great. Yourselves shall haue plenty, the poor shall haue somewhat in time of want to relieue their necessitie, and God shall reward your good mindes and diligence." *William Earley.*

NEW OR NOTEWORTHY PLANTS.

THUNIA MASTERSIANA, n. sp.*

This is a new and exceedingly handsome Thunia. The plant is of strong, robust habit; the stems immediately above the ground are as thick as the

* *Thunia Mastersiana*, n. sp. — Planta elata 3–4 pedes alta distichophylla. Folia glauca oblongo-lanceolata v. lanceolata, 10 poll. longa, 1½ poll. lata, suprema breviora racemum superantia. Racemus pluriflorus. Bractee oblonge acutae naviculares sub-antheri, persistentes reflexe ovarius sub-breviores. Sepalum dorsale lineare oblongum (v. ligulatum) acutum; lateralia paulum majora postice in pseudocalcar breve conicum producta; petala paulo minor subaequalia, labellum campanulatum (explanatum fere quadratum) brevissime apiculatum margine revoluto undulato dentato decorum, disco lineis 7–9–11 elevatis crispatis antice ramosis instructum. Gynostemium postice rotundatum marginatum apice dilatatum tridentatum adjectis dentibus quibusdam minoribus; labello paulo brevius. Flo. 25 poll. diametro, omnino caudatus, labelli calli auri purpureo-marginati. Flores racemi omnes coetanei. — Ex Moulmein; importari jussit, F. Sander, Verulamensis.

thumb; they are more than 4 feet in height, with glaucous, densely crowded, distichous, and strong, dorsiventral leaves of 10 to 12 inches in length by nearly 2 inches in breadth. In general appearance the plant is more like a Palm than is any other Thunia. It is, of course, nearly allied to *T. alba*, Rchb. f. (*Phainus albus*, Lindl.), and perhaps even more closely to *T. pulchra*, Rchb. f. (introduced twenty or more years ago by Mr. Low), but it differs from both. Firstly, the growth of this species is more luxuriant in every part; secondly, the flowers, although very beautiful, are scarcely half the size of those of the two allied species; thirdly, the labellum is more campanulate, or bell-shaped, only the extreme margin is revolute; it is extremely finely serrulated, and the basal part is protracted into a very blunt spur (in *T. alba* the spur is well-developed; in *T. pulchra* it is altogether wanting). All these characteristics are plainly shown. The peculiarities of the rather large gynostemium are more nearly like those of *T. pulchra*. The plant was introduced from Moulmein, and flowered during the last weeks of July and first of August, at St. Albans, in Mr. F. Sander's houses. The new species is named in honour of Dr. M. T. Masters. *Dr. Kränlin.*

DEVONSHIRE FERNS.

MAY I be permitted to remark upon one or two points raised by your correspondent, Mr. Napper, lately, in the above connection. In his reference to the "kinds of Devonshire Ferns," it appears to me that he confounds species with varieties, the latter of which are alone so numerous as to render their classification difficult. I am strengthened in this impression by his concluding remark, that "latterly the various forms of British and exotic hardy Ferns have been manipulated, and many seedlings raised, so that now we have in cultivation hundreds of garden varieties, many being extremely novel and beautiful." Here he displays his knowledge of the existence of these varieties, but quite wrongly imputes them to "manipulation" under culture; and here I perceive the solution of the puzzle which he finds in "Strolling Devonian's" remarks, since it is precisely in the shady lanes of Devon that hundreds of beautiful varieties have been found "wild," and amongst these perfectly wild "finds" of Devon and elsewhere in the British Isles are to be found the majority of the best and more perfect forms. In point of fact, in Mr. Lowe's recent list of some 1800 forms, 1100 were found wild, without reckoning a large additional number of repeats, many of which, though too near to previous records to be differentiated from them by name, are distinct enough to connoisseurs, while, from their being found in far distant localities, they are obviously independent "sports."

In hunting, therefore, a district so rich as Devonshire, while the species hunter will be jubilant over some 25 "kinds," i.e., species, the experienced variety hunter, given time enough, will accumulate hundreds of perfectly distinct types. Mr. Moly, for instance, in the neighbouring county of Dorset, has something like 600, gathered mostly within driving distance of his house, and these 600 I can vouch by actual inspection, are by no means distinguished only by hair-splitting differences, but are all very distinct from each other, inferior types having been ignored when discovered. The late Dr. Wills, resident a few miles from Mr. Moly, had also a large collection of "own finds," distinct and beautiful.

It is clear to me, therefore, that your correspondent when in his native county, regarded, as he apparently still regards, the varieties as mere horticultural productions, and hence did not find them because he did not seek. The chance of a good form being discovered without specially careful and persevering search, is a very remote possibility; while if the attention be concentrated in the "varietal" direction, and the eye become accustomed to discriminate differences quickly, prizes of the most un-



FIG. 51.—*HELIANTHUS MULTIFLORUS*. (SEE P. 428.)

expected types are sure sooner or later to reward the patient hunter.

If Mr. Napper will take this to heart, I am sure his next visit to Devon will add something to his collection, and alter his views about the "manipulative" origin of our numberless beautiful abnormal types. So far as I know, not a single new "type" has originated under culture, all that has been done is to raise seedlings and select the best, which in some cases has resulted in improvements, and recently good types have been "crossed" with happy results.

Another point in his interesting letter touches the old bugbear of nomenclature, not in this case varietal, but specific. To my mind, it is very much to be lamented that a recently-published popular book should have lumped together species which all cultivators, if not the scientific botanist, have long pronounced as quite distinct, and which were formerly recognised as such by the same writer, who now reverts to an older classification. No man has more respect than myself for the scientific side of this question, for I well know that when we step outside our own islands, we may find and do find intermediate specific types, which form links more or less intimate between the genera. Nature, in short, has no hard-and-fast lines, such as every system of classification attempts to draw. When, however, I find our Shield Fern (*Polystichum*) and our Buckler Fern (*Lastrea*) lumped together as one under the name of *Aspidium*, I rebel, and so does everyone who grows them. They are absolutely distinct, generally and in detail; and even in the indusium or spore cover, the round central-stalked one of the *Polystichum* differentiates it altogether from the kidney-shaped cover of the *Lastrea*. The *Athyrium*, too, has culturally no affinity whatever to the genus *Asplenium*, into which it is dragged anew on account of a strained resemblance in the mode of fructification, although in habit of growth, habitat, size, texture, varietal tendencies, and deciduousness, it stands as far apart as can be. Everyone knows the plant as *Athyrium*, yet for no good reason that can be given, confusion is rendered worse confounded by a practically fresh christening. *Blechnum* is another case where "lumping" is carried to excess at the expense of a well-known name, justified by a distinct difference in the fructification from *Lomaria*, into which it is again thrust. Your correspondent, by the way, gives this the popular name of the rough Spleenwort, which is quite new to me; the Shield Ferns (*Polystichum*) and Buckler Ferns (*Lastrea*, *Nephrodium* or *Aspidium*) he lumps together as Shield Ferns, which is wrong. He omits, too, *Lastrea montana*, which is common enough; *Adiantum capillus-veneris* (Maidenhair) and *P. dryopteris* (Oak Fern), which I found on Exmoor, are rarer, but still to be found, vandalism notwithstanding.

In conclusion, I would advise all British Fern growers to stick to the popular nomenclature with which they are familiar, until very good and cogent reasons are given for alterations, and not to adopt changes off-hand under the impression that they are thereby keeping up with the times; they may, as in the case before us, be going back instead of forward. *Charles T. Drury, F.L.S., F.R.H.S.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM × CORADINEL.

Many of the forms of this very variable natural hybrid approach more nearly in character to *O. Lindleyanum* than to the other parent, *O. crispum*, but one which has now appeared in the collection of Sir Charles Strickland, Bart., is a decided exception, and is more like the original form figured and described in these columns in 1872 (p. 1068, fig. 251). It has quite the shape of *O. crispum*, the sepals being over 6 lines and the petals over 7 lines broad, and all pale primrose in colour. Each has a large chestnut blotch about the middle, and the sepal's

some smaller ones near the base. The lip is oblong, over 6 lines broad, and retuse with a slender apiculus over 1 line long. The crest, however, is nearer to *O. Lindleyanum*, and in front of it is a very large chestnut blotch, leaving only a narrow white margin beside. The stalk of the lip is 6 lines long, and the column 8 lines, but the wings of the latter, as in *Coradinei* generally, approach closely to *O. Lindleyanum*. It is a very handsome form, and another example of the immense range of variation seen in some of these natural hybrids.

CATASETUM FIMBRIATUM ♂ AND ♀.

Another *Catasetum* must now be added to the list of those of which both sexes are known, making seventeen in all. A plant of *Catasetum fimbriatum*, Lindl., in the collection of W. Wright, Esq., The Grange, Denmark Hill (gr., Mr. G. Parrott), has produced a raceme of four flowers, of which the two lower ones are females, and the upper ones males. It has now been sent to Kew for preservation. The female flower has the sepals and petals strongly reflexed, light green, with the upper half of the former spotted with light purple, precisely as in the male. The lip is rather elongated, and has the margin and apex somewhat crenulated. Its appearance is very interesting, as the other sex has been known for many years. It is a native of Monte Video. *Catasetums* now appear to be fairly common in gardens, and a few days ago the females of no fewer than four species were in my hands at the same time. Notwithstanding a general similarity, there are various points of difference when compared side by side, which will, perhaps, admit of their more satisfactory determination in future. *R. A. Rolfe.*

VANDA CERULEA, BURMESE VARIETY.

The old *Vanda cerulea*, so long known in gardens, is well known to be a native of the Khasia and Jyntea Mountains. A few years ago it was observed by Mr. C. B. Clarke at Kohima, on the borders of Manipur, and now it has been found in Upper Barmah, whence it has been imported by Messrs. Hugh Low & Co., of Clapton. A fine raceme of the Burmese variety has been sent to Kew by E. H. Woodall, Esq., of Scarborough, in which the flowers measure over 4 inches across their broadest diameter. The dorsal sepal measures 1½ inch across, and the petals 1½ inch. All are beautifully tessellated with lilac-blue on a paler ground, the lip being of a deeper purple-blue shade. The eastward extension of its range is very interesting, and quite in conformity with what is now known of the distribution of many other plants in this region. *Vanda cerulea* is very variable, both in size and colour, but the Burmese locality is said to have yielded some exceptional forms in both these respects. The one now to hand is certainly very fine, but I do not see how it can be separated by any distinctive character, owing to the range of variation previously observed in the species. *R. A. Rolfe.*

CATTLEYA LABIATA AUTUMNALIS.

Mr. F. Sander, of St. Albans, with his accustomed courtesy, has sent me various periodicals in which his remarkable re-discovery of the long-lost *Cattleya labiata autumnalis* has been mentioned. The last, which reached me to-day (September 25) is the *Saturday Review* of the 19th inst. In it are mentioned the known possessors of the old plant in England, France, and America, adding, "It is believed there are two in Italy." I have one of those two, and until quite lately another was in the collection of the gardens of the Municipality of Florence. But as I understand a large number of Orchids were sold out of it this summer, I do not know whether it is still there. Mine, as well as others which existed in Florence, were derived from the San Donato collection of Prince Anatole Demidoff. Mine answers to the description of *C. l. picta*, being of a deep red purple. It is now showing flower, the sheath having just opened, and is as described—double. I have also actually in flower *C. l. Warocqueana*. This has also a double sheath, only whereas in my *C. l. picta* the two sheaths are of equal size,

and intersect one another, in the *Warocqueana* they are unequal, one being within the other. The flower of my *C. Warocqueana* resembles more *C. l. Gaskelliana* than *C. l. autumnalis* vera. Another plant of *C. Warocqueana*, which has two flower sheaths coming on, has the sheaths single, like most *Cattleyas*. This may be that it has not yet gained sufficient strength, as otherwise the plant is identical in growth with the double-spathed one in flower. *H. J. Ross, Poggio Gherardo, Florence.*

ONCIDIUM CRISPEM LODDIGESII.

Here we have the original plant "fiores aurantiaci luteo-limbati, diametro tripollicari," as says Lindley in his *Genera & Spec.*, p. 197. These lines were written in 1833, and, in that interval of time, the plant quite disappeared from our collections. Several years later, in 1838, Messrs. Knowles and Westcott figured it in the *Floral Cabinet*, but what a reduced form in size and splendour! Now, we have the best form of it ever introduced. We received a flower about 3½ inches across; the petals more than 1½ inch broad; the labellum flat, and 1½ inch broad. The margin of all the petals, &c., is very regularly waved. The whole flower is deep brown, narrowly bordered with yellow, and with a radiating golden blotch at the base of the labellum. The wings of the column are the largest we have ever observed. The plant was introduced by Messrs. Sander & Co., St. Albans, and purchased amongst a lot of *Oncidium pratense* by Mr. Herbert Harris, Bowden Hill House, Chippenham, who is the *beatus possidens*. Considering the enormous size of the flower, one may be tempted to regard it as a variety, but as Dr. Lindley's diagnosis in all respects is the true description of the flower before us, we must admit that the old Lindleyan plant is re-discovered. The re-discovery of the *Cattleya labiata* vera is the event of the day in the Orchid world, and here we have a quite analogous case. The strange fact that the good old plant disappeared so quickly that only reduced forms remained, may be explained by its scarcity in its home, and even under the recent large importations of *Oncidium pratense*, only this single specimen has been found. *Dr. F. Kränzlin.*

MR. DREWETT'S ORCHIDS.

A short time ago, I happened to be in the vicinity of Riding Mill-on-Tyne, and it occurred to me that a few hours might well be spent in paying a visit to Mr. D. O. Drewett's renowned collection at Willow Wood. Owing to the kindness of Mr. Keeling, the gardener, I had every opportunity of seeing the Orchids. *Cypripediums* apparently are Mr. Drewett's favourites, and the plants are extremely well grown, and although there were but few in flower at the time, it was interesting to notice the ripening seed-pods on many of them. Some fine hybrids have already been raised in this collection, and some others will appear in course of time, and probably cause some amount of sensation in Orchid-loving circles. A specimen plant of *C. Lowii*, which had just finished flowering, could not but attract attention, and Mr. Keeling informed me that it had borne the large number of seven flowers on one scape, which exceeds the number on Mr. Douglas's plant recently shown at the Royal Horticultural Society, by one flower. *Visitor.*

MORPETH HOUSE, IPSWICH.

C. Whitfield King, Esq., is to be congratulated on the rapid progress which he has made in laying out the above place, of which he is the proprietor. It is only a few years since when the site on which this residence now stands was a hilly field; this state of affairs, however, has been entirely changed, and, thanks to the gardener, Mr. Southgate, we have now one of the prettiest and best kept gardens in Ipswich. Rockeries are to be found well stocked with good alpine plants and dwarf-growing shrubs. Herbageous borders are prominent features, and the varieties of *Helianthus*, *Dahlia*s, and other large bloomers give a gay aspect to the garden. Mr. King is a thorough enthusiast in matters horticultural, and his collection of Palms, Ferns, and Orchids is by no

means a meagre one. Notable amongst the Orchids was a well-grown plant of *Cattleya superba*, a very fine variety, which annually throws a flower-spike of seven flowers; and *Cypripedium insigne*, with from forty to fifty growths, making a grand display. Large specimen plants of *Cœlogyne cristata* also promised well for blossom. A good plant of the true *Lælia anceps Williamsiana*, which Mr. Southgate informs me is a pure white flower, and very handsome, is throwing two spikes which promise well for a good show about Christmas time. Many of the Orchids originally belonged to Mr. Philbrick, and are therefore somewhat historical. Other Orchids in flower were *Oncidium varicosum Rogersii*, a large branching spike; *O. unguiculatum*, *O. tigrinum*, *Dendrobium Phalænopsis*, *Cypripedium Harrisianum*, a good form; *Lælia Boothiana*, or as sometimes called, *Cattleya lobata*, was well in flower, and though it is the first that I have seen, I should imagine it to be a fine variety; the sepals and petals of a

plants in flower were noticed a few nice pieces of *Cypripedium Dominianum*, a graceful hybrid, with soft yellow flowers and dark lines; a splendid variety of *C. Harrisianum*, *C. Sedeni*, the little known *C. albanense*, with beautiful rose-coloured flowers; and several plants of *C. Godefroyæ* and *C. Veitchii Demidoff var.*, which struck me as being well grown, as did also a few plants of the well-known *Cœlogyne Massangeana*. There were several *Maedevallias* in bloom, and amongst them the rare *M. Gaskelliana*, shown a short time ago at the Royal Horticultural Society. *Cattleyas*, *Dendrobes*, *Lælias*, *Calanthes*, &c., were all well represented, and some amount of space was occupied by a recent importation of *Angræcum sesquipedale*, near to which it may be mentioned were a few specimens of quite a new species of *Angræcum* recently discovered. The plants of this latter unfortunately had suffered severely in transit; but time and care will no doubt bring them round. *Visitor.*

bad condition, so much so that he hesitated whether to root them out, or try and resuscitate them. Deciding on the latter course, he had them carefully lifted, made a new shallow border less than 18 inches in depth, and replanted them. They commenced to improve at once, and have continued annually to do so. Undoubtedly they have now reached the height of perfection, and during my fifty years of experience, I have never observed more highly-finished specimens. In a house adjoining the Muscats there is a grand lot of Mrs. Prince Muscat and Black Alicante, very fine in every respect, and the former variety uniform in the size of the berries, which, with this variety, is not always the case.

Figs in pots are unusually well done here, the fine bushes occupying 12 and 16-inch pots are loaded with fruit; the variety grown is Lee's Perpetual. Tomatoes are largely grown, the plants being in 10 and 12-inch pots, and the crop is a wonderfully fine one, many of the fruits weighing nearly 1 lb.; the favourite variety is Trophy. In one of the plant-houses there is a very grand plant of *Lapageria rosea*, literally covered with the darkest and richest-coloured flowers I have ever seen. Ferns, including *Adiantum cuneatum* and others are excellent, planted out on rockery banks, a plan much to be recommended, as nothing so fine as these can be grown in pots. A remarkably good plant of *Passiflora princeps* covers the roof of this fernery, and is almost perpetually in flower.

The kitchen garden contains excellent crops of Seakale, Celery, Brussels Sprouts, and Artichokes, the latter very fine heads. Wythenshawe Garden is famous, in the district, for its Apples, but this season the fruits have dropped prematurely, owing to the imperfect ripening of the wood last autumn and the ungenial weather at the time the trees were in bloom. Pears on the south walls are carrying good crops. There was a splendid lot of *Chrysanthemums* to be seen, with well-ripened wood and fine bright foliage to the pot's edge, promising a good harvest of flowers. The plants are not overfed—as we often see them. *H. Ellis, Bowden.*

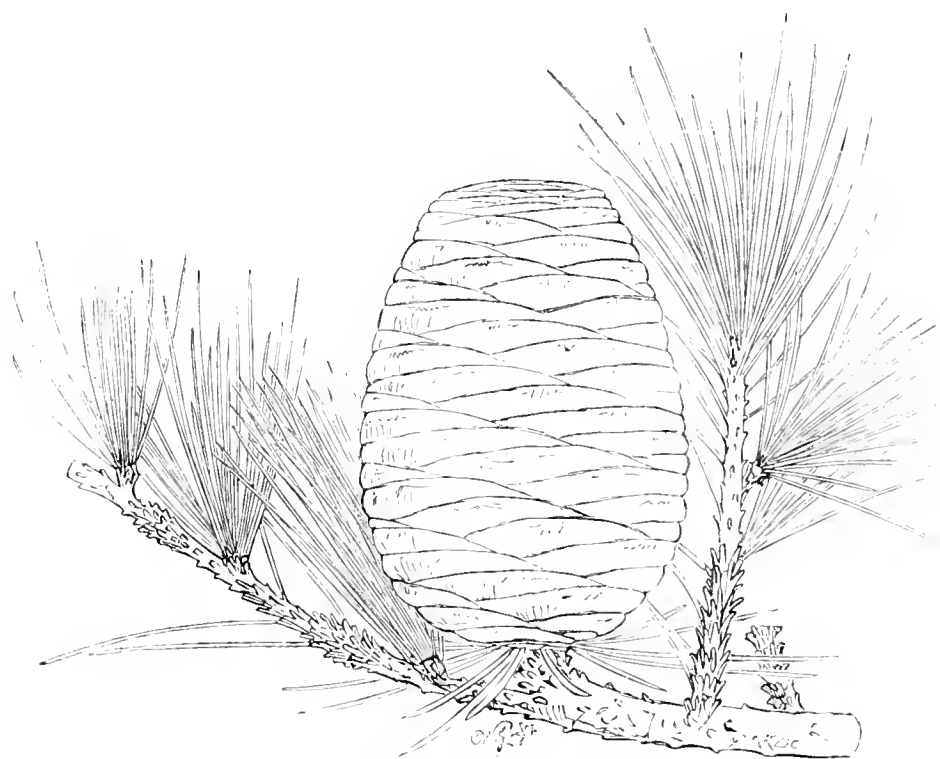


FIG. 52.—CONE OF CEDRUS DEODARA.

rich rosy tint, and fairly broad, and the labellum of a dark crimson, with darker stripes, and similar in form to *C. crispa*, but twice as large. A large specimen of *Cattleya Gaskelliana* had seven flower-sheaths, and, though late, it is nevertheless very acceptable. *Cattleya Loddigesii* and *C. guttata Leopoldiana* are also in flower. Plants of *Odontoglossum grande*, a species which is grown in large quantities, are now full of spikes; *Odontoglossum* are represented by fine clumps of *O. Alexandræ* and *O. Pescatorei*. In conclusion, it may be safely said that this is going to be one of the best gardens in Suffolk. *Homeless.*

ORCHIDS AT SOUTHGATE.

The small establishment of Messrs. W. L. Lewis & Co., Chase Side, Southgate, is worthy of a visit from those who desire to obtain a cool-house specimen. Here may be seen many species, which one generally associates with high temperatures, grown where the warmth seldom rises above 60° or 65° Fahr., and to all appearance they are quite as healthy as the same would be if grown warmer. Among the

WYTHENSHAW HALL, NORTHENDEN, CHESHIRE.

CALLING at the gardens of this interesting old place, the seat of Thomas E. Tatton, Esq., a few days since, I was pleased to find many things so well done that I considered them worthy of note.

Mr. W. Neild, the gardener here, has for several years past been famous for his productions of Muscat of Alexandria Grapes, and this season is no exception, for they are at the present time splendid, fine in bunch, berry, and colour, the latter of that rich amber shade, which always accompanies high flavour. The house in which they are cultivated is of lean-to form, the length of the rafters 16 feet; each Vine is allowed to carry twelve bunches, the larger of which are from 12 to 13 inches in length, and from 8 to 9 inches across the shoulders, and about 4 lb. in weight. These Vines have been planted something like thirty years, but at the time Mr. Neild took charge they were in a very

CEDARS.

The cones of the Deodar are still so rarely produced in this country, that we are glad of the opportunity afforded us by Mr. Herrin, of Dropmore, of giving an illustration of it and one of the Atlas Cedars, fig. 53, for comparison. These two forms, with the short-leaved variety from Cyprus, are so intimately related to the Lebanon Cedar that Sir Joseph Hooker, many years ago, considered them to be all referable to one and the same species, and in a broad sense he was no doubt correct. They were in all probability all derived from the same original stock, although the differences are now so defined, that for all cultural purposes the three mentioned must be considered distinct. The cones of *C. atlantica* are always, so far as we have seen, of neater outline, the scales more compact and uniform at the edges, and the cones more depressed at the apex. Of all the forms, the glaucous form of *atlantica* is that which is most desirable as a cultivated tree, though it is too soon yet to know whether either the Deodar or the *atlantica* will rival the Lebanon in majesty and variety of habit.

THE AFRICAN OIL PALM IN BORNEO.

In the number of the *Kew Bulletin* for November, 1889, attention is drawn to the fact of the African Oil Palm (*Elais guineensis*) having been so far back as 1877 successfully introduced into Labuan; and in 1878, about 700 trees were reported by the acting Governor as being in a very healthy condition. Nothing having been heard of these plants since 1878, inquiry was made from Kew to the Colonial Office in 1889, and from the Colonial Office to the acting Governor of Labuan, which brought the information, that the plants which were raised on the island of Daat in due time produced nuts, but no attempt ever seems

to have been made to prepare oil from them, or to utilise them in any way, and in 1888 the Palms are reported to have been all removed to make room for Cocoa-nut trees.

The following paragraph, under the head of "Palm Cultivation in Sarawak," appears in the *Planters' Gazette* for September 2, copied, it is said, from a recent number of the *London and China Telegraph*. The information it contains evidently bears on the same subject referred to above, though the two accounts do not by any means tally:—"Some twenty years ago, a portion of the estate which was owned by Lady Burdett Coutts was planted with some West African Oil Palms. The land was very poor, and the estate was sold for a small sum to a Chinaman, who confined his attention only to the Pepper Vines. Years afterwards, the Government arranged to try and make something of the Palm trees which still remain on the estate, choked with weeds and neglected; so five years ago a party of four men were put on to keep the ground clean, collect the nuts, and gradually enlarge the estate by further planting. The accumulations of nuts during the past five years, having become large, these have just been worked up, and the yield from the 400 Palms which are bearing amounted to 1200 gautangs, or 70 piculs of good oil. The difficulty now is to find a market for this, as in Singapore it is not inquired for; but samples have been sent to England and Australia, where there is a great demand for the manufacture of soaps, and as a lubricant for railway-carriage wheels. There are now 40,000 young Palms on the Quop estate planted out, in addition to those in the nurseries, and as they bear at from five to six years of age, it is certain that the experiment, having been thus far successful, is well worth prosecuting further, in view of the trade which should arise in future in this product."

FLORISTS' FLOWERS.

CACTUS DAHLIA ANNIE HARVEY.

AMONGST Cactus-flowered Dahlias, the above variety stands out one of the showiest, the colour being bright rich crimson-maroon; added to this fine tint, the profusion of its flowers makes it still more valuable. *E. M.*

THE GLADIOLUS.

Cross-breeding has been difficult during the late wet weather, the pollen grains and the stigmatic surface being mostly in an unfavourable condition—at least, in the south—up to September 9; afterwards, bright sunshine, with a maximum temperature of 75° to 80°, was exceptionally favourable for fertilisation, and was doubtless taken advantage of by those to whom the raising of seedlings is a most interesting operation. So essential to success is warm and dry weather, that I have noticed on long spikes of seed-pods many capsules without a good seed, or with a few imperfect ones, when the weather had been rainy and cold for two or three days together. When the weather is fine, the pods fill up rapidly with seeds. I generally touch a stigma with pollen two days in succession—in the forenoon, and in the early part of the afternoon. Seedlings should be grown where they will be exposed to the light. If the seeds germinated in pots in a cold frame, the plants will be of good size, and ought to form nice bulbs before the leaves fade. As these become yellowish, water must be entirely withheld, as unless the soil be quite dry the bulbs will quickly start into growth. It is perhaps the best way to turn the bulbs out of the soil, and keep them in dry sand until planting-time.

The flowers of Gladiolus opened splendidly, and the late-flowering spikes were better than those which showed in August. How very different are the flowering conditions in the south of England to what they are in Scotland. When there, I had an opportunity to visit the nurseries of the celebrated

Scotch growers, Messrs. Stuart & Mein, at Kelso. The first thing that I noticed there was the healthy look of the collection, not a diseased plant being observed anywhere. With us it is different, our stock of plants often showing unhealthiness, and the imported corms do not always throw such good spikes as we should like. The arrangement adopted by Messrs. Stuart & Mein to protect the spikes from the weather, was excellent, withal simple. Two light boards, a yard or so in length, were joined together in the form of a triangle; to the third side a square of glass was fixed; the spike is tied so that the flowers face the glass, with a light deal board on either side. Some protection is absolutely necessary to keep the flowers fresh for exhibition, and this is certainly the best I have ever seen. Those who still wish to exhibit choice spikes at exhibitions, must afford water at the roots, if the soil be dry; but if the spikes are cut, or they are not required to be grown to the utmost limits, water may be withheld, and the ground well stirred between the plants. I find this helps the ripening of the corms. If a space of ground can now be prepared for next season, it will be preferable to trenching and manuring it in the winter. The late M. Souchet, who did so much to bring the Gladiolus (hybrids of *Gandavensis*) up to their present state of excellence, left the ground in fallow for one year before planting the roots. This system of culture is adopted by other growers with equally good results.

THE HOLLYHOCK.

This flower was well represented at the late Royal Caledonian Horticultural Society's exhibition, the spikes from Messrs. Alex. Kerr & Sons, Roxburgh, being excellent, and not much behind those sent by Messrs. Stuart & Mein. Roxburghshire seems to be the northern home of the Hollyhock, for all the largest spikes and the best blooms came from that county. When at Kelso, I had the pleasure of looking over Messrs. Stuart & Mein's collection, and I can truly say that I never saw better furnished plants, the deep green leaves reaching to the base, with not a trace of the dread disease. Mr. Mein was good enough to say that he had followed the instructions which I had given in these pages more than once, as to propagating from eyes taken from the lateral growths, and he pointed out to me about 1500 plants in small pots which were raised in that manner, and these plants are of even more value in Scotland than they are in England, for in the South we have no difficulty in flowering the spring-struck cuttings in time, but in the North, the late spring cuttings do not flower until very late in the season. Wherever early bloom is required, the summer-struck cuttings from eyes are best. I noted a few of the very best in the collection at Kelso: Queen of Yellows, a superb variety, is certainly the best of the rich deep yellow-coloured ones; Hercules is still the best of its colour—it is yellowish-buff; Octoroon is a fine purple flower, with a maroon or crimson tinge; Pride of Layton is reddish-buff, with fine compact centre, and good guard petals; Agnes Berry is of a primrose tint, with some red in it—a fine compact flower; Favourite has a rosy-peach colour, the flowers are large and well formed; Purple Prince is a noble variety, with good guard petals; Mrs. Hunter, a good white variety; John Finlay, a fine full crimson; Cremonne, yellowish-buff, with a reddish tint; Peri, the best white variety yet raised—it is large and well-formed; Cygnet is another very good and very pure white; Lord Decies, a dark crimson, is a fine bloom; Fraok Gibb Dougall is a rich purple; Grace Darling is of rosy-red, tinged with buff. In about one month from the present it will be time to cut down the stems to within 6 inches of the ground, and the plants dug up and planted in 8 or 9-inch pots, placed in a frame well exposed to light, and well ventilated, there to remain until it is time to take the shoots from the base. These should be planted singly in sandy soil in small pots, and rooted in mild bottom-heat in frames, or in a forcing-house. As soon as the ground where they

are to be planted next year can be spared, it should be heavily manured with the solid farmyard dung, and trenched, moving the soil well about whilst trenching it. If the ground be heavy in its nature, this early trenching is of great importance, and the manure then employed should be from the stables. *J. Douglas.*

VIOLETS.

The obtaining of a good supply of bloom during the whole of the autumn and winter is a very important matter, and to do this the plants should be placed in their winter quarters as early as possible after this date. With care, early transplanting gives the plants a good time to get established before winter sets in, and the plants bloom freely. I plant them at the end of the month of August or the first week of September, and from these we are now able to gather some good blooms. By keeping the runners picked off, there will be no failure in the supply of bloom before the month of March. I may add that the lights are not made any use of, excepting when it rains heavily, till the frosty nights set in, so that the plants grow slowly, and consequently sturdily; and good soil is essential if large blooms are looked for. In bright weather, the plants should be well syringed over-head, so as to keep red-spider in check. Marie Louise is the best Violet for frames, although the flowers may not be so sweet as the Neapolitan. There is one more matter that is observed here, the plants are not put too near to the glass, so that there is no loss of foliage from damp, which is sometimes believed to be a kind of disease. If the leaves are 8 inches from the glass, and the frame is set at a steep angle, damp better makes its escape freely, and the glass and the plants keep dry and warm. *H. Markham.*

ROSERY.

FOUR GOOD NEW CLIMBING ROSES.

The following are four Roses of recent introduction that are already taking a high position among climbers, *i.e.*, with all growers who know them; it is my object to describe these briefly, and bring them before the notice of your readers:—

BRUNNERT FRIDOLIN.

Introduced by A. Bernaix in 1889—a most charming Rose, of quite a new colour; bright cherry-carmine, shaded deeper, and with a lighter spot in the centre of each petal. Form perfect, of fair size, and a grand climber under glass.

CLIMBING NIPHETOS.

Sent out in the same year as the above; this is the finest white climbing Rose grown. This grand Rose is in every respect similar to the well-known Niphetos, except in being a remarkably strong and vigorous grower. The flowers are produced in great abundance upon laterals from the whole length of the longer shoots, which reach from 15 to 25 feet in length.

KAISERIN FRIEDRICH.

also sent out in 1889, is a cross between Gloire de Dijon and Perle des Jardins. This is one of the most unique-coloured climbing Roses we have, while in habit of growth and freedom of flowering it is quite as good as the old Gloire. Colour, a deep saffron-yellow, lighter in the centre, with the out-sides of the petals finely tipped and splashed with bright and soft rose-tints. The outside of this Rose is very similar to Marie Van Houtte in the late autumn, and all who have seen M. V. Houtte at that time of year will remember the exquisite shadings.

HENRIETTE DE BEAUVEAU.

Introduced by Lacharme in 1887; very bright, clear yellow, same shade as a good bloom of Perle des Jardins; flowers most perfect in shape, produced very freely; sweet-scented. It is one of the finest yellow climbers grown.

The four Roses named are extra good when grown on a warm and sheltered south wall; also under

glass. I have tried them in both situations, and can say with confidence that they are worthy of first place among all climbers of this beautiful flower. A. P.

FRUIT NOTES.

PLUMS.—Belle de Louvain does not appear to be much grown, nor is it mentioned in Hogg's *Fruit Manual* (old edition), although I see it in Veitch's catalogue, where it is described as follows:—"Large and handsome, purple; it makes a fine free-bearing pyramid, cordon, or wall tree—very valuable for culinary purposes." It would seem, therefore, from the evidence of Mr. Ward's trees, and what is said or copied above, that Belle de Louvain is a most desirable variety, and planters will do well to take note, and add it to their lists. Rivers' Early has an established reputation, and is grown largely for market; but now that the foreigners come in, sales of it must be affected to a great extent, and probably later varieties will be more profitable. One of the

and those facing west. The same also applies to Coe's Golden Drop, which requires plenty of sun to finish it off; and when it attains its true yellow colour, it is exquisitely flavoured, and unrivalled during its season of ripeness. Jefferson's, too, is much improved by having a position where it can be exposed to the solar rays for at least half the day, an east or west aspect suiting it well. Reine Claude Violette is a most delicious Plum, as when well ripened and caught right, it is a perfect sweetmeat; and the same may be said of Reine Claude de Bayay, which is also valuable for its lateness, as it is one of the last to come in. The latest with us is Quetsche St. Martins, which hangs on until the middle of November, and for the season is very good; the fruit is medium-sized, oval, and yellow, partly covered with russety-red on the side next the sun.

As regards standards, those most heavily laden this year are, as usual, Victoria, which, however, in our garden and in others, is subject to fungus in the leaf—so much so, last year and this, as to become partly defoliated before the fruit was ripe, and the

Bunyard & Co. have now worked up a stock of it, and other nurserymen are following in their track. Grown under glass, we find it in season with Sea Eagle, but of better quality than that variety. It is large, reaching 10 inches in circumference, bright lemon-yellow in colour, suffused and streaked with crimson on the sunny side, and it is an attractive fruit on the dessert dish and exhibition table. Its flesh is very juicy, melting, and the flavour piquant; while the tree is hardy, and a good grower. Altogether, I consider this to be the best Peach in its season. Thomas Coomber.

NATURALISATION OF EXOTIC FOREST TREES IN PRUSSIA.

THE Forest Academy of Prussia between 1881 and 1890 distributed an immense quantity of the seeds of trees, furnished almost entirely by our distinguished countryman, Mr. John Booth, formerly proprietor of the celebrated nurseries at Flottbeck. Experiments have been made with twenty-two American and six Japanese species, as well as with *Pinus Laricio* of Corsica and Nordmann's Fir of the Caucasus. The experiments will be continued on a large scale in future with the following selected species only:—*Pseudotsuga taxifolia* (Douglas Fir), *Picea sitchensis*, *Chamaecyparis Lawsoniana*, *Thuja gigantea*, *Quercus rubra*, *Juglans nigra*, *Hicoria ovata*, and *H. minima*.

A second class, composed of trees which promise only a partial success, is reserved for less extended trials. It is composed of the following:—*Pinus rigida*, *Juniperus virginiana*, *Abies Nordmanniana*, *Pinus Laricio*, *Acer barbatum*, *Betula lenta*, *Hicoria alba*, *H. porcina*. The following trees have been rejected entirely:—*Pinus Jeffreyi* and *P. ponderosa*, *Acer saccharinum* (*dasyacarpum*), *A. macrophyllum*, *Hicoria sulcata*, *Fraxinus pubescens*. In place of the last it is now proposed to try *Fraxinus americana*.

Of all the new introductions, which consist principally of Conifers, the Douglas Spruce appears destined to occupy the first place. Nothing but praise is heard for it. The seed of none of the other exotic trees has been distributed so generally and so profusely in all parts of the country, from the north to the south, and none of the others has given such brilliant results. Immense quantities of the seed of this tree are now planted in all parts of Germany, and the supply is not commensurate with the demand. This splendid tree, therefore, has the best chance, if not of replacing our indigenous Conifers, at least of placing itself on a par with them in the composition of our forests. Its success seems to be assured in all parts of the kingdom, even in the far provinces of the north-east where the cold is extreme. Not particular as to soil, it thrives everywhere except in low peaty swamps and on the moving sands of our maritime provinces. The Douglas Fir is one of the best presents which have been made by the New World to Europe. The publication to which I have referred devotes itself especially to discussing the differences between the so-called Red and Yellow Firs, races which seem to mingle in this country in the general success of the species.

The Douglas Fir has for a close second the Sitka Spruce, which is also very promising, although it grows less rapidly than the Fir; and we expect to see this tree of the Pacific coast occupying some day or other immense tracts of the German Forests, especially in those peaty soils where the Douglas Fir refuses to flourish.

Lawson's Cypress, that ornament of gardens, is valued for the solidity of its wood and for the ease with which it adapts itself to soils of the most variable character. What I think will surprise you is the hardness of *Thuja gigantea* (Lobb's Cypress) in the extreme north, even to the very confines of that eastern Prussia which at Berlin has come to be considered the vestibule of Siberia. It is needless to say that, as it flourishes in that inhospitable region, the parks and gardens of Brandebourg, in a more temperate climate,



FIG. 53.—*CEDRUS ATLANTICA* (SEE P. 423.)

best of these is Autumn Compôte, which is fine and handsome, and of first-rate quality. Grand Duke and Archduke are both valuable late kinds, and being large and showy, as well as of high quality, are suitable for exhibition. Jefferson is a grand Plum, as it is good at all points, and one of the best introductions we have ever had among Plums. The Gages Late Transparent, Brahys, and Bryanstone are likewise desirable in any collection where a long supply of high-class fruit has to be kept up for culinary purposes, and any of the above-mentioned do well as standards or pyramids. Where quantities are required for cooking, Prince Englebert and Prince of Wales should be planted, to help supply the demand, as they are large and free-croppers; but Washington, though fine, is shy when grown as a standard, and is hardly good enough for a wall. One of the very best for this purpose, and for furnishing rich dessert fruit, is Kirke's, which should be in every garden; but to have it at its best, the tree must be on a good aspect, as I find there is a very great difference in the size and quality of the Plums gathered from walls having a south-eastern exposure

fungus affects the wood, making it brittle. This disease seems to be more common with trees in light than in heavy land. J. S.

THAMES BANK PEACH.

Perhaps I ought to apologise for trespassing upon space to refer to this fruit, as I have written previously, upon more than one occasion, with a view to draw attention to its merits. It is still, however, comparatively little known, although raised by Mr. Rust upwards of a quarter of a century ago. Why it has remained almost obscure for so long a time, when other varieties have become popular, that cannot approach it from various points of value, it is difficult to comprehend, unless it is that it has yellow flesh. Some cultivators, and consumers too, are prejudiced against yellow-fleshed Peaches, as others are to scarlet or white-fleshed Melons. Only the other day, I was recommending this Peach as a late variety, and on mentioning its type, received in reply:—"I do not like yellow-fleshed kinds." Some few years ago we found a difficulty in procuring trees of this variety, but Messrs. Geo.

are now enriched with the tall stems of this superb plant, which passes uninjured our most severe winters. Even this last one of abnormal severity and length has not affected it in the least.

Pinus Jeffreyi and *P. ponderosa* have been struck out from the list of trees available for planting in the neighbourhood of Berlin, although there is still some hope that *Pinus rigida* may succeed here, this being the species which was believed to furnish the Pitch Pine of commerce, which is, however, probably produced by *Pinus mitis* or by *P. palustris*. That this communication may not be too long, I must not speak in detail of all the species which have been tried. The Black Walnut and the Hickories rarely find here soil suited to their needs, while the Red Oak succeeds admirably. This last, however, has been naturalised here for a long time, its introduction dating from 1740. Up to the present time, however, it has been grown as an ornament of gardens, and not as an inhabitant of forests.

I cannot leave this subject without expressing my thanks to Mr. Schwappach for his admirable essay upon the results of these forest-experiments. I shall take an early occasion to speak of the results of the experiments with Japanese trees in Prussian forest-planting. *C. Bolle, Berlin, in "Garden and Forest."*

NOTES FROM THE TRANSVAAL.

AFTER a long silence, the spring-time suggests a few notes on the vegetation of this far-off land, in which our people are settling in increasing numbers every year. The past winter here—S. lat. 26°, elevation 6000 feet above sea-level—has been a very mild one; only 2° to 4° of frost has been noted, as compared with 12° last winter. No snow has fallen, and I have seen but the merest film of ice. As usual, we have had no rain the whole winter, which extends from April to July. Young Orange and Lemon trees have lost their tips; old trees are bearing good crops of fruit.

Stephanotis floribunda on a warm wall is doing very well; *Passiflora edulis*, *Tecoma venusta* and *Jasminoides* the same; *Gardenias* planted out in exposed places have lost their leaves only; *Heliotropes* were killed to the ground in some places; *Acacia lophantha* dead; Indian *Azaleas* seem quite hardy, and *Camellias* and *Abutilons* are now in flower.

Of *Eucalypti*, *E. amygdalina*, *cornuta*, *robusta*, and *globulus* stand the cold best. *Grevillea robusta* loses its tips only. *Acacia dealbata* is now enveloped in a cloud of golden bloom—a beautiful and welcome sight. Almonds and early Peaches put forth a few flowers, and appear quite indifferent to slight frosts.

First amongst the native flora to respond to the increasing power of the sun is *Buddlea salviaefolia*, with its beautiful pendent corymbs of lilac-white flowers, with their delightful honey scent. Beneath the long narrow leaves of *Moraea polyantha* begin to show, followed by yellow and brown-spotted Irid-like flowers. Along with it is an *Albuca* about 1 foot high, with a white cluster of blooms intermixed with the graceful feathery foliage of species of *Asparagus* clad in richest green—some climbing, others herbaceous. *A. plumosus* does not extend to this locality. A little later a splendid orange-crimson *Hemantus* suddenly appears, and by November the copious rains have called up a host of interesting plants.

A fine pale purple Composite, *Callilepis* sp., is well worthy of cultivation, and would make a good companion plant to the fine scarlet *Gerbera Jamesoni*. A small, but intense crimson *Striga* is quite common. This lovely little *Scrophulariad*, I believe, is a parasite on grass roots. That fine Composite, *Dicoma Zeyheri*, also grows amongst the grass; in size and colour it nearly resembles the Cape Everlasting Flowers (*Helichrysum vestitum*), but its rays are hard, prickly, and persistent. Beneath the shade of that very handsome shrub, *Rhamnus prinoides*, whose foliage reminds one of *Escallonia macrantha*, is found the

beautiful scarlet *Anomnthea grandiflora*; whilst fully exposed in the open we find *Babiana Bainesii*, flowers purple and white, sweet-scented; also the very handsome white and brown-flowered *Trichodesma physaloides*, as unlike a *Borage* as possible. I have observed a single colony of *Nymphæa stellata* with lighter purple flowers than the Natal variety. *Crinum capense* is sometimes met with, ranging in colour from white to deep rose and purple. We have a splendid rosy *Brunsvigia*, with bulbs the size of a football. The true *Richardia africana*, strange to say, is absent, but we have a nearly allied plant with small ivory-yellow spathes.

Around Pretoria, Heaths and Ferns are very rare. Amongst strange plants may be singled out a *Stapelia* with wonderful black, musk-scented flowers, and a white and black dotted *Gomphocarpus*. Epiphytic Orchids are absent; but *Bonatea speciosa*, or a variety very near it, is sometimes seen.

Amongst rocks a *Protea* is common; and a remarkable *Amaryllid*, *Vellozia* sp., with a stem 2 to 4 feet high, narrow, drooping grass-like leaves and lilac flowers.

The above imperfect list gives a faint idea of our very varied and interesting flora. The condition of the Transvaal is fairly prosperous. Our gold out-put is over 2 tons a month. In less than three years we hope to be connected with the Cape and Natal Railway system, by which the cost of living, which at present is high, will be reduced. May I add, for the information of correspondents, that having pitched my tent near that happy hunting-ground, the Magaliesberg, I trust to resume collecting shortly, after an interval of two years. *R. W. Allam, Pretoria, Transvaal, August, 1891.*

TREES AND SHRUBS.

ORNAMENTAL CRAB JOHN DOWNIE.

I HAVE received, from the Kuap Hill Nursery, a specimen of this extremely ornamental Crab, which is finer than I have ever before seen it. Mr. Anthony Waterer says it is one of the finest things he has in his nursery at the present time, and he thinks very highly of it. The shoot sent is about a yard long, and carries over thirty fruits, about the size of a Walnut. The fruit is conical, with a distinct nipple around the eye; the colour is yellow flushed with crimson on the side, and has quite a wax-like look. The stalk is slender and 1 inch long, so that the fruits hang down. The foliage is large and vigorous, which indicates a strong-growing tree. It must be a very ornamental tree for a lawn, though the temptation to a schoolboy may deter some from planting it in public places. The fruit is acid, but not astringent, and would make a good preserve, no doubt. It is now obtainable in most of the large tree nurseries. *W. G.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

THE FLOWER BEDS.—The continuance of heavy rain in many parts is almost as damaging to the flowers in the beds as frost would be, and it is advisable to pot up such choice varieties as Mrs. Pollock and Golden Harry Hoyer, planting in their stead Wallflowers, Arabis, &c., so that there shall be no blank spaces or beds. It is convenient when the weather admits of this method of procedure being followed, inasmuch as the necessary number of plants of the several sections of last year's striking can be boxed, removed, and preserved for another year. I may say that the verges and spaces of turf between the beds should be mowed before clearing and replanting them.

HARDY FERNERIES.—Examine hardy Ferns, and remove any leaves that may have become disfigured by thrip or other cause, but preserving all others; and pulling up weeds. Thin out the carpet of Ivy and Periwinkles where these plants have become too thick together. The mixture of the green, bronze,

and yellow fronds of the Fern are both effective and seasonable now.

WALKS.—Gravel and turf walks must be kept free from weeds, moss, and leaves, advantage being taken of moist weather to weed them, and roll the weeded walks directly after the work is finished. Smith's weed-killer is a simple, effectual, and economical preparation for destroying weeds and moss, but care is necessary in its use, lest it should come in contact with live edgings; and, owing to its poisonous nature, it should not be applied to walks or drives which are frequented by pigeons or poultry. This weed-killer should be used when the weather is dry, and at the rate of 1 pint to 4 gals. of water. One good dressing will keep the walks free of weeds and moss for twelve months, if not for a longer time.

WORK TO BE DONE: ALTERATIONS, PLANTING, ETC.—All ordinary work should be pushed on with, in order to proceed as soon as may be, with alterations and improvements, such as extending the ornamental grounds, preparing borders and beds for shrubs, &c., and the planting of the same, trenching and manuring the ground for herbaceous borders, and, where necessary, putting in drainage; preparing new beds and borders for Roses, and any other work of this kind. *H. W. Ward, Longford Castle, Salisbury.*

THE KITCHEN GARDEN.

FRENCH BEANS.—Plants in pits should now furnish a supply of pods, and where these are in heated pits there will be no danger from damp; on the other hand, when sun-heat is relied on, or that of dung linings, much care will be required in affording water, which should always be a few degrees warmer than the air of the frame, and the watering done in the forenoon, thus allowing time for damp to be dispelled before closing time. French Beans in warm pits will need frequent syringing to check red-spider. A sowing may now be made in pots, three-quarters filled with a compost of loam, leaf soil, and spent Mushroom-bed dung, placing six or eight seeds in each, and setting the pots in a warm place to germinate, and when the plants are 2 inches high, keeping them close to the glass. Remove two or three of the weaker plants in each pot, and, when the plants have made plenty of roots, top-dress with the same kind of soil, adding a little bone-meal. Sow more seed at intervals of three weeks, for a constant supply.

RUNNER BEANS.—Gather all the useable Runner Beans, spreading them out thinly on a cellar-raft, or other cool damp place. Pods for seed should be gathered and laid upon shelves, in an airy house, to get thoroughly dry.

POTATOS.—The main crops should now be dug up, first pulling up the stems and burning them. Choose, if possible, a dry day for the job, and carefully sort out all the diseased tubers from the sound ones. If roomy sheds are at command, it is good practice to put the crop therein for a few days prior to storing or clamping. Look over the stores of Potato sets, and remove any that may be decayed.

CAULIFLOWERS AND AUTUMN BROCCOLI.—Means must be taken to protect these vegetables from frost, which may be done by using a little bracken or clean litter. Another way is to gather the leaves together and tie them over the head. If too many are turning in at one time, lift and heel-in the plants on a north border, covering them with mats when frost threatens. I find that Cauliflowers, &c., keep fresher in this way than when they are hung head downwards in sheds.

YOUNG CAULIFLOWERS may now be planted under hand-lights on well-matured trenched land, in the warmest situation in the garden, and unless the weather should be very wet and cold, the plants may be constantly left uncovered for the greater part of the present month. During heavy rains, put on the tops, but tilt them at the side. Prick out later-sown plants into cold frames, at a distance of 4 inches apart. *C. J. Waite, Glenhurst, Esher.*

THE HARDY FRUIT GARDEN.

The gathering and harvesting of Apples and Pears now demand attention from the gardener, many of the midseason varieties of both being now quite ready. Late varieties should be left on the trees for some time yet, as these will not only increase in size by so doing, but acquire a much finer flavour, and keep with little or no shrivelling. Midseason fruits should be gathered if the seeds have become

brown, and the fruits part freely when but slightly turned upwards. Too much care cannot be taken in handling the finest fruit, always placing it in a single layer in the basket, and keeping bruised specimens apart. There should be three different sizes made, the largest for cooking purposes, the medium and best-coloured for dessert, and the small and damaged fruit for immediate use. If the wood of which the fruit shelves or racks are made is free of all smell of turpentine, and clean, place the fruits in a single layer; clean paper or straw, are better than hay on rough boards, as they impart no bad flavour to the fruits. The gathering should take place when the fruit is perfectly dry, and it should be afforded plenty of air all day and night till the sweating period is past. The Apple keeps best when stored in a very cool room, so long as frost does not penetrate it; and in the case of large quantities, the fruit may be placed several layers thick; Pears should, whenever possible, be kept to one layer, and in a dry place, with a higher temperature than the Apple needs, or the flavour of the fruit will suffer.

BLACK CURRANTS.—Where the bushes are very crowded, cut out many of the older branches, reserving much of the young and fruitful wood. With yearly attention, Black Currant bushes may be kept in a fruitful condition for many years, the berries being larger and more plentiful. The same may be said of Gooseberries, which should be pruned in a somewhat similar manner. Cuttings of bush runners may now be made and put in, which will root with certainty and make nice bushy plants the first year. In putting in the cuttings or slips, see that they are made very firm in the soil, and the bark is not allowed to shrivel previously.

STRAWBERRIES.—These have made fine growths hereabouts, and the crowns promise well for next season. Keep the beds free from weeds, the hoe being applied if no mulching has been used. Young plants put out early should be freed from runners, and the beds put into neat order. *H. Markham, Merce-worth Castle, Maidstone.*

PLANTS UNDER GLASS.

THYRSACANTHUS RUTILANS, LIBONIA FLORIBUNDA, ERANTHEMUMS, AND LINUMS—These plants, which may have been growing in cool pits or frames, should now be removed to warmer quarters; and as their pots fill with roots, afford them clear manure-water at weekly intervals, and be careful not to let the plants suffer for want of water.

GESNERAS which have been properly grown, will now be found very useful in the decoration of warm houses, the foliage in the case of *G. zebrina*, and others velvety in texture, making nice effects when the plants are intermixed with others. Fumigate them frequently in a light way to keep aphid and thrips in check, both of which are very partial to them; and to have the foliage in the best possible condition, it should not be syringed at any period of growth.

CACTUS EPIPHYLLUM TRUNCATUM.—These are very useful plants for the autumn and early winter, and where a sufficient stock is at hand, a portion of it may now be placed in a warm house, so as to produce blooms during the last half of the month of November. A succession Pine-stove or the Intermediate-house will suit them.

EUPATORIUM RIPARIUM AND E. WEINMANNIANUM.—Both of these plants will be showing for bloom, and should be placed in some light airy structure, so that the bloom may not get damaged by frosts or heavy rains. Eupatoriums flower best when pot-bound, and as they root very freely, it is essential for the preservation of the foliage that they should not lack water at any time; and occasional doses of manure-water are beneficial.

CHRYSANTHEMUM FRUTESCENS.—By putting in a batch of cuttings at the present time, this plant will make useful decorative material in the months of spring. Cloth of Gold (yellow), and *C. Halleri maxima* (white), are very good varieties for pots. In choosing the cuttings, select the strong shoots with short joints; at the same time, be careful that the base of the cutting is tender, or it will not quickly root. When required for growing in pots, I prefer to strike them singly in small pots, in a compost consisting of sandy loam. They are placed in a cool frame, and kept close till roots are formed, which will be in two to three weeks after insertion. The best place for wintering these plants is a low pit, in a temperature that does not fall below 45°. Keep them close to the glass, or draw-

ing will take place; and when well-rooted, pinch out the leading point, so as to form the framework of the future plant. Shift into 5-inch pots when they have commenced to grow, and when 2 or 3 inches of growth have been made, again stop the shoots, which will give the required number to furnish the plants by the time they receive the final shift. Afford plenty of air on all favourable occasions; and keep them free from aphid, wetting them by frequent syringing, or failing this, dip the plants in some kind of insecticide.

CHRYSANTHEMUMS.—Preparations should now be made for housing the plants, in view of the imminence of frost, and whatever kind of house the plants are to occupy, and especially if other plants occupy it that are liable to be infected with aphid, it should be well fumigated, and the glass cleaned. Before housing them, have each plant examined, and should there be the slightest trace of mildew on the undersides of the leaves, lay them on their sides, and syringe the foliage with a mixture of lime and sulphur, thoroughly wetting all parts; see also that the drainage is satisfactory, and all decayed leaves as well as side-shoots picked off, and all dirt washed off the pots. The watering of the plants should be done early in the day, and water should not be slopped about the house; admit plenty of air on all favourable occasions. *R. Milner, Penrice Castle, Swansea.*

THE ORCHID HOUSES.

THE COOL HOUSE.—Plants of *Oncidium Marshallianum* which may have large growths, will require to be well ripened, or they will not afford satisfactory flower-spikes; and to do this, place the plants in the full sun, and do not allow them to become dry. *O. varicosum* and *O. Rogerii*, which may have been grown in the cool-house in summer, will now open their flowers better if the plants receive a little more heat. The Intermediate-house suits them at this season, and during the winter, *O. macranthum* is one which may receive the coolest treatment. Some four or five years since, I called upon an amateur at Dulwich one frosty morning, and to my surprise I found the Orchid-house door standing wide open, and just inside the house, on one of the stages, was standing the grandest lot of *O. macranthum* which I ever had seen—above five dozen large plants. Strong and healthy plants should now be showing their flower-spikes, and it should be remembered that these form tasty morsels for slugs, and great care is needed to prevent injury, or the work of a whole year will be lost in a night. Fresh traps should be laid nightly, and examined at night by lantern-light; fresh slices of Potato, Carrot, or Turnip are good traps for slugs, as is moistened bran laid about the house in small heaps.

Few thrips will make their appearance at this season amongst the *Odontoglossums*, but aphid must still be searched for, or they will soon ruin the appearance of the tender growth. In some *Odontoglossum*-houses the plants are placed on a level stage; this style of arranging them should be avoided, by placing the plants on small elevated stages or inverted flower-pots, and not crowded, unless it be newly-imported plants, which may be arranged thus for a time. Any *Odontoglossums* requiring it, and that are not yet repotted, should be finished off forthwith. *Disa grandiflora* should be repotted without delay, new growth and roots forming as soon as the old growth dies. After repotting the *Disas*, place them in a frame, and cover with mats on cold nights. *A. G. Catt, Park-field, Hallow.*

FRUITS UNDER GLASS.

MELONS.—Melon growing for want of sunshine, has been difficult in some parts this year, and the fruits without much flavour. Great attention will now be required to ripen those fruits which remain. Last season it was stated in these columns that good-flavoured Melons could be cut in February, but I have never been so fortunate as to secure good ones then, or even in the month of October. Canker at the root is troublesome, and more so in beds than in pots, and it must be guarded against by employing powdered quicklime as soon as observed. For later fruiting large pots are best, the plants suffering less from the malady. A steady and sufficient bottom-heat at this season cannot be done without, and when pots are used a small quantity of well-prepared fermenting material should be placed around them, to be added to as required. The temperature by day may range from 75° to 80°, and 5° to 10° lower at night; the watering of the plant being performed

with care, the bine kept thin, and a little air admitted daily.

CUCUMBERS.—Efforts should be made to get the trellis covered with shoots and foliage. If fruits are required in the winter, the plants should not carry any fruits for some time to come; and when fruit is wanted at this season it is better practice to grow a few plants for the purpose, throwing them away at the end of the year. The winter plants may now receive a top-dressing of light rich soil, keeping the foliage from getting crowded. Syringe the plants daily in bright weather, and keep aphid, &c., in check, for if these are allowed a footing, they are difficult to be got rid of, and the plants get into bad condition in consequence. The day temperature may range from 70° to 80°, running up to 90° by sun-beat, and with abundant atmospheric moisture. The night temperature may be kept at 70°. Ventilate very sparingly in cold weather, keep the bottom-heat equable at about 85°, and avoid the use of fresh stable-manure, but prepare it by frequent turning.

TOMATOS.—The plants for winter fruits are now placed under glass—these are in 10-inch pots, and they have fruits set, and much bloom; the latter will require henceforth to be set artificially. Keep the plants near the glass in a dry airy house, and cool, for a time. In November greater warmth may be afforded the plants. Winter Tomatos require very little water if they are planted out, and only limited supplies while standing in pots. The shoot should be kept thinned, exposing the bloom to the sun. Keep a free circulation of air in the house, as a close moist temperature is often the forerunner of disease. Should green or white fly, or mildew appear, fumigate and sulphur the plants as may be required. Painting the pipes with sulphur and lime will do much in keeping mildew at bay. Cuttings in 60's should be potted, and kept near the light. These latter will be valuable to succeed the winter fruiters. *G. Wythes, Syon House, Brentford.*

THE APIARY.

THE PAST SEASON.—The year 1891 may, on the whole, be classed as an average one in regard to the yield of honey. Little or no surplus was produced from fruit, Hawthorn, and other early-flowering trees, as was evidenced by the almost entire absence of this year's honey at the spring shows; but bees in near proximity to Clovers, Lime trees, &c., were able to make up for time lost earlier in the season. Few complaints have been made of honeydew having been gathered to any extent, no doubt owing to the copious rainfall, which would have the effect of keeping the deposit washed from the surface of the leaves, aphids having been very prevalent, especially on Plum trees. Honey of specially good quality has been exhibited at the leading summer shows throughout the kingdom, and it is therefore safe to assume from this data that the general excellence of crop has been up to the mark. Heather honey has been conspicuous through its absence from the later shows.

NEW APPLIANCES.—Bee-keepers who have given the horizontal super-clearer or bee-escape a trial this season, speak of it in terms of the highest praise, and to be able to go to a hive in the morning, quietly lift up the section crate, under which place this appliance, and find that by the evening most if not all the bees have left the sections, which can then be removed without disturbance, is a great boon. Swarm catchers or self-hivers have met with but varying success at present; but it is evident that the idea can be improved on, so as to produce an article that will not fail to accomplish the desired result. A new machine has just been invented for extracting heather-honey from the comb, which is said to answer admirably. It is composed of vertical plates, with grooves about a quarter of an inch deep, and the same distance apart; a screw with a handle runs through the ends on each side for screwing them together. In operation the press is laid horizontally on a box lined with tin, which has two bars running across level with the top. The combs are cut out of the frames, and are wrapped in straining calico without being uncapped, and a piece of woven wire, about twelve meshes to the inch, is placed on each side. They are then placed between the grooved plates, and pressure brought to bear by turning the handles. The woven-wire prevents the combs from being forced into the grooves, and the pressure exerted forces the honey through the calico, so that it runs quite clear into the receptacle below, leaving behind an almost dry sheet of wax. *Expert.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	Oct. 12—	Eastbourne Horticultural Society.
THURSDAY,	Oct. 15—	United Horticultural and Benefit Society: Anniversary Dinner, Cannon Street Hotel.

SHOWS.

TUESDAY,	Oct. 13—	Manchester Royal Botanic Society: Fruit Show and Congress (four days).
WEDNESDAY,	Oct. 14—	National Chrysanthemum Society, at the Royal Aquarium (three days).

SALES.

MONDAY,	Oct. 12—	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs at Protheroe & Morris' Rooms. Nursery Stock, at Woking, by Messrs. Protheroe & Morris (six days).
TUESDAY,	Oct. 13—	Dutch Bulbs, at Protheroe & Morris' Rooms. Orchids collected by Count Horace de Choiseul, at Protheroe & Morris' Rooms. Valuable Dendrobiums, at Protheroe & Morris' Rooms. Nursery Stock, at Cole Hill Nursery, Fulham, by Messrs. Protheroe & Morris.
WEDNESDAY,	Oct. 14—	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Azalea indica and A. mollis, and Camellias, at Protheroe & Morris' Rooms.
THURSDAY,	Oct. 15—	Established Orchids, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 16—	Valuable Dendrobiums, at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 17—	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—51° 2.

The Chiswick Conferences.

Our conditional statements last week as to the prospects of the Show of Conifers and Asters at Chiswick, were unfortunately only too well justified. The exhibition, whether of Asters, Sunflowers, or Conifers, is remarkably good, and very extensive; but the weather—on the Tuesday and Wednesday—well, we have no adjective sufficiently forcible to express our disgust. We can only commiserate the officials of the Society and the exhibitors who did so much to render the Exhibition and Conferences successful, and to induce the public to visit the old garden, with its noble vinery, its abundant fruit crop, its trial grounds, and other features of interest. But not even the rain could damp the zeal of the exhibitors, and, as we have said, a fine show was got together.

If only on account of variety, the Conferences at Chiswick this week have been very remarkable. As they are still in progress at the time of writing, we can say but little of them in this place, but we may refer to the report in another column.

The groups of living plants are arranged in the open air in a simple but pleasing manner, and one very appropriate for the purpose. Messrs. WATERER and VEITCH & SONS occupy the centre with very choice, well-selected specimens. The sides are occupied with fine collections from Messrs. G. PAUL & SONS, DICKSONS of Chester, W. LEE & SON, CUTBUSH, BARRON of Elvaston, JEFFRIES of Cirencester, and others. We must refer to another column for the details of these beautiful collections, and for the plan of arrangement adopted. (See fig. 57, p. 435.)

The cut specimens are extremely numerous, and come from all parts of the kingdom. Very cordial thanks are due to Mr. DUNN and our Scottish friends, who have sent so many specimens, with details as to the aspect and soil upon

which the trees grow, as well as their heights. The collection includes specimens from H.M. the QUEEN; the Royal Gardens, Kew, which sends nearly 500 kinds; the Royal Botanic Garden, Edinburgh, and the noblemen and gentlemen mentioned in our last issue. The deep colour and robust growth of the Scottish specimens, as well as their historic interest, are very remarkable, though the number of cones is relatively small. Indeed, the production of cones generally throughout the country this season seems comparatively limited. Ireland, where the Conifers have, in our experience, a richer colour than elsewhere, is represented by collections from Mr. SMITH-BARRY, of Pota and Mr. ACTON of Rathdrum. So numerous are the cut specimens, that after nearly filling the whole of the large vinery, one large tent and one smaller one, three long benches had to be erected for their reception in the open air adjacent to the large tent.

In the competing classes, a Veitch Medal and £5, the amount of the 1st prize for a collection of fresh cones and branches with foliage, was awarded to the Dowager Marchioness of Huntley (gr., Mr. Harding), among whose specimens were



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cones of the noble *Pinus macrocarpa*, P. Jeffreyi, with its dark-coloured cones; *P. ponderosa*, P. muricata, *Cedrus Deodara*, *C. atlantica*, *Abies Webbiana*, and *Torreya Myristica*, with many others.

The 2nd prize, a Silver Knightian Medal, was allotted to Lord WIMBORNE (gr., Mr. CRASP). In this collection were cone-bearing branches of *Cunninghamia sinensis*, *Sequoia gigantea*, *Abies orientalis*, *Pinus insignis*, *Abies Pinsapo*, *Arancaria imbricata*, and several others.

The famous Dropmore collection included several fine cones of *Araucaria imbricata*, with male catkins also; cone-bearing specimens of the very beautiful *Tsuga Brunouiana*, the only specimen so far as we saw in the exhibition; *Picea sitchensis* (= *Menziesii*), *Cedrus Deodara*, *Pinus Jeffreyi*, *P. densiflorus*, &c. It seemed rather a pity that Mr. HERRIN did not enter into the competition, as he must infallibly have taken a good place.

Among the cut specimens shown by Mrs. FORD, of Pencarrow, are fruiting specimens of *Abies firma*, the first that we have seen on English-grown trees.

As to the Conferences, Asters and Sunflowers formed the subject of discussion on the first day.

We are precluded from reporting the proceedings in full, as they will be published hereafter in the *Journal* of the Society. It must suffice to say, that the introductory address of Mr. BAKER on Tuesday was devoted mainly to the botanical features of the two genera, *Aster* and *Helianthus*, and to their geographical distribution. The paper contributed by Professor GOODALE naturally covered pretty much the same ground, and included a general review of the latest opinions of Professor ASA GRAY on the subject. Mr. WOLLEY DOD followed, with a practical paper on the selection and cultivation of the Michaelmas Daisies, the results of hybridisation, and other cognate subjects.

Mr. DEWAR came next, with a paper on the genus *Helianthus*, which, for garden purposes, he divided into early, mid, and late varieties. Mr. DEWAR's paper was marked by great critical acumen, the outcome of patient study and observation. It may not be possible when the details are before us, to agree with all his conclusions, but there can be nothing but respect for the manner in which he has arrived at them. In the course of this paper, two singular circumstances which are not generally known were mentioned, one, that *Helianthus multiflorus*, see fig. 51, probably the commonest of all the perennial Sunflowers in gardens, is unknown in a wild state, so that the origin of the species is so far quite unknown. The other point is that, though so common, and presenting so many varieties, it rarely produces perfect fertile seeds. In the course of the discussion on this paper, Mr. WOLLEY DOD mentioned that he had raised a hybrid between *Helianthus cucumerifolius* and *H. annuus*, and that the resultant seedlings belonged, in feature, half to one, and half to the other parent. Mr. JENKINS then read a suggestive paper on the cultivation of these plants.

On the whole, the conference afforded an excellent example of the reciprocal aid that botanists and horticulturists can give to one another. It was rendered abundantly clear that cultivation under the eye of an experienced botanist is calculated to be of very great service in enabling us to appreciate the extent of variation, the limits of particular forms, and the constant as distinguished from the accidental characters of particular species. From a purely horticultural point of view, cultivation enables the gardener to select those he likes best, or which are best adapted for his purpose, and to reject others perhaps equally interesting botanically, but less valuable for decorative purposes. From this point of view we cannot express too strongly our sense of the value of Chiswick as an impartial trial-ground; nor can we too earnestly press on the Council the desirability of developing the resources of, and enhancing the utility of, the old garden.

The Conifer Congress on Wednesday was opened by Dr. MASTERS, who, in his opening address alluded to the many points of interest in the group, their ancestry, their relations to Lycopods and Selaginellas, their mode of growth, their physiological peculiarities, their beauty and stature, &c. Dr. MASTERS, both on scientific and on practical grounds, advocated the comparative study during growth, organ by organ, of the various species, giving illustrations incidentally of the valuable results which would thus accrue alike to the cultivator and the botanist.

Adverting to the introduction of Conifers from other countries, Dr. MASTERS stated that, with the exception of the Scotch Pine, the Yew, and the Juniper, no species of Conifer was wild in this country. Our earliest records of the introduction of plants did not go beyond the sixteenth

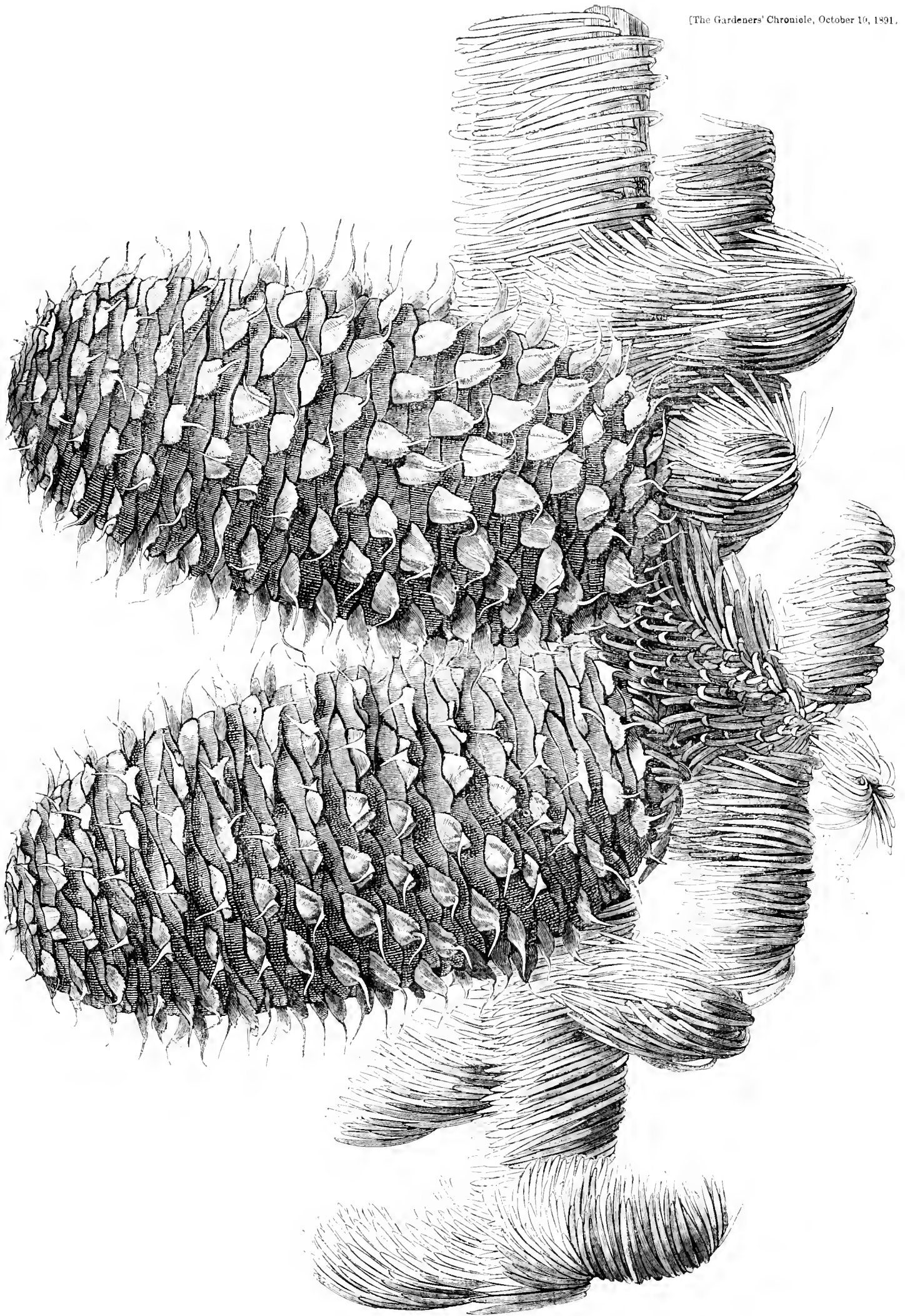


FIG. 55.—ADIES MAGNIFICA, VAR. SHASTENSIS (THE SHASTA RED FIR), SCALES, RICH PURPLE; PROJECTING BRACTS, GOLDEN BROWN. (SEE P. 430.)

century. The Pineaster was known here in 1596, the Larch in 1629, and the Lebanon Cedar in 1664. JOHN EVELYN was credited with the introduction of the so-called Cedar (*Juniperus virginiana*). From 1827 to 1833, DOUGLAS, whose portrait is given in another column, startled the botanical and horticultural world by the number and importance of his discoveries in North West America. The Douglas Fir, the Lambert Pine, *Abies amabilis*, *A. grandis*, *A. nobilis*, and the Menzies Spruce, were among the introductions of DOUGLAS. To the Royal Horticultural Society it must always be a source of legitimate pride that these magnificent discoveries, like those of HARTWEG and FORTUNE, at a later date, were made by officers of the Society, and that the plants were originally distributed from the Society's garden. In this connection, it was interesting to note that, in introducing the *Arancarias* from Chili and Australia, the *Sequoias* and *Libocedrus* from the North-West Pacific, and the allied *Cycads* from South Africa and Australia, we were but bringing back plants that were once native to our own soil, while the Ginkgo was instanced among several others as a survival from geologic times; and, as such, is as remarkable as would be the appearance, in a living state, of the "extinct animals," models of which may be seen in the grounds of the Crystal Palace.

Alluding to the economic part of the subject, Dr. MASTERS referred to the enormous importance of the order as supplying timber and other products of everyday use, and hoped that one result of the Conference would be the accumulation of evidence concerning the economic value of these introductions, especially of some of the most recent ones. The value of the Lebanon Cedar as a decorative tree, and of the Weymouth Pine as a timber tree, was admitted, but in regard to others there was still doubt. Had not the Deodar disappointed expectations? but was not the Douglas Fir likely to be of great value? Again, considering the distressing failure of the Larch in many situations owing to attacks of a fungus, had we among new-comers any efficient substitutes? He ventured to think that there were several, as Lobb's Cypress (*Thuja gigantea*), the Lawson Cypress, the red-wood (*Taxodium sempervirens*), the Nootka Cypress (*Thujopsis borealis*), the *Abies brachyphylla*, and some others of Japanese origin. It was to be feared, however, that many of the Conifers, especially the Pines, were too precocious in this climate, and attained their full span of life much sooner than in their native land.

Mr. H. J. VEITCH read a paper on Japanese Conifers, in the course of which he alluded to the climatal features of the islands, and remarked that there were in Japan no fewer than forty-one species of Conifers, many of which had been discovered and introduced by JOHN GOULD, VEITCH, and CHARLES MARIES.

Papers were also read on "Conifers as Specimen Trees and for Landscape Gardening," by Mr. G. NICHOLSON; on "Conifers for Timber and in Plantations," by Mr. A. D. WEBSTER; an excellent practical summary of the timber value of certain trees, by Mr. CHARLES HERRIN; other papers were deferred till Thursday. The exhibition, in connection with which the Conference is held, will remain open till Saturday evening.

ABIES MAGNIFICA, VAR. SHASTENSIS (THE SHASTA RED FIR). This variety forms a large, almost exclusive, forest on the high plateau of lava thrown out by Shasta in former times. A few trees are scattered also over the high southern slopes of Mount Eddy, Scott, and the Trinity peaks, at an

elevation of 6000 to 8000 feet. The illustration of two standing Firs, which accompanies this report, was taken from a photograph of Horse Camp, near the timber line of Shasta, before sunrise. The peculiarity of this variety of Fir, aside from its locality, is connected entirely with the fact of its cone, bracts becoming long and protruded, a half to a full inch between the scales, rendering the large purple cone, thus decked out with tasseled fringes, a most beautiful object. This feature of the cone caused this tree to be considered as identical with Douglas' Bracted Fir, described, and it was so classified as late as 1880, in *California Botany*, but is now known to be clearly distinct. The trees are very large and lofty, though not so immense and high headed as in the typical southern form, but they become, on the southern slopes of Shasta, a dark gloomy assemblage of massive black trunks, coloured on the north side from base to the limbs with bright yellow lichen, or tree moss, the lower limbs draped here and there with long, sweeping festoons of black filmy lichen, giving a funereal aspect to the whole scene, scarce relieved by the twitter of a red squirrel, the long wailing note of a woodpecker, or the occasional cry of a bald eagle. Too elevated to be yet reached by the avarice of man, but little is known of the qualities of this Red Fir, but it is probably not unlike its southern relatives. *Report of the Californian State Board of Forestry, 1889-90.* [We believe this to be the superb form figured from the Cranston Nurseries as a form of *A. nobilis* or *magnifica*, and of which we now reproduce the illustration, fig. 54. Ed.]

NATIONAL AURICULA AND PRIMULA SOCIETY (SOUTHERN SECTION), NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The Annual General Meeting of the above Societies will be held, Mr. J. DOUGLAS, the Hon. Secretary, informs our readers, by permission of the Horticultural Club, in their rooms at the Hotel Windsor, Victoria Street, at 4.30 P.M., on Tuesday, October 27. The business of the meeting will be to elect the office-bearers and committee for the ensuing year; to receive the reports of treasurer and secretary; to arrange for the exhibitions of 1892; and transact any other business which may be deemed necessary. The annual meeting presents a favourable opportunity for the election of new members.

GREENHOUSE RHODODENDRONS AT MESSRS. J. VEITCH & SONS.—In the house devoted to these almost perennial-flowering plants at the Royal Exotic Nurseries, Chelsea, about 180 fine open trusses may now be seen, all shades of colour. Some of them are of such an exquisite blending of rose-yellow and scarlet, that their colour is difficult to name. The new crosses with *R. multicolor* are bringing in some lovely winter flowers on compact plants, among them being rose, crimson, and bronzy-orange. Of the larger kinds, especially beautiful are Princess Christian, yellow with red stamens; Ajax, a noble salmon-red with dark stamens; lateo-roseum, pink with yellow showing through it; *No. Plus Ultra*, scarlet; President, yellow with a bronzy-red tinge over the segments; *Aspasia*, light chrome-yellow over white ground, and with light stamens; *Ophelia*, pink with crimson anthers; Lord Wolseley, orange-scarlet; Maiden's Blush, blush-white; and Princess Alexandra, white.

DEVON AND EXETER GARDENERS' ASSOCIATION.—A meeting of gardeners and friends of horticulture was held in the City Guildhall, Exeter, on the evening of Monday, October 5, to consider the advisability of starting a Mutual Improvement Association. Mr. Alderman K. ROBERTS occupied the chair. Various letters were read from gentlemen who were unable to attend, one and all of whom were in favour of the scheme, and several persons present in the hall spoke of the great advantages that would accrue to the horticulturists of Exeter and neighbourhood if the scheme could be brought to fruition. On the motion of Mr. HOPE, seconded by Mr. LOCKE, it was decided that the subscription from head gar-

deners should be fixed at 2s. 6d., under-gardeners 1s. 6d., and honorary members 5s. per annum. It was resolved to hold the meetings on Wednesday evenings during the winter months, at 8 o'clock, the place of meeting to be left for the committee to arrange.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—At a meeting of the above, held on Tuesday, Sept. 29, a paper was read by Mr. R. DEAN, Ealing, on the "Life History of a Flower," the one chosen for illustration being the florist's Tulip. The subject was illustrated by coloured diagrams of the various parts of the flower, and was attentively listened to throughout.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting held on September 12, 1891, the Floral Committee of the above Society granted the following:—

First-class Certificates.—To Mr. J. Th. Van Den Berg, jun., Jutfaas, for *Begonia tuberosa erecta narcissiflora* (seedlings, 1891); collection of cut flowers from *Begonia tuberosa erecta*; collection of cut flowers from *B. t. e. duplex*; collection of cut flowers from Dablia, with single flowers in the varieties: Favori, Madame Coquet, Madame Chauvé, Contraste, and Souvenir de Madame Chrétien. To Messrs. Groenewegen & Co., Amsterdam, for *Cactus Dahlia H. Cannell* (new plant); *Dahlia* with single flowers, Scarlet Dwarf (new plant); *Pteris tremula Smithiana* (new plant); *Pteris Victoria* (new plant). To the Botanical Garden, Amsterdam, for a collection of *Drosera*, consisting of *Drosera binata*, Labill; *D. capensis*, L.; *D. dichotoma*, Sm.; *D. intermedia*, Hayn.; *D. longifolia*, L.; *D. rotundifolia*, L.; and *Drosophyllum lusitanicum*, Link. To Messrs. E. H. Krelage & Son, Haarlem, for *Gladiolus gandavensis* var. Bruca (new plant); *G. g.* var. Doctear Bailly (new plant); *G. g.* var. Erigone (new plant); *G. g.* var. Glaive de feu (new plant); *G. g.* var. Jubilé (new plant); *G. g.* var. Mimos (new plant); *G. Nanceianus* var. Comte Horace de Choiseul (new plant); *G. n.* var. Dr. H. P. Walcott (new plant); *G. n.* var. Massena (new plant); *Gloxinia hybrida grandiflora* var. Gloire de Haarlem (new plant); *Kniphofia* hybr. var. Franz Büchner (new plant). To Messrs. Ant. Roozen & Son, Overveen, for *Begonia tuberosa* Above All (new plant); *B. t.* Le Progrès (new plant); *B. t.* Mr. J. K. Budde (new plant); *B. t.* Mr. Ant. Roozen (new plant); *B. t.* Miss North (new plant); *Cactus Dahlia Lockenkopf* (new plant). To the Zoological Garden, Rotterdam, for *Pteris amplifrons* (new plant). To Mr. O. J. Quintus, Groningen, for *Vriesia obliqua* (*V. retroflexa* × *amethystina*) (new plant). To Mr. A. G. M. Richard, Naarden, for *Carex gracillima* (insufficiently-known plant). To Mr. J. H. Schober, Putten, for *Cattleya virginialis* (new plant). To Mr. Jac. Smits, Naarden, for a collection of cut flowers from *Begonia tuberosa*. To Mr. C. G. Van Tubergen, jun., Haarlem, for *Nerine Sarniensis* var. venustum (new plant); *Colchicum giganteum* (new plant).

Second-class Certificates.—To Messrs. Groenewegen & Co., Amsterdam, for *Adiantum* hybr. (new plant); *Asplenium caryotefolium* (new plant). To Messrs. E. H. Krelage & Son, Haarlem, for *Gloxinia hybrida Kaiser Friedrich* (new plant); *Zephyranthes candida* Herb. var. major (new plant). To Messrs. Ant. Roozen & Son, Overveen, for *Anemone japonica* var. cristata (new plant); *Begonia tuberosa* hybr. *Cameilia* (new plant); *B. t.* hybr. Mr. Gladstone (new plant); *B. t.* hybr. Nelly (new plant); *B. t.* hybr. Orange géant (new plant); *Cactus Dahlia* hybr. *Lilian Aberly* (new plant); *Chrysanthemum* hybr. *Anatasio* (new plant).

Vegetable and Fruit Committee.—A Second-class Certificate to Mr. J. De Waard, Groningen, for Beans (*Phaseolus multiflorus*) with white flowers (insufficiently known).

—The Council of Administration of the above have nominated Dr. ROBERT HOOG and Dr. MAXWELL T. MASTERS honorary members of the Society, in recognition of their long and useful services to botany and horticulture.

PELARGONIUM SOUVENIR DE MIRANDE.—A number of plants of this pretty variety now in flower in McArthur's nursery, Maida Vale, W., show how useful and handsome it is. It is of the habit of Vesuvius, and seems equally free to flower at any season of the year. The two upper petals of the flower are white in the lower halves, and salmon-scarlet at the tips, or outer halves. The other three petals are salmon-scarlet, with a white ray at the base, which extends about a quarter of the length of the petal, and has two or three light crimson lines in it. The backs of the flowers are nearly white. There is a quaint Orchid-like look about the flower, which is of a very charming tint.

THE VALUE OF NITRATES AND AMMONIUM SALTS AS PLANT-FOOD.—An investigation has recently been conducted by HERR E. LAUSENT into the value of the nitrates and the salts of ammonium as food for plants. He experimented chiefly with nitrate and sulphate of ammonium, the nitrates of potassium and sodium, the nitrite of potassium, and the phosphorus salt of ammonium. Potassium nitrite was discovered to be distinctly poisonous, as also is nitrate of ammonium, if the solution be of an acid character. With green plants in "water-culture," the roots of the so-called "ammonia-plants" were found to be more active when they were fed with the salts of ammonium; but, on the other hand, the roots are shorter, and do not ramify so much when the plants are treated with solutions of the nitrates. It is curious to observe, that when the plants are grown in soil, they thrive better when watered with weak solutions of the nitrates.

THE NITROGEN COMPOUND EVOLVED FROM SOILS.—Clay soils that are kept moist gradually lose nitrogen in the form of volatile products, but if the same soil is kept dry, the loss, although quite recognisable, is very much smaller. The nitrogen evolved in the form of volatile nitrogen compound is greater than that evolved at the same time in the form of ammonia—a result contrary to that obtained with vegetable soils. MONS. NORTHELD, to whom these researches are due (*vide Comptes Rendus*, cxiii., p. 195), is of opinion that the evolution of volatile nitrogen compounds is probably intimately connected with the life of microbes or low vegetable organisms existing in the soil.

TIMBO.—This is the name given in Brazil to several plants, such as *Serjania cuspidata*, St. H.; *Serjania lithalis*, and *Paullinia pinnata*, of the order Sapindaceæ; and *Tephrosia toxicaria*, and *Physalis heterophylla*, of the order Leguminosæ, all of which are used by the natives for stupefying fish. A decoction of the root is preferred, as affording the more powerful poison. Recently, the poisonous principle common to all these plants was isolated by HERR F. PFARR, who has named it Timbôn; it seems to be a nerve poison of the toxine class.

THE GENUS PÆONY.—DR. E. HUTT has published in Dr. ENGLER'S *Botanische Jahrbücher* for 1891, a monograph of the species of this genus. Dr. HUTT recognises fourteen species and numerous varieties, but appears to have overlooked Mr. BAKER'S monograph published in our columns, as well as the figures given.

EMIGRATION.—The recent circular issued by the Emigrant's Information Office, 31, Broadway, Westminster, S.W., informs intending settlers that in Australasia there is a demand for men who understand pruning fruit trees, Vine-growing, and market gardening, and such persons will, under certain conditions, get free or reduced passages to Queensland and Western Australia. In South Africa, Cape Colony, and Natal, fruit growers, with some capital, will find good openings. It has been found necessary to publish special warnings against emigration to Brazil, and, under present circumstances, to the Argentine Republic also. Intending emigrants to those countries, or to Chili, are again strongly advised not to go at the present time. Further and very recent information confirms the cautions already given.

THE PLUM HARVEST IN BOHEMIA.—In Bohemia, as we learn from a correspondent at Schlan (September 17), in consequence of the long-continued fine warm weather, the Plums have become well ripened, and they will bear comparison with the best Bosnian products. Bohemia, owing to its extensive cultivation of the Plum, and its cheap transit rates, will be in the position to sell its products at very reasonable prices in the neighbouring countries. In the Elbe Valley, the drying of the fruit has begun, and in the course of eight days, it will become general throughout the country. *Moller's Deutsche Gärtner Zeitung*.

DISTRIBUTION OF PLANTS.—The Commissioners of Her Majesty's Works and Public Buildings intend to distribute this autumn, among the working classes and the poor inhabitants of London, the surplus bedding-out plants in Hyde and the Regent's Parks, and the pleasure gardens, Hampton Court. If the clergy, school committees, and others interested, will make application to the Superintendent of the park nearest to their respective parishes, or to the Superintendent of Hampton Court Gardens, they will receive early intimation of the number of plants that can be allotted to each applicant, and of the time and manner of their distribution.

FERTILISER FOR STRAWBERRIES.—M. ZACHAROWICZ has been experimenting on certain varieties of Strawberries in the South of France, with reference to their culture in the open air, or under grass, and with and without manure. The six sorts experimented on, as regards earliness and productiveness, were:—1, Crescent Seedling; 2, Tonkin; 3, Laxton's Noble (translated "La Noble Laxton"); 4, Victoria; 5, Marguerite Lebreton; and 6, Le Caprice. The soil in which they are grown is a calcareous loam, rich in phosphoric acid and nitrogen, moderately so in potash. Laxton's Noble and Crescent Seedling do best in frames. Nitrogenous manures are of little service comparatively, but sulphate of potash, mixed with superphosphate of lime, give the best results. In the open air, Crescent Seedling, Laxton's Noble, and Caprice, grown without manure, were the most satisfactory. Elaborate details are given in the *Annales Agronomiques* for August 25.

CASSIPORE PRACTICAL INSTITUTION OF HORTICULTURE, FLORICULTURE, AND AGRICULTURE.—Rather a long title, but in spite of it, the Institution does good work. It was founded by BAHU HEM CHANDER MITTER in 1886, with the object of imparting a practical knowledge of plant cultivation to a certain number of students. An experimental garden, with plant-houses and a library, are maintained for the benefit of the students, and a flower show is held once a year to illustrate the progress of horticulture. MR. LOKE NATH GHOSE is the Honorary Secretary.

PRICKLY PEAR.—The *Agricultural Journal*, published by the Department of Agriculture of the Cape Colony for July 30, contains an article on the *Opuntia* which, having being introduced about 1750 from India to the Cape, has now become a nuisance. The mouths of sheep and goats become covered with the spines, which excite inflammation of the throat and stomach, cattle suffer from purging, while ostriches become blind from the injury inflicted on the eyes. Nothing being done to prevent the spread, the plant has thriven to such an extent as to render many farms uninhabitable, the thickets protecting thieves and marauders, whilst the fruits furnish an intoxicating liquor which renders the natives unfit for labour. On the other hand, properly treated, and the spines removed by burning or stripping, the plant supplies valuable fodder—especially in times of drought; vinegar, alcohol, and molasses may be produced from the fruit. It is possible that the woody fibre might be utilised in the form of pulp for coarse paper, but we are not aware that this has been tried. The most effectual plan of removing the pest seems to be to cut it up into small fragments, which are thrown into a heap and allowed to

ferment, care being taken to exclude all the fruits and seeds, as the latter would germinate, and renew the mischief.

FRUITS FOR COTTAGERS.—We have received from the Royal Horticultural Society a specimen copy of a circular which it intends to distribute broadcast throughout the whole country, and which will be published and sold at the lowest possible price including postage, *i.e.*, 25 copies, 1s.; 50 copies, 1s. 6d.; 100 copies, 2s. 6d. We are glad to note that the Society in this matter has risen to the height of its responsibilities, and its duty to the country as a chartered society in its endeavour to disseminate an amount of very-much-needed information on the important industry of fruit culture. Only those who have mixed with the persons intended to be chiefly benefited are aware of the lamentably small amount of precise knowledge existing as to the proper sorts and varieties of fruits to grow. The idea in this pamphlet has been to bring before cottagers, small farmers, amateurs, and others interested in fruit culture for home consumption or sale the names of a few select Apples, Pears, Plums, bush fruits, and Strawberries; giving the time when the various fruits are in season, with remarks on habit of growth, and whether best grown with or without the protection of a wall or fence, or as bush, standard, or half-standard. The selection is in the main, a good one, and the desire of the compilers to keep it within very moderate limits has necessarily kept out of it many very desirable varieties, and some are included which, in our opinion, were better left out. The list of Apples is headed by Blenheim Orange, which is generally a shy bearer in its early years, although it is fruitful in good years when aged; and the old Hawthornden—omitted—is a very prolific early Apple, which bears carriage better than Lord Suffield, which is included. For northern counties, we would not do without the Red Calville, an early variety—a certain and an enormous cropper. Even at the risk of making the list a bit longer, the famous Warwickshire Wyken Pippin, a long-keeping prolific dessert Apple; Yellow Ingestrie, Summer Golden Pippin, Kerry Pippin, and that good Sussex variety, The Forge, ought to find a place.

The list of Pears would bear the addition of Glou Moreceau and Knight's Monach, which do well as standards in the southern and western counties of England, and especially on warm soils; and elsewhere they are deserving of the protection of a wall. We are glad to note Beurré Clairgeau is inserted as a stewing Pear, for it is an enormous and regular cropper, but seldom good enough for dessert. The list of eating Plums includes Jefferson's, a very superior fruit, but one which will do no good, we think, as a standard, except in the warmer shires. And to cooking varieties, the yellow Mirabelle, a prolific yellow Plum of the size of a Mayduke Cherry, good for bottling and the tree an abundant bearer, should be added; also Washington or Magnum Bonum. The bush fruits and Strawberries are good of their kind, but we wonder what the Lancashire lads would think of a list of fourteen varieties of Gooseberries!

CATTLEYA LABIATA, AUTUMN-FLOWERING, SWAINSON'S VAR.—The sale of the second consignment of this beautiful plant, recently imported by Messrs. F. SANDER & Co., St. Albans, at Messrs. PROTHEROE & MORRIS' Central Auction Rooms, on October 2, fully maintained—indeed, exceeded the prices realised by the first lot, a fact which speaks highly of its generally-acknowledged qualities. The plants were sold on their merits, and not a single lot was, we understand, left unsold, the whole realising about £1000. LORD RENDLESHAM, HIS GRACE THE DUKE OF SUTHERLAND, and the Right Hon. JOSEPH CHAMBERLAIN were among the principal buyers.

CATTLEYA LABIATA, GARDNER'S VAR.—At the same sale as above, a small plant, in flower, of a magnificent and distinct form of true *C. labiata*, which was sent to Messrs. F. SANDER & Co., some time ago, by one of their collectors, from the ground from which GARDNER records *C. labiata*, was sold, and realised

ten guineas. The collector stated that in its native habitat it flowers twice a year, but, as yet, its season of flowering under cultivation has not been determined. The flowers of the small plant in question were larger than those of the old autumn-flowering variety, and the labellum had a broad and flat expansion of the front lobe, as seen in *C. gigas*, but with a more circular outline. The sepals and petals were of a warm light rosy crimson, and the labellum rich velvety crimson or blood-red, and with a broad rose-coloured margin.

NATIONAL ROSE SOCIETY.—A meeting of the Executive Committee will be held, by kind permission of the Horticultural Club, at their Rooms Hotel Windsor, Victoria Street, Westminster, on Tuesday, the 13th inst., at 3 o'clock. The matters to be discussed will be the Dates of Exhibitions in 1892; Awards in Suburban classes at the Crystal Palace Show; Suggested Alteration of the Schedules, &c.

MR. W. BULL'S NURSERY.—Among other Orchids in flower at Mr. WILLIAM BULL'S establishment, 536, King's Road, Chelsea, three very remarkable and handsome ones are now in blossom, viz., *Laelia præstans alba*, of which only two plants are known to exist; *Cypripedium Saundersianum*, a very distinct hybrid, and still very rare (not to be confounded with *C. Sanderianum*); and *Cattleya chelseiensis*, a natural hybrid, and one of the most beautiful of *Cattleyas*.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The first ordinary meeting of this Society was held at the rooms of the Literary and Philosophical Society, on Thursday, October 1. Mr. E. LAZENBY read a paper on "Gardening, its Progress, and its Institutions," reviewing the progress made in the gardening world during the last fifty years, the work done by our great educational establishments at Kew and Chiswick. A discussion followed on the paper and kindred subjects, Messrs. SALMON, WEST, and MURRAY taking part. The Chair was occupied by Mr. A. HESLOP. The next meeting takes place on October 15, when Mr. HONEY will read a paper on the "Peach."

HOME CORRESPONDENCE.

TROPEOLUM MRS. CLIBRAN.—I was glad to see the note by "W. D.," on p. 404, on this new *Tropeolum* which is likely to prove a very useful plant in the flower-garden. Its blooms are borne on stout footstalks, which renders it more valuable than those which are too fragile to carry their flowers erect. The colour, too, is so taking—a rich shade of orange—that it is sure to be welcomed in the future, colours of this kind being rather limited in number. *E. Molyneux.*

KNIPHOFIAS.—The very interesting article by Mr. Grant on these showy plants on p. 391, leads me to say that I intend to take the precaution to mulch our plants before winter, and should advise others to do likewise; as after a wet, sunless summer, as the past one has been, the plants will probably suffer. Our plants stand on turf, and have flowered splendidly hitherto, but this year there are very few flowers, owing to the severity of the weather last winter. The situation of the plants is not one of the best, it being somewhat shaded, which renders growth too soft. The variety *K. caulescens* has this year a magnificent appearance, with from fifty to sixty fully-developed flower heads. *E. M.*

MARKETING GARDEN PRODUCE.—The reports furnished from time to time by fruit growers especially, and growers of market produce in general, as to the scantiness or otherwise of their pecuniary returns, shows how very unevenly prices rule in markets for what is presumably the same quality. It does seem, however, that the real secret of these diverse returns is to be found chiefly in the nature of the salesman, rather than in varying quality of produce or public inconsistencies. The grower who has an established reputation among buyers has a good connection, and has ample supplies of special articles, seldom fails to obtain the best prices. Next, perhaps, come those growers who commit their produce to the care

of some well-known salesman, who, in his turn, can always rely upon that produce being even and good, and regularly and efficiently supplied. Then, perhaps, next in order of price come the growers, who, being in a small way, cannot command any considerable or good class connection, and have to take what offers are made. Finally, come the salesman's irregular or uncertain customers—those who send a small consignment, and no more, or, perhaps, large ones, not at all up to market form; these, so far from finding purchasers early in the day, are left over to take their chance at the later auction sales, and not unfrequently realise one-third their real value. It is of the latter class of growers from which we hear such complaints in the daily press—amateur market gardeners, who complain bitterly of their returns, although every new bushel of produce sent only serves to bring down prices. A close attention in the markets to market selling is in itself good education in market gardening. *A. D.*

TOMATOS AT KNEBWORTH.—When visiting Knebworth, the residence of Lord Lytton, near Stevenage, a short time ago, I was much struck with a house of Tomatos Mr. Kipling had in full bearing. The plants had done remarkably well, and the handsome rich-coloured fruit proved particularly tender and luscious, and the flavour all that could be desired. The house in which the Tomatos were growing had been devised by Mr. Kipling specially for the purpose. The experience he gained last season led him to the conclusion that a continual circulation of air, independently of side or top ventilation, was desirable, and which could be effected all over the roof, was just what was required for such a house, whether employed for forcing Strawberries, or for growing Tomatos. He therefore, determined to give Newton's reform system of glazing a trial, the principle being the use of patent steel rafters or bars, which are guttered, and so admit of a continuous circulation of air on each side, as well as through each lap of the large sheets of glass. The result is the remarkably fine crop of luscious Tomatos Mr. Kipling has grown this season. Newton's reform system may be described as the dry or open method, as opposed to the old tight putty glazing, and Mr. Kipling sums up its advantages over the older method, setting forth that it admits of a gentle but continuous circulation of air taking place all over the roof, independently of what is admitted by the ventilators, and he thinks this is beneficial to the plants, whatever may be the character of those grown. Mr. Kipling further stated that he had had in the same house a very fine lot of forced Strawberries, the best that he had ever grown. *R. D.*

MINA LOBATA.—This fast-growing climber, suitable for covering a bare stem or a trellis, may not be generally known. Two plants which I turned out of pots at the end of last June are now covered with blossoms, and prove very attractive. *J. Elcombe, Southampton.*

SUBJECTS OF STUDY FOR GARDENERS.—I have often noticed, in many young gardeners of today, the want of interest in the scientific study of their profession, and I have often thought that anything which would awaken a deeper interest in the things around them would be greatly to their advantage, and therefore of very great benefit to horticulture. The horticultural press could do much to remedy this by the insertion from time to time of articles in their various papers, dealing scientifically with matters which come under the daily notice of gardeners. I venture to think that a series of articles, dealing with the forms and functions of the various parts of a plant, would do much to awaken an interest in the study of botany, which would be of immense advantage to gardeners. If this study were more generally taken up, things would appear in quite a different light to many, and would be a source of very great pleasure, not to say profit; and many hours which are now wasted would be profitably spent in the study of the forms and functions of the various parts of a plant; the result would be, that gardeners of the future would be a better informed, and more intellectual class of men than is at present often the case. *W. L.*

WHAT IS A HARDY PLANT?—I cannot agree with your correspondent, "A. D.," at p. 344, where, under this head, he says, referring to *Hydrangea paniculata* and an herbaceous *Phlox*, that "there is absolutely no distinction between them in hardness and habit." The point of hardness may be allowed to pass, but the "habit" most certainly not. As a matter of fact, the *Hydrangea* is not strictly herbaceous, because the

stems never die down, and I certainly think it best described as a deciduous shrub, though in some winters it carries a certain amount of foliage. What has been the flowering stems of the present year in the *Hydrangea* will presently perfect buds, and these latter will, if sufficiently strong, produce flower buds another year; whereas, an herbaceous *Phlox* is not endowed with this gift at all, for the flower stems in their case are of only annual duration, and, if allowed to remain longer than one year, have no vitality in them, nor do they attempt to push forth young growths at almost every joint along the stem, as in the case of the *Hydrangea*. The flowering stems of all true herbaceous plants perish annually, and a new one is produced from the perennial stool or crown; and *Roses*, *Hydrangeas*, and such things that have vitality still remaining in their woody top growth, even as an Oak, or Elm, or an Apple, are deciduous trees or shrubs, and though "hardy perennial" without a doubt, have nothing whatever to do with "herbaceous" subjects. The *Polygonums*, too, are strictly herbaceous, and even the alpine or sub-alpine species annually lose their flowering-stems. The words "hardy perennials" has a very wide meaning indeed, and anything performing the function of the two words would be admissible, because shrubs, evergreen or deciduous, or climbers or trees, are quite within its limits. But, if the words "hardy herbaceous plants" only were employed, the true exhibits would be much more restricted, because this term in itself excludes all shrubs or similar things. The classes for hardy herbaceous plants have over and over again given rise to misunderstanding at shows, and chiefly because of the laxity of the committees and judges, the latter having frequently to my knowledge passed over *Sweet Peas*, *Asters*, *Ten-week Stocks*, and the like, in a class set apart for herbaceous plants. A few years ago, when I came to this neighbourhood, and was requested to take the Hon. Secretaryship of the local horticultural society, just the same error was made, annuals, biennials, and perennials, being staged for "hardy herbaceous plants"—and passed over by the judges; but it so happened that some dissatisfaction arose among the exhibitors in respect to the prize, and I, being referred to in the matter, surprised not a few by telling them that, according to the schedule, the whole of the exhibits should have been disqualified. Of course, an explanation was demanded, and quickly given; thus the cottagers learnt a lesson, and they now know pretty clearly what is meant by hardy herbaceous perennials. There was an error through ignorance, and I doubt not it is so with many others, and the best way for committees to do would be to instruct cottagers and others in the right way, taking care also to make the wording of the schedule clear. If the usual hardy border plants are desired, as *Sunflowers*, *Lencanthemums*, *Potentillas*, *Pyrethrums*, *Campanulas*, *Delphiniums*, and the like, the words "hardy herbaceous plants" should meet the case; the word "perennials" need not be used, as this is also conveyed in the term "herbaceous." I confess to not quite understanding what "A. D." intends by "hardwooded plants of annual growth from the roots." Perhaps your correspondent will furnish an example, because if "hardwooded," such growths should remain perennial. Perhaps also your correspondent will cite an instance of what he regards as an "hardy herbaceous shrub." In my opinion, such cannot combine in any one plant. *E. Jenkins.*

IXORA WESTII.—This variety is not frequently seen in collections of plants, but a good example of it is now in bloom in an intermediate-house in the Birmingham Botanic Gardens. The large clusters of pale rosy salmon-coloured blooms are both showy and pleasing, as the colour is distinct from that of other varieties; the plant is of easy culture. *W. D.*

A NEW BLACK-SKINNED POTATO.—I enclose you a cutting from the *Annandale Observer* of the 2nd inst., on the subject of the probable introduction of a new Potato, a black one, coming to us from the East. This was referred to about a fortnight ago, if I recollect right, in two of the London evening papers—the *Echo* was one, I forget the other. When I was a boy at school, at Welling, in Kent, under the Rev. Stephen Tucker, and afterwards under his son, Mr. Stephen Tucker, there was a black Potato, so called, in daily use for a part of the year. It was really a very dark purple skin, the colour of the darkest purple kind of the *Solanum Melongena*, or *Aubergine*—the *Bringal* of Bengal. It was a fairly dark purple right through, the colour getting lighter towards the centre, but decidedly a pale blue there. It was a very mealy Potato, and very highly



FIG. 56.—HELIANTHEMUM AUTUMNALE, FLOWERS CLEAR YELLOW, NATURAL SIZE.

appreciated. The Potato-pits were separated from the boys' gardens by a quickset hedge; but, in spite of that, on a dark winter afternoon, adventurous spirits would make a raid on the "black" pits, to roast them in the schoolroom grate in play hours. The white Potatoes were never attacked. The legend about these was, that they were imported by, or sent to, a gentleman named Friend, or Frend (at this distance of time I forget the correct spelling of his name), who lived in the neighbourhood of Tavistock Square, and had business relations with South America, from whence he got them. On looking closer at the extract, it will be seen that Zululand is hardly what we understand by the East, though in the Eastern hemisphere. When I was on leave from India in 1860-61, Mr. Stephen Tucker was alive, and I tried to trace the Potato so as to get some seed, but they had died out with him and he could not help me. J. A. C.

STRIPED BEGONIAS.—I read, in the last issue of the *Gardeners' Chronicle*, that you have received from M. Benary, flowers of a striped Begonia. A year since, I have had in cultivation a strain of Tuberosus Begonia, which I call reticulate. I send you by post some flowers of them, and I shall be very glad to know if those of M. Benary are the same size. A. L. Roscell, *Tronchiennes, Ghent*. [The flowers sent are very pretty and interesting, but different from those of M. Benary. En.]

SOCIETIES.

ROYAL HORTICULTURAL.

TUESDAY, October 6.—The meeting of the above Society was held, in conjunction with the Conference on Sunflowers, Asters, &c., in the gardens of the Society at Chiswick; the different objects exhibited occupying two large tents and the great vinery, besides a number of tables set alongside the walks in the reserve garden. For the purposes of the usual committee meetings the exhibits were not numerous, and consisted of Dahlias, including some meritorious seedlings raised from English-grown seed of Chrysanthemums, Cactus Dahlias, Cannas, Carnations, &c.

Orchid Committee.

Present: J. Veitch, Esq., in the chair; J. O'Brien, Sec.; Dr. M. T. Masters, F.R.S.; J. Douglas, C. Pilcher, and H. M. Pollett.

Baron Schroder, The Dell, Egham (gr., Mr. H. Ballantine), exhibited a plant with a three-flowered spike of the true *Luelia Perrinii* alba. The flowers were 7 inches across, and with unusually broad sepals and petals; they were pure white, without the slightest shade of any other colour, except some very pale primrose at the base of the front lobe of the lip. A First-class Certificate was unanimously awarded.

G. O. Sloper, Esq., Westport House, Highworth, Wilts, sent a spike with three flowers of *Cattleya aurea marmorata*, a variety of great beauty, apparently intermediate between *C. aurea* and *C. Hardyana*. The flowers had the sepals and petals creamy-white, with a few rose-coloured spots and blotches; petals cream colour marbled with rose, through which a delicate tracery of cream-coloured veinery is seen. The lip has the front lobe dark purplish-crimson, the throat and side-lobes being rich golden-yellow. The edges of the side lobes of the lip forming the tube of the labellum is tinged with rose, the yellow veining running through it. An Award of Merit (unanimous).

F. A. Bevan, Esq., Trent Park, New Barnet (gr., Mr. B. Phillips), exhibited a finely-grown plant of the singular and beautiful *Cypripedium Sanderianum*, to which a First-class Certificate had been awarded in 1886. The plant had two spikes, bearing together six flowers, the curiously twisted petals of which were 12 to 15 inches in length, and spotted with dark crimson on the upper third, and tinged with rose on the lower part, constituting it a very distinct and attractive species; a Cultural Commendation was awarded. Mr. Bevan also sent a fine variety of *Odontoglossum grande*, and F. Wigan, Esq., Clare Lawn, East Sheen, Richmond (gr., Mr. Young), sent cut flowers of *Sobralia virginialis*, *Arundina bambusaefolia*, *Cypripedium Leeanum superbum*, and its two parents, *C. insigne* Maulei and *C. Spicerianum*, also a spike of *Cattleya maxima*, all exhibiting good culture.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. H. Herbst, W. Bain, G. Paul, B. Wynne, C. Jeffries, R. Dean, W. Bennett-Poe, H. Turner, E.

Mawley, T. Baines, G. Gordon, W. C. Leach, G. Phippen, C. E. Pearson, W. Furze, J. Walker, H. Cannell, and J. Laing.

Competing Classes.—Mr. Chadwick (gr. to E. M. Nelson, Esq.), Hanger Hill House, Baling, was placed 1st for eighteen bunches of perennial Asters and Helianthus in fine bunches, including *A. floribunda*, *A. novae angliae rubra*, *A. Amellus*, *A. Chapmanni*, *H. latiflorus simplex*, *H. multiflorus*, *H. m. flore pleno*, &c.; 2nd, Mr. Sage (gr. to the Earl of Dysart), Ham House, Richmond. In the class for twelve bunches, the 1st prize was not awarded, Mr. Marshall's stand being disqualified because of its containing *Colchicum variegatum*. The 2nd prize was taken by Mr. A. Harding (gr. to the Dowager-Marchioness of Huntley), Orton Hall, Peterborough. Mr. Debenham, St. Peter's, St. Albans, Herts, was 1st for eight bunches. Especially good were those of *Rudbeckia Newmanni*, *Phlox paniculata*, a fine white flower.

Miscellaneous.—A few Dahlias were shown, much fewer than might have been expected, for they are still flowering finely at the Dahlia nurseries. Messrs. H. Cannell & Sons sent from their Swanley nurseries some bunches of decorative and Cactus varieties, including *Princess Christian*, very pretty and bright, rose flushed with crimson, and tinted with mauve purple (Award of Merit); Mrs. Thornton, pale rose, deepening on the edges to silvery rose, and paling to blush, large, and inclining to coarseness; Ernest Cannell, bright pale orange-scarlet, paling to orange-salmon on the edge; Sir Roger, bright salmon-scarlet, deeper in the centre; Robert Cannell, deep rosy crimson centre, paling to rose and lilac; and *Beauty of Eynsford*, reddish salmon centre, with deep buff edging, very distinct. Messrs. Cannell & Sons also had fifteen varieties of Cannas, in bunches, of a showy character, and the following new varieties of Chrysanthemums: *M. R. Bahanut*, a large incurved variety, colour pale bronzy-rose, with silvery reverse, deepening to cerise early, and somewhat flat, but not showing the flower off to the best advantage; Miss Watson, a bright pale yellow Japanese variety, deeper in the centre, of a very pleasing shade of colour (Award of Merit); *M. V. Marchant*, blush, with slight pale rosy-purple centre, and some of the petals tinted in the same way—a reflexed Japanese; *Beechwood*, a sport from the brownish-crimson *H. Jacotot*, orange and reddish-brown, deep golden reverse, a fine fully-reflexed flower—Japanese; Mr. Harry Laing, a reflexed Japanese, pale lilac, flushed with rose in the centre, large and full; and *Ann J. Chrétien*, crimson, shaded with maroon, the reverse silvery salmon-orange, a fine-coloured early October variety.

Mr. Robert Owen, nurseryman, Maidenhead, also had some Chrysanthemums, including English seedlings. Foremost were three pretty *Pompon* varieties, viz., *Mdlle. Edouard Lefort*, a very pretty and compact, small-flowered variety, gold flushed with brown in the centre, and the petals fimbriated (Award of Merit); *Madame Gabut*, blush, suffused in the centre with lilac—very pretty; and *Mdlle. Jacob*, pinkish-lilac, with golden centre, very pretty small, compact flowers; also a reflexed variety, *Theophile Reederer*, pink, tipped with cream, the centre gold—later flowers under glass take on the true reflexed form, being creamy-white, with a golden centre; *Lady Emily Fitzmaurice*, a bright golden reflexed decorative Japanese, small, and very rich in colour; *Mrs. Neve*, a white flower, in the way of *Madame Desgranges*, not so much reflexed; *Success*, a bright-coloured Japanese, pale reddish-claret—very promising; and *Madame Bellan*, pale soft pink, paling to blush, and yellow centre—the committee wished to see these two again.

From Messrs. Pitcher & Manda, nurserymen, Swanley, came white *Carnation Lizzie McGowan*, a pure white-flowered American variety, broad-petalled, very fine, does not split its calyx; slightly fragrant. The plants bloom abundantly, and apparently produce but little grass. Award of Merit.

Mr. J. Hudson, The Gardens, Gunnersbury House, Acton, had some plants of *Margaret Carnations*, raised from seeds sown on March 29, and lifted from the open ground to bloom in pots under glass. All the plants were carrying excellent heads of bloom.

Messrs. J. Laing & Sons, Forest Hill, had a stand most lavishly laid out with cut blooms of Asters, Chrysanthemums *Leucanthemum* and *maximum*, *Helianthus* in variety, and a quantity of Dahlias, consisting of most sections of that flower. The collection of Messrs. Collins Brothers, and Gabriel was even larger, and consisted of a large number of properly named cut blooms of *Pyrethrum roseum* var.

J. N. Tweedy and Hamlet, the first-named rosy-crimson, the latter rich pink; *Centaurea montana alba*, *Helenium autumnale*, *Gaillardia grandiflora*, many species and varieties of *Aster*, *Stenactis speciosa*, the fine yellow-flowered *Oenothera serotina*, and *Liatris pycnostachya*, a long spike of small rosy-purple blossoms—showy.

The box of trusses of bloom of beautiful *Rhododendrons* shown by Messrs. James Veitch & Sons, of the Chelsea Nurseries, served as a forcible illustration of their value as autumn-flowering plants. Altogether, there were some fifteen varieties, showing a wide range of colour, and the crimson-rose and golden varieties were particularly attractive. We speak of them as greenhouse *Rhododendrons*, but what they require, and especially at this season of the year, is an intermediate-house, with a temperature of from 50° to 55°, and it does seem as if they make excellent London plants, for they stand fog well, and do not appear to be injured by it. They are perpetual flowerers too, for Messrs. Veitch & Sons have exhibited flowers at every meeting of the Royal Horticultural Society held during the present year. The stout texture of the blossoms causes them to be lasting, and they retain the brilliancy of hue for a considerable time. Then the smoothness and sheen of the leaves prevents anything like deposits resting upon them; and as a cultivator once said, they "Cleanse themselves." The varieties staged by Messrs. Veitch & Sons, were *Ne Plus Ultra*, bright scarlet, of fine shape and substance; *Diadem*, orange-scarlet, large, and of fine form; *Lord Wolsley*, apricot, flushed on the edges with orange-scarlet, large, well-formed flowers; *Star of India*, apricot, with a very light wire edge of crimson-salmon, fine shape, and bold truss; *Ajax*, bright salmon, with shading of rose on the edges, the lobes well rounded and smooth; *President*, one of the freest bloomers, in colour bright yellow, shaded, and distinctly edged with salmon—a singularly distinct and beautiful variety, and of the finest form and substance, and said to be singularly free of bloom; *Monarch*, buff, with slight wire edge of deep salmon; *Princess Christian*, deep yellow—large and stout; *Aspasia*, lemon-yellow, large in size, and of fine shape; *Ophelia*, creamy-pink, with slight wire edge of rose—very fine shape, and remarkably pleasing; *Luteo-roseum*, soft pink, with a flush of soft mauve on the petal edges—a remarkably free-flowering and charming variety; *Princess Royal*, soft pink, small-flowered, but a very pleasing tint; *Princess Alexandra*, blush—very pretty; *Maiden's Blush*, blush, tinted on the edges with delicate pink; and *Imogene*, cream, with a very soft tint of blush.

Fruit Committee.

Present: T. Francis Rivers, Esq., in the chair; and Messrs. W. Wilks, P. C. M. Veitch, W. Bates, W. Denning, A. Dean, J. Wright, M. Dunn, G. Reynolds, H. Balderson, J. Hudson, J. Cheal, G. Wythes, P. Crowley, and T. J. Saltmarsh.

The subjects brought to the notice of the committee were small in number, and included three dozen fine-looking Melons, *Hero* of Lockinge, from Messrs. Rothschild, Gunnersbury Park, Acton (gr., Mr. G. Reynolds); *Coe's Golden Drop* Plums, in very nice condition; and a very prolific *Pea*, *Success*, with dark green scimitar-formed pods.

Lord Foley, Ruxley Lodge, Esher (gr., Mr. Müller), showed *Barrington Peaches*, a Melon of the *Cantaloupe* type, and a dish of Apples, sent for a name.

Some *Louise Bonne de Jersey* Pears came from J. Shuter, 66, The Grove, Hammersmith.

Mr. Wythes, gr. to the Duke of Northumberland, Syon, showed ripe fruits and foliage of *Monstera deliciosa*.

From the Society's Garden there was an exhibit of Hungarian Grapes. One of these, *Dodrelabi*, Mr. Barron considered to be identical with *Gros Colmar*. Another, the *Muscat* of Hungary, appeared to be a small form of *Muscat* of Alexandria, very richly flavoured. The berries are less than half-an-inch in diameter. It is likely that this variety will prove a great favourite with those preferring fine flavour to mere size.

Dishes of cooked Apple chips and rings dried in the Mayfarth apparatus were shown; they were pronounced to be equal to the American productions in this line, but less brisk in flavour than freshly-picked home-grown fruit. On the other hand, Prunes made in the same apparatus of Fellemberg, Poupart's, and Rivers' Prolific Plums, were delicious.

Some good samples of dried Plums were shown by Colonel Hayward, Crosswood, Welshpool.

A dozen novelties in Plums in the form of fruit-

bearing branches came from Messrs. Rivers & Son, Sawbridgeworth. The fruits were of varied size and colour, but their qualities have yet to be ascertained. Fine dishes were also shown of late Grand Duke, Monarch, late Transparent Gage Plums, as well as a well-fruited pyramid tree of the Conference Pear.

The Mayfarth drying apparatus was at work on each day of the Conference on various kinds of fruit, and afforded an excellent object lesson to fruit growers. With such an apparatus in his possession, we should hear of fewer cases of the farmer giving his too-abundant fruit to the swine when a glut of it brought the price down so low that it did not pay him to send it to market.

Exhibition of Aster and Helianthus.

These exhibits were, in response to the invitation issued by the Society, exceedingly numerous, and occupied considerable space in the great vinery and a tent in the garden. The Kew collection of Asters, which we take to be fairly accurate as to naming, included *A. Novii* Belgii, a flower $1\frac{1}{2}$ inch in diameter, light purple. Of this species were several forms, as *Harpur* Crew, white; and *densus*, light blue, of shilling size; *A. Novae Angliae* var. *rubra*, dark purple, good diffuse habit; *A. n. a.* var. *pulchellus*, with slightly-twisted bright purple rays, and brown pappus. Others were *A. Amellus*, pale

purple, a bright flower; *lavigatus*, rosy-lilac; *Apollo*, *densus*; also the true type of *A. Novii* Belgii, and *A. grandiflorus*, a fine bloom; *A. g. caerulea*, *A. Novae Angliae pulchellus*, *A. amethystinum* *A. turbinella*, *A. Lindleyanus*, late, pale lilac in colour; *A. umbellatus*, white, with a green disc; *A. acris*, in two forms, purple, and pale lilac; *A. cordifolius elegans*, *A. c. major*, *A. ericoides*, Harvard variety, numerous small pink flowers; *A. horizontalis*, numerous small white flowers, with a pink disk. The Society's collection of *Helianthus* included *occidentalis*, *decapetalus*, *multiflorus*, *H. m. Peter Barr*, *divaricatus*, *rigidus*, *semiplenus*, *latifolius*, *elatio*, *multiflorus maximus* (a fine thing), and *multiflorus Soleil d'Or*, *m. plenus*, *rigidus*, and *rigidus elegans*.

Messrs. Paul & Son, the Old Nurseries, Cheshunt, showed good bunches of Asters of the showier species, and *Helianthus major*, *H. multiflorus*, and others, about twenty-four bunches in all.

Conifer Conference at Chiswick.

Perhaps never before has there been brought together such an array of home-grown specimens of Coniferous trees and their cones than that exhibited at the Royal Horticultural Society's Gardens at Chiswick during Tuesday and the following days of the present week. Representative collections of

twigs and attached cones of many species, principally rare, of Coniferae; and what strikes one is the healthy hue and the look of rapid growth that pervaded the whole of them. Amongst others we noticed the rare *Pinus Koraensis*, with fully developed cones, the pretty *P. sylvestris aurea*, *P. Balanderi*, *P. Lambertiana*, *P. densiflora* and *P. montana*, *Abies amabilis*, *A. magnifica*, *A. pichita*, and the rare *A. Pinsapo glauca*, as being in this fine collection, while *Cephalotaxis pedunculata*, *Torreya grandis*, and *Taxus japonica* were also shown in good form.

The Scone collection from the Earl of Mansfield, was particularly good, and amongst the less common kinds we might include the curious *Fitzroya patagonica*, the little known *Pinus aristata*, *Retinospora obtusa* (Club-moss like), the most curious and distinct abnormal form of Conifer that we have ever seen, the Umbrella Tree (*Sciadoopytis verticillata*), and *Juniperus rigida*.

Mrs. Malcolm, The Cairnets, Perthshire, contributed a large number of Silver Firs (*Abies*), but the method of naming was most objectionable, and would not permit of the scrutiny of the well-grown and healthy specimens.

Sent by Messrs. Dicksons of Chester, was a neat and most interesting collection of twigs and cones, mostly collected at Penrhyn Castle in Wales, and including large fruiting branches of *Abies Webbiana*,

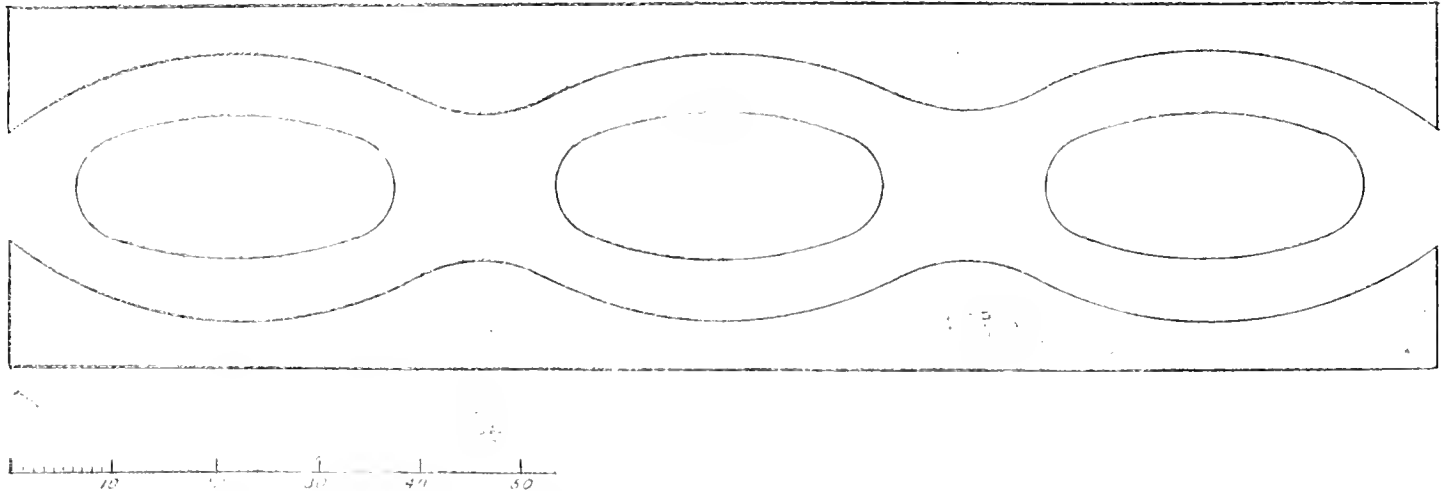


FIG. 57.—PLAN OF THE CONIFER GARDEN AT CHISWICK. (SEE LEADER PAGE.)

blue, $1\frac{1}{2}$ inch in diameter; *A. Maacke*, lilac, bright-yellow disc; *A. versicolor*, pink and white flower; *A. vimineus*, numerous white flowers, in pendulous racemes; *A. Bigelowi*, bright purplish-blue, with a relatively large brown disc. *Boltonia asteroides*, var. *decurrens* has pink-coloured rays, and a yellow disc. Other plants in this exhibit were *Cosmos bipinnatus*, a Mexican plant, with bright purple single flowers, which are terminal; *Lobelia tupa*, a tall spike of sparsely-disposed red flowers. *Rudbeckia speciosa*, *R. purpurea*, and *R. bicolor* were present, the first and last yellow, the other purplish-rose coloured rays; *Helianthus giganteus*, *H. multiflorus*, and *Silphium perfoliatum*, a robust plant, with a tall spike of orange and yellow flowers.

From Mr. W. C. Dod's garden, Malpas, Cheshire, came a good collection of Asters, consisting chiefly of those we had noticed in the Kew collection, besides several not contained therein, as *Aster Robert Parker*, a fine regular flower, $1\frac{1}{2}$ inch across, with pale lilac florets and yellow disc; *A. cordifolium* var. *Fota*, pale lilac free flowers 1 inch wide; *A. nudulatus*, *A. Drummondii*, pale lilac; several forms of *A. Amellus*, some seedlings raised at Malpas, also collected wild, probably garden escapés; and *A. versicolor* var. *discolor*; and *A. pyrenaicus*, large twisted rays.

From the Society's garden were forms of *Aster Novi Belgii*, a decorus, with bright lilac, flattish rays; *nana*, small lilac flowers; *formosus*, light

living specimens of the rarer and more decorative Conifers, fruiting branches, seeds, and a few specimens of wood, have been forwarded from almost every part of the British Isles, these together forming a most valuable and interesting collection, and one that is of the greatest value from a scientific and practical standpoint.

One could not fail to notice how fresh and well grown were the Scottish collections; indeed, the specimens sent from Perthshire and the adjoining counties revealed a depth of leaf-colouring and solidity of growth that we cannot remember to have seen equalled. England comes well to the front in the many rare and little-known forms of Conifers that were exhibited; while from that peculiarly favoured spot in the south of Ireland—Fota Island—were sent specimens of branches, and cones that will do much to settle some knotty points in the minds of Conifer lovers who will have the advantage of observing such rarely-seen fruits of Coniferae.

Altogether, the Conifer Conference may be taken as a grand success, the only drawback being that, owing to the loads of specimens that kept turning up, sufficient space for their being fully and clearly exhibited individually could not be obtained; however, the confined space rendered it all the easier for those persons who were interested in such to fully examine and compare the allied specimens.

From Sir P. K. Murray, of Ochtertyre, N.B., was sent a most valuable representative collection of the

A. nobilis, *A. cephalonica*, *A. grandis*, with both male and female cones attached; *Pinus Pinea*, very fine; *Cupressus macrocarpa*, *C. nutkansis*, and a very large cone and branch of *Araucaria imbricata*.

The Earl of Devon sent many beautiful kinds, including the largest fruiting branch of *Pinus excelsa* that we have yet seen; *Cedrus Deodara* in cone, and the seldom-seen Plum-fruited Yew (*Cephalotaxis drupacea*), and which I would recommend every one who is interested in Conifers to closely examine.

A very interesting collection came from the Duke of Devonshire, including *Picea orientalis*, *A. Nordmanniana*, *Pinus montana* and *monticola*, and the pretty *Abies canadensis*—the Hemlock Spruce.

The conspicuous cones of *Pinus Ayacahuite*, sent by Mr. Jeffries, of Cirencester, and grown at Weston-birt, in Gloucestershire, by R. L. Holford, Esq., were of particular interest, and showed us that, as well as in the Isle of Man, this distinct Pine can be successfully grown in this country.

Her Majesty the Queen had sent from Balmoral not a few samples of the less common kinds of Conifers, and these took in *Abies bifida*, in cone; *Pinus aristata*, *Abies grandis*, *A. Albertiana* (in cone), *A. concolor*, *A. Alcoquiniana*, *A. Douglasii glauca*, *Juniperus suecica*, *Abies nobile glauca*, *Pinus parviflora*, *P. Jeffreyi*, and some others of less note. The examples of Larch from home-saved and Tyrolean seed, were worthy of inspection by every planter, and clearly told their own tale.

From the Earl of Hopetoun and the Countess of Seafeld were sent very fine forms of many species of Conifers, which may also be said of those kindly forwarded by F. S. H. Cornwallis, Esq., Linton Park, Maidstone, Sir F. Dyke Acland, the Duke of Sutherland, the Duke of Buccleuch, and the Earl of Aberdeen, and regarding which we shall have more to say on a future occasion.

The well-grown specimens sent by Smith-Barry, Esq., from Fota Island are most interesting, and consisted of specimens that we rarely have the pleasure of seeing. First came the very rare Cupressus Knightiana (in cone), Abies religiosa, a fine coning branch; Abies Brunonian, and Cedrus Deodara, with fully-grown and beautifully-coloured cones. Pinus parviflora, too, was sent, bearing a number of cones, as also Abies Webbiana, and Wellingtonia (Sequoia) gigantea.

To the Menabilly collection of Conifers (J. Rashleigh, Esq.), we are indebted for not a few fruiting branches of uncommon Conifers, and amongst those exhibited were Encephalotaxus Fortunei, Pinus patula, and the rarely seen Athrotaxis laxifolia.

The collections of growing specimens of various kinds of Conifer are most creditable to the various exhibitors, and showed at a glance what a wealth of colour, what variety in shape and foliage, and what a choice we have in Coniferous trees, both small and large. At present we can only just glance over the many beautiful representative collections that were sent by such eminent cultivators of Conifers as Messrs. Veitch & Sons of Chelsea; Mr. Anthony Waterer, of Knaphill; Barron & Son, Elvaston; Dicksons, Chester; Paul & Son; Jeffries, Cirencester; Mr. Charles Lee, and from Kew.

These valuable collections, and others of particular interest, will be dealt with at some future time.

List of Awards.

FOR GROUPS OF LIVING CONIFERS.

Silver-gilt Medals.

To Anthony Waterer, Knaphill; Messrs. J. Veitch & Sons, Chelsea.

Silver Medals.

To Messrs. C. Lee & Son, Hammersmith; Dicksons, of Chester; G. Paul & Son, High Beach.

Bronze Medal.

To Messrs. Cutbush & Son, Highgate, for groups of Conifers.

Bronze Medals.

To Messrs. Jeffries, of Cirencester; Cutbush & Son, of Highgate; W. Barrow & Sons, of Elvaston.

Vote of Thanks.

To Messrs. Fisher, Son & Sbray; The Royal Gardens, Kew. To Messrs. Little & Ballantyne, Carlisle, for group of Conifers.

FLORAL COMMITTEE.

First-class Certificates.

To Ixora macrothyrsa (Dull), shown by Sir Trevor Lawrence, Bart., M.P.

Awards of Merit.

To Carnation Lizzie McGowan, shown by Messrs. Pitcher & Manda. To Chrysanthemum Miss Watson, shown by Messrs. H. Cannell & Sons.

To Dahlia Prince Christian, shown by Messrs. Cannell & Sons. To Chrysanthemum Madame E. Lefort, shown by Mr. R. Owen.

MEDALS.

Silver Flora.

To Messrs. Collins Bros. & Gabriel, for collection of Hardy Flowers.

Silver Banksian.

To Messrs. Paul & Sons, for collection of Hardy Flowers. To Messrs. J. Laing & Sons, for collection of Hardy Flowers. To Mr. W. Salmon, for collection of Hardy Flowers.

Bronze Banksian.

To Messrs. W. Cutbush & Sons, for collection of Hardy Flowers.

To Rev. W. DoI, for collection of Perennial Asters, &c.

ORCHID COMMITTEE.

First-class Certificates.

To Lælia Perinei alba, shown by Baron Schroder.

Award of Merit.

To Cattleya aurea marmorata, shown by G. O. Sloper, Esq., Highworth, Wilts.

Cultural Commendation.

To Cypripedium Sanderianum, shown by T. A. Bevan, Trent Park, New Barnet.

FRUIT COMMITTEE.

Silver Medal.

To Mr. Reynolds, Gunnersbury, for thirty-six Melons.

Awards of Merit.

To Mr. J. Hunter, Lambton Castle Gardens, Durham, for five Pine-apples. To Royal Horticultural Society's Gardens, for Muscat of Hungary.

PRESTON AND FULWOOD FLORAL AND HORTICULTURAL.

The monthly meeting of members was held on Saturday, October 3, at the Old Legs of Man Hotel, Preston, and the collection of plants, fruits, and cut flowers, was much larger than usual. Mr. S. H. Scott,

in the course of a speech he made, said the monthly exhibitions were becoming more and more important; and as many seedlings made their first appearance there, he proposed that two or three non-exhibitors do go round and suggest what plants and flowers should receive the Society's certificates. This was agreed to, and the 1st prize was awarded to Mr. Hathaway (gr. to the Earl of Latham) for a new single Dahlia.

Mr. S. Ware, of Hale Farm Nursery, Tottenham, was awarded a Certificate for sixty-two bunches of herbaceous flowers; and Mr. John Wilding, of Walton-le-Dale, obtained another Certificate for forty-eight double show and fancy Dahlias, six Cactus Dahlias, and sixteen single Dahlias. Mr. Hathaway read a paper on "The Culture of Chrysanthemums," and a discussion followed.

NURSERY NOTES.

TABLE PLANTS AT MOORLAND NURSERY, NORWOOD.

DRACENAS are the chief specialty of Mr. C. F. Bause, of Moorland Nursery, Portland Road, South Norwood, S.E. There were about 13,000 in number in 32-pots. We noticed the following varieties as being particularly good:—Frau Marie Metzsch, green, with broad crimson margins; Salmonia, dark and light green stripes, salmon edges; Cinnabarina, similar, but narrow leaves; Norwoodiana, bright red, and dark green; Madame Bergman, a broad leaf red variety, of great value for market purposes; Barteli, very dark green, with crimson; Mastersiana, leaves 4 inches broad, edged brilliant crimson, beautiful habit; Rossi, one of the best, the ribs well marked. Thousands of the variety pendula are grown, its broad deep brown-crimson arching leaves being well known.

Caladiums also form an important item here. He has several new kinds, which recently received Certificates from the Royal Horticultural Society:—Mons. Léon Say, crimson, mottled with green and rose spots; Michel Buchner, rich carmine-crimson, with deeper veins, perhaps the richest of all; Madame Ed. Pynaert, metallic crimson, with carmine veins; John Laing, broad yellow broader, with feathered crimson centre; Louis A. Van Houutte, dark metallic-crimson, with black petioles.

Two large houses are devoted to Aspidistras. Before being sent to market, these are repotted, the plants being made into a good shape, straggling plants not being saleable. The green variety is preferred for restaurants to place on white marble.

Cocos Weddelliana, Geonoma gracilis, Kentias, Phoenix rupicola (many thousands), are grown to various sizes; dwarf compact plants of various Nepenthes, beautiful little Crotons and Bertolonias, as well as other well-known ornamental foliage plants, make up a collection of plants which find a ready sale in the London and Paris markets.

MARKETS.

COVENT GARDEN, October 8.

SUPPLIES falling off, Kent Cobs selling pretty freely at 35s. James Webber, Wholesale Apple Market.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table with columns for flower types (Asters, French, etc.), quantities (dozen bunches, per dozen, etc.), and prices (s.d., s.).

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table with columns for plant types (Adiantums, Aralias, etc.), quantities (per doz., per dozen, etc.), and prices (s.d., s.).

FRUIT.—AVERAGE WHOLESALE PRICES.

Table with columns for fruit types (Apples, Damsons, etc.), quantities (per doz., per case, etc.), and prices (s.d., s.).

VEGETABLES.—AVERAGE RETAIL PRICES.

Table with columns for vegetable types (Artichokes, Beans, etc.), quantities (per doz., per bushel, etc.), and prices (s.d., s.).

POTATOS.

Arrivals are not quite so heavy; market firm for best samples at previous quotations. J. B. Thomas.

SEEDS.

LONDON, Oct. 7.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., write that Clover seeds just now are being quite left alone by the trade. Perennial Rye-grasses are a trifle cheaper. There is no change in imported Italian. Choice new winter Tares and seed Rye are now obtainable in London on exceedingly moderate terms. For Trifolium there is still a small sale. Mustard and Rape seed move off slowly on former terms. Hemp seed is dull; but in Canary seed a hardening tendency is observable. There is a brisk inquiry for blue Peas at advancing quotations; the supply just now falls short of the demand. Haricot Beans continue cheap. Feeding Linseed is steady.

FRUITS AND VEGETABLES.

SPITALFIELDS: Oct. 6.—Quotations:—English Apples, 2s. 6d. to 5s. 6d. per bushel; Pears, 1s. 6d. to 2s. per half-sieve; English Tomatoes, 6s. to 7s. per 12 lb.; foreign do., 9d. to 1s. 6d. per box; Prune Plums, 2s. to 3s. per half sieve; Damsons, 2s. 3d. to 2s. 6d. do.; Bullaces, 1s. to 1s. 6d. do.; Seakale, 1s. 3d. to 1s. 6d. per punnet; Cabbages, 1s. 6d. to 3s. per tally; Savoys, 2s. to 3s. 6d. do.; Greens, 1s. to 2s. per dozen bunches; Spinach, 1s. to 1s. 6d. per bushel; Brussels Sprouts, 1s. 3d. to 2s. per half-sieve; Turnips, 2s. to 2s. 6d. per doz. bun.; Cauliflowers, 3s. to 3s. 6d. per tally; Scarlet Beans, 1s. to 1s. 3d. per bushel; Carrots, 1s. to 2s. 6d. per dozen bunches; do. 20s. to 40s. per ton; Endive, 1s. to 1s. 3d. per dozen; Cos Lettuce, 4d. to 8d. per score; Cabbage, do. 2d. to 4d. per dozen Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Leeks, 1s. 9d. to 2s. per doz.; English Onions, 4s. to 4s. 6d. per cwt.; Belg'ar, do. 2s. to 3s. per bag of 110 lb.; Dutch do. 3s. to 3s. 6d. do.; Spanish do. 6s. to 7s. per case; Marrows, 3s. to 4s. per tally; Celery, 6d. to 10d. per bundle; Parsley, 1s. to 12s. 6d. per dozen bunches; Horseradish, 1s. to 1s. 2d. per bundle; frame Cucumbers, 1s. 6d. to 2s. 9d. per dozen; do. natural, 6d. to 8d. per dozen; Radishes, 2s. to 2s. 6d. per tally; Beetroots, 1s. 6d. to 2s. per dozen bunches.

STRAFORD: Oct. 6.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 3s. per tally; Savoys, 3s. to 4s. do.; Cauliflowers, 9d. to 1s. per dozen, and 3s. to 4s. 6d. per tally; Turnips, 1s. 6d. to 2s. 6d. per dozen; do. 30s. to 40s. per ton; Carrots, household, 30s. to 40s. do.; do. cattle-feeding, 25s. to 27s. 6d. do.; Mangels, 16s. to 18s. do.; Swedes, 20s. to 25s. do.; Onions, English, 80s. to 90s. do.; do. Dutch, 3s. 3d. to 3s. 6d. per bag; do. Ports, 5s. 9d. to 6s. 6d. per case; Apples, English, 2s. to 6s. per bushel; Scarlet Beans, 1s. to 1s. 6d. per sieve; do. 2s. to 2s. 6d. per bag; Damsons, 1s. 6d. to 2s. 3d. per half-sieve; do. 3s. to 4s. 6d. per flat; Plums, 1s. 6d. to 4s. per half-sieve.

BOROUGH: Oct. 6.—Quotations:—Cabbages, 2s. to 5s. per tally; Broccoli, 3s. to 4s. do.; Turnips, 1s. 6d., and Carrots, 1s. to 1s. 6d. per dozen bunches; Scarlet Beans, 1s. to 1s. 6d. per bushel; French do., 1s. do.; Apples, 2s. to 6s. do.; and William Pears, 2s. to 6s. do.

POTATOS.

SPITALFIELDS: Oct. 6.—Quotations:—Magnams, 7s. 6d. to 60s. per ton; Regents, 55s. to 65s.; Imperators, 60s. to 70s.; Hebrons, 55s. to 70s.; Early Rose, 50s. to 75s.

BOROUGH: Oct. 6.—Quotations:—Regents, 7s. to 80s.; Hebrons, 60s. to 80s.; Imperators, 60s. to 70s.; Magnams, 60s. to 70s. per ton.

STRAFORD: Oct. 6.—Quotations:—Magnams, 55s. to 80s.; Imperators, 55s. to 75s.; Hebrons, 60s. to 70s.; Elephants, 55s. to 75s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Oct. 3, and for the corresponding period in the previous year:—1891, Wheat, 31s. 4d.; Barley, 28s. 10d.; Oats, 18s. 5d. 1890, Wheat, 31s. 2d.; Barley, 29s. 5d.; Oats, 17s. 4d. Difference, Wheat, +3s. 2d.; Barley, —1s. 5d.; Oats, +1s.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; do., inferior, 40s. to 75s.; hay, beat, 80s. to 92s.; do., inferior, 26s. to 50s.; and straw, 20s. to 40s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending October 3.	ACCUMULATED.				10th In.	Ins	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 4, 1891.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.	Below 42° difference from Mean since Jan. 4, 1891.					
1	2 +	62	0	+ 197 +	76	4 +	181	37.2	24	28
2	2 +	66	0	— 33 +	98	4 —	133	21.1	27	31
3	2 +	78	0	— 78 +	95	3 —	129	16.9	23	29
4	2 +	89	0	— 93 +	127	2 —	135	17.8	62	34
5	2 +	77	0	— 94 +	113	3 —	132	19.2	44	32
6	2 +	95	0	— 112 +	149	2 —	128	19.8	69	37
7	2 +	74	0	+ 107 +	45	5 +	145	29.2	21	33
8	1 +	80	0	+ 47 +	35	3 +	130	24.3	19	30
9	0 aver	80	0	— 92 +	118	3 —	135	27.0	41	38
10	2 +	80	0	+ 76 +	20	1 —	161	23.1	32	31
11	2 +	85	0	+ 25 +	31	3 —	143	24.8	42	34
12	1 +	108	0	— 15 +	40	1 —	135	22.1	64	48

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending October 3, is furnished from the Meteorological Office:—

"The weather has been generally fine and bright over all the more southern and south eastern parts of the Kingdom, but in the west and north, cloudy skies and frequent falls of rain have been experienced.

"The temperature has just equalled the mean in 'England, S.W.,' but in all other districts it has been above, the excess in nearly all cases having been 2°. The highest of the maxima were generally recorded on Sept. 28, when the thermometer rose to 70° in 'England, E.,' to 69° in the 'Midland Counties' and 'England, S.,' to 68° in 'Scotland, E.,' and the 'Channel Islands,' and to between 63° and 67° elsewhere. The lowest of the minima were registered either on Oct. 2 or 3, and ranged from 29° in 'Scotland, N.,' 30° in 'Scotland, E.,' and 33° in 'England, S.W.,' to 40° in 'England, N.E.,' and to 47° in the 'Channel Islands.'

"The rainfall has been more than the mean in 'Scotland, N. and W.,' as well as in 'England, N.W.,' but in all other districts it has been less than the normal.

"The bright sunshine has exceeded the mean in most parts of the country, but shows a deficit in 'England, N.E.,' 'Scotland, W.,' and 'England, N.W.' The percentage of the possible amount of duration ranged from 69 in 'England, S.,' 64 in the 'Channel Islands,' and 62 in 'England, E.,' to a little more than 40 in the 'Midland Counties,' 'England, S.W.,' and 'Ireland, S.,' and to between 19 and 27 over the north-western and northern districts.

NOTICES TO CORRESPONDENTS.

CARNATION LEAVES: J. B. R. The appearances are due to some mining insect, which has disappeared. Send living specimens and leaves again.

CORRECTION: In reply to "W. J. S.," for "Seku," read "Seckle."

FUNGUS: C. W. D. The fungus is *Peziza aurantia*, a common species. The "puffing" is common to most members of the group, and is caused by the liberation of clouds of mature spores. The emission of spores is due to the hygroscopic property of a certain layer of tissue, hence the cloud following breathing, G. M.

LANDSCAPE GARDENING: Two of the earliest books on this subject—if not the earliest—are that of Batty Langley in 1728, and Whately's *Essay on Modern Gardening* (1770).

MALFORMED MUSHROOM: J. H. Not uncommon.

NAMES OF FRUITS: G. L. 1, Annie Elizabeth; 2, Margil; 3, Beurré Hardy; 4, Marie Louise; 5, General Todtleben.—A. V. E. 1, Soldat Esperen; 2, Blenheim Orange; 3, Duke of Devonshire.—W. W. 1, Peach; 2, Flemish Beauty; 2, Beurré d'Amanlis; 4, Beurré de Capiaumont; 5, Goff.—J. H. E. Plum Greengage, so far as we could make out.—R. J. J. 2, King of the Pippin; 3, Gloria Mundi; 5, Cockle's Pippin; 6, Besspool; 8, Boaton Russet; 9, Hawthornden; 10 and 12, Dumelow's Seedling; 11, Court of Wick.

NAMES OF PLANTS: G. H. P. A wretched specimen of some *Gaillardia*.—W. M. *Bagshot*. *Pyrus Aria*, the White Bean.—*Justus C.* A species of Lichen—*Cladonia*.—R. T. 1, *Sericographis Gbiesbrechtiana*; 2, *Escallonia rubra*; 3, *Ampelopsis serjaniefolia*; 4, *Pellionia daveana*; 5, *Sedum carneum variegatum*; 6, *Acacia atkinsii*; 7, *Skimmia Fortunei*.—*Cupid*. *Maxillaria picta*.—W. K. *Rosa viridiflora*.—H. W. *Lelia Perrii nivea*, if the segments keep white.—*Harris*. 1 and 2, forms of variegated Yew; 3, *Cephalotaxus pedunculata fastigiata*; 4, *Juniperus virginiana aurea*; 5, *Retinospora dubia*; 6, *R. ericoidea* of gardens; 7, probably a form of *Biota orientalis*; 8, *Thunopsis borealis*.

NOTICE TO LEAVE SERVICE: G. S. Not knowing all the circumstances, we cannot advise you.

OAK LEAVES: F. C. E. The leaves are covered with galls, commonly called Oak Spangle, which are caused by a gall mite, *Neuroterus lenticularis*, puncturing the leaves.

PLATANUS OCCIDENTALIS: J. R. The tree would succeed at Colwyn Bay, but if the situation is much exposed to sea breezes, the common *Sycamore* would be a more suitable tree to plant.

TACSONIA VAN VOLXEMI: Miss F. Discovered by the late M. Baptiste Joseph Van Volxem, in New Granada. It will succeed in the stove or warm Greenhouse. With winter protection it might be cultivated on a south wall outside, in our warmer districts. It is worthy of a trial.

YELLOW-FLOWERED PANCRATIUM: X. This was mentioned in a recent communication, but we suspect some other genus was intended, as there is no yellow *Pancretium* known.

COMMUNICATIONS RECEIVED.—J. Pentland Smith, letter forwarded to person named.—Haworth.—J. C.—W. H.—E. J. R.—W. E. G.—E. J. B.—A. D. W.—A. W.—Ch. D. B. S. M.—J. K. Rudde.—C. E. M.—E. C.—J. Q.—W. E. Dixon.—E. M.—A. D.—J. R. J.—J. P.—H. W. W.—J. Carter & Co.—G. C.—J. S.—Wm. King.—G. C.—C. P. & Co.—J. H.—J. P.—Bywater.—E. M. P.—W. M.—G. T. C.—H. H.—J. F.—E. W. B.

SPECIMENS RECEIVED with thanks.—Coccos of *Abies Pinsapo* from J. H., Lilford Hall; fruits of the Laurel Cherry from R. M.—not uncommon.

PHOTOGRAPHS RECEIVED with thanks.—W. S. B., Moncrief. *Abies Nordmanniana*—full letter will follow.—M. de la Devansaye.

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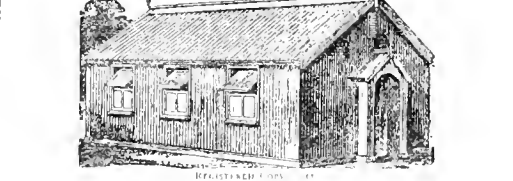
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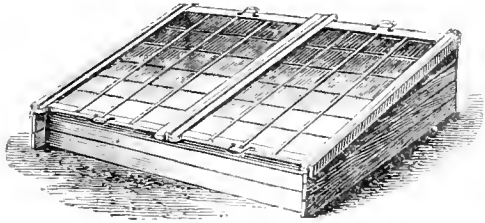
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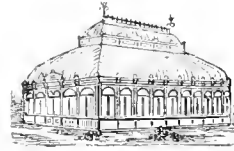
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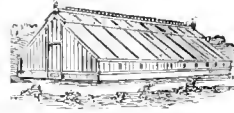
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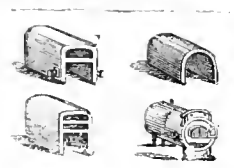
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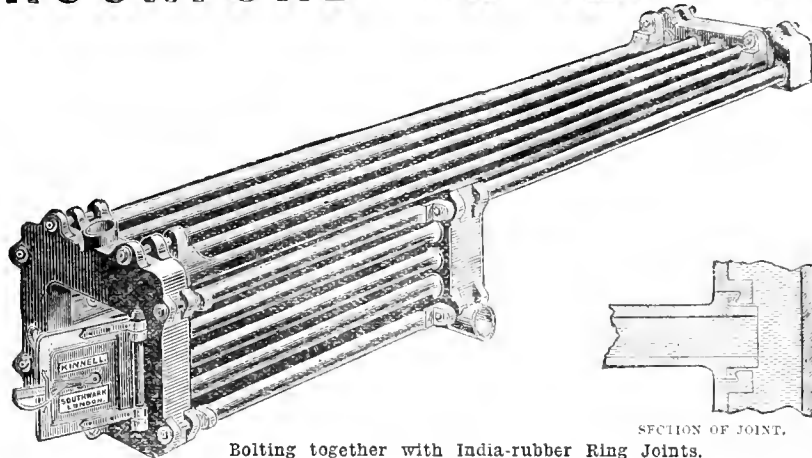
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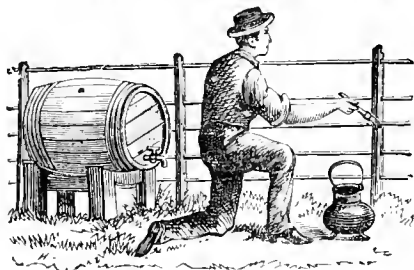
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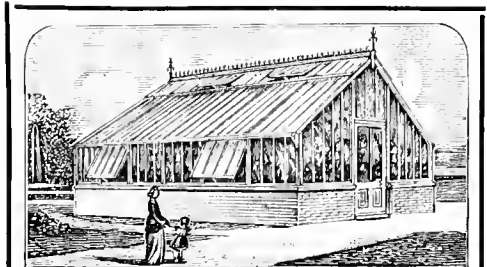
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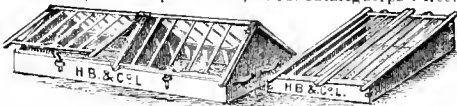
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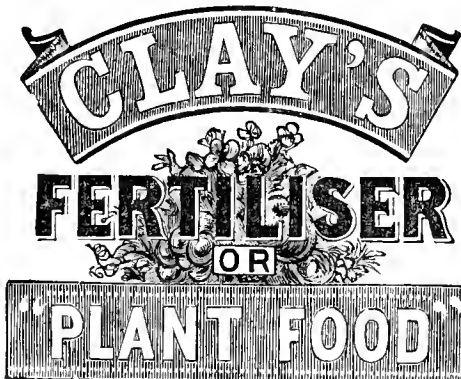
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AND

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INTERCOLONIAL and GENERAL NEWS. SPORTING and the FIELD, in which is incorporated BELL'S LIFE in SYDNEY. RECORD of RACES, and NOTES on the TURF. CRICKET and AQUATICS. THE FLORA of AUSTRALIA. (Drawn and engraved especially for this Journal.) NATURAL HISTORY. (Original Articles.) AGRICULTURE, PASTORAL, HORTICULTURE. GOLD FIELDS and MINING generally. STOCK and SHARE REPORTS. ORIGINAL and SCIENTIFIC ARTICLES. TALES by POPULAR ENGLISH and AUSTRALIAN AUTHORS. THE FASHIONS. DOMESTIC ECONOMY. INDOOR AMUSEMENTS. THE CHESS PLAYER. THE HOME CIRCLE. COMMERCIAL NEWS. SHIPPING INTELLIGENCE. The SYDNEY MAIL has a wide circulation throughout the Australian Colonies, New Zealand, Polynesia, &c. It contains a large amount of information on a great variety of subjects.

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Mr. A. DONALDSON, formerly at Downside Gardens, Leatherhead, as Head Gardener to the Ladies Hope, Long Cross House, Chertsey, Surrey.

Mr. JOHN McLENNAN, as Head Gardener to the Right Hon. Lord CAREW, Castle Boro, Enniscorthy, co. Wexford.

Mr. F. HARBON, as Head Gardener to C. E. G. BARNARD, Esq., Cave Castle, South Cave, East Riding, Yorkshire.

Mr. H. BROWN, late of Fanlerstead Court, as Head Gardener to Captain LAURIE, Windlesham Cottage, Bagshot.

CATALOGUES RECEIVED.

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 THOMAS KENNEDY & Co., 105, High Street, Dumfries—Dutch Flower Roots.
 ARMITAGE BROS., Nottingham—Bulbs.
 GEORGE BRUCE & Co., 35, Market Street, Aberdeen.
 F. KNOLL, Lindenau, Leipzig—Wholesale Price List of Dried Flowers, Leaves, &c.
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 J. H. HUNTER & Co. (Limited), 21, Lower Ormond Quay, Dublin—Dutch Bulbs.
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 CLARK & Co., North Shields—Bulbs, Roses.
 DOBIE & MASON, Manchester—Bulbs.
 C. TURNER, Slough—Roses, Fruit Trees.
 J. DOX, Chapel Bar, Nottingham—Bulbs, Horticultural Sundries.
 W. RUMSEY, Waltham Cross, N.—Roses, Trees, Shrubs, &c.
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GARDENER (HEAD, of three or four); age 28; married when suited.—Mr. BARKER, Gardener to C. F. H. Boleton, Esq., Marton, R.S.O., Yorks, can with confidence recommend his Foreman as above. Fourteen years' experience.

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STRAWBERRIES.—All the best of the New and Old Varieties. One of the best Collections in the Trade. Send for Descriptive CATALOGUE, the most complete issued. Special quotations for quantities to grow for Market.
FRUIT TREES of all kinds. Orders booked now for autumn delivery.
JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

CHRISTMAS and LENTEN ROSES.—**Mr. BROCKBARK,** our greatest authority, writing to the *Garden*, says:—"They are the finest I ever beheld." Good strong clumps full of flower-buds, at 9s., 12s., 15s., 18s., and 24s. per dozen. Specimen plants, 1½ to 3 feet across. Price on application. Twelve Lenten Roses, in best named varieties, for 10s.
GEO. STAMP, Nurseryman, Rishop's Teignton, South Devon.

Many Acres of Lilies of the Valley!
T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

The Best Present for a Gardener.
VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free, 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Cbiswick.

J. WEEKS AND CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers.
King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsman, and direct from us. 1 cwt. and over carriage paid. London Agent—**Mr. GEORGE, 10, Victoria Road, Putney**
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers.

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Dutch Bulbs.—Great Unreserved Sales.

EVERY MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., **FIVE DAYS WEEKLY**, as above, at half-past 11 o'clock each day, **LARGE CONSIGNMENTS** of first-class **HYACINTHS, TULIPS, CROCUS, NARCISSUS,** and other **BULBS** from **HOLLAND**. Lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had. N.B.—There will be no Sale of Bulbs on Tuesday next, Oct. 20.

Tuesday Next.

UNRESERVED SALE, by order of the Trustees, of the **COLLECTION OF ESTABLISHED ORCHIDS** from Old Park, Ventnor, Isle of Wight.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, at their Rooms, 67 and 68, Cheapside, London, E.C., on **TUESDAY, October 20**, at half-past 12 o'clock, without reserve, the whole of the above collection of **ESTABLISHED ORCHIDS**, containing about 140 plants. The collection includes a choice assortment of **Masdevallias, Cymbidium Lowianum, Oncidium Kramerianum, Laelia anceps albata, Cypripedium Crossianum, C. amandum, Cattleya Trianae** alba, C. Mossie, C. trianae bella, **Epidendrum prismatocarpum, Cattleya Trianae atalanta, Celoegia asperata,** also **Odontoglossums, Oncidiums, Dendrobiums, Cypripediums,** and **Cattleyas**, in the usual variety.

On view morning of Sale, and Catalogues had.

Wednesday Next.

200 AZALEA INDICA and **100 CAMELLIAS**, selected varieties; and **100 AZALEA MOLLIS**, from one of the best growers in Belgium.

MESSRS. PROTHEROE AND MORRIS will include the above consignment of plants in their **SALE** on **WEDNESDAY NEXT**.

On view morning of Sale, and Catalogues had.

Wednesday Next.

407,000 KENTIA SEEDS, The largest consignment ever received and offered in one day, consisting of

218,000 KENTIA FORSTERIANA.
189,000 " BELMOREANA.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will include the above enormous consignment of **KENTIA SEEDS** in their **SALE** on **WEDNESDAY, October 21**.

On view morning of Sale, and Catalogues had.

The Auctioneers will be pleased to purchase on behalf of Provincial and Continental Buyers who may be unable to attend.

Friday Next.—Established Orchids.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT, October 23**, at half-past 12 o'clock, a Private Collection of **ESTABLISHED ORCHIDS** from the Midlands, containing about 550 Plants, including **Dendrobiums, Odontoglossums, Cattleyas, Cypripediums, Cymbidiums,** and others. **ODONTOGLOSSUM CRISPUM** and **CYPRIPEDIUMS** from another Collection.

Also **IMPORTED AND ESTABLISHED ORCHIDS**, from Messrs. Shuttleworth, Curder & Co., a new **CALANTHE, LISCHILUS,** new **ANGRECEUM,** and other Property.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their **SALE OF ORCHIDS**, on **FRIDAY NEXT, October 23**, **CALANTHE**, new species, a fine and totally distinct species, and a great acquisition to gardens. It has stout, columnar, above ground pseudobulbs, and fine ornamental foliage. The flower-spikes, which are as stout as a Cedar pencil, are 2 feet to 3 feet in height, and bear large heads of pure white, or, in some varieties, rose-coloured.

Also some plants of a grand large yellow and purple **LISCHILUS**; a fine **Sarcopodium**, with large yellow and crimson flowers; the new **Angreecium Saundersii**; **Oncidium citrinum**, and several species of **Eulophia**.

On view morning of Sale, and Catalogues had.

Liverpool.

GREAT UNRESERVED CLEARANCE SALE of well-grown **NURSERY STOCK**, by order of the executors of the late Mr. George Cunningham (Messrs. George Cunningham & Son), in consequence of the Land being required to be cleared for Building purposes.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Oak Vale Nursery, Old Swan, Liverpool (10 minutes' walk from Broad Green Station, L. & N. W. Ry.), on **MONDAY, October 19**, and three following days, at 12 o'clock precisely each day, the first portion of the well-grown and valuable **NURSERY STOCK**, comprising great quantities of Trees and Shrubs, 1 to 6 feet; splendid Specimen Variegated and Green Hollies, 2 to 6 feet, embracing nearly all the hardy varieties in cultivation; several hundreds of Silver and other varieties, 4 to 9 feet; a large assortment of Deciduous Flowering Trees, Shrubs, thousands of Rhododendron ponticum, Oval-leaved and Common Privet and Common Hollies, suitable for Hedges; large quantities of Fruit Trees, 4 to 10 feet; 30,000 strong transplanted Quick; together with a fine collection of Fruit Trees.

The Stock may be viewed any day prior to the Sale. Catalogues can be obtained on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Note.—The Valuable Freehold Building Estate of about 13½ acres, with the important and extensive Frontages to Broad Green and Nursery Road, ready for immediate development, is for Sale by Outside Treaty. Particulars of the Auctioneers.

Windsor Nurseries, Bagshot, Surrey.

GREAT ANNUAL SALE of the exceedingly well-grown **NURSERY STOCK**, carefully prepared for removal, and lotted to suit the Trade and large Buyers, by order of Mr. Richard Mason, whose reputation as a Grower of Nursery Stock is so well-known.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the Windsor Nurseries, Bagshot, Surrey, twenty minutes' walk from Bagshot, and 2½ miles from Sunningdale, Stations, on **MONDAY, October 19**, and three following days, at 12 o'clock precisely each day, several Acres of exceptionally well-grown **NURSERY STOCK**, comprising:—

- 5,000 hybrid Rhododendrons to name, 1½ to 2 feet.
- 3,000 Andromeda floribunda, well set for bloom
- 1,000 Azalea pontica, 1½ to 2 feet
- 10,000 Rhododendron ponticum, 1½ to 3 feet
- 5,000 Berberis aquifolium
- 2,000 Berberis Darwinii
- 2,000 Pinus austriaca, 2½ to 4 feet
- 1,000 Spruce Firs, 2½ to 8 feet
- 1,000 Pinus strobus, 5 to 9 feet
- 2,000 Portugal Laurels
- 2,000 Colchicum Laurels, 3 to 5 feet
- 5,000 Oval-leaved Privet, 2½ to 4 feet
- 4,000 Thuia Lobbiai, Abies, Thuiopsis borealis, and Cedrus, 2 to 7 feet
- 10,000 strong Quick
- 1,000 Coniferæ and Ornamental Trees, 1 to 10 feet

10,000 Retinospora plumosa aurea, beautifully coloured, and others suitable for potting and boxes; 10,000 Cupressus Lawsoniana, 2 to 6 feet; 500 erecta viridis, 3 to 3½ feet; Fruit Trees, and other Stock.

The Auctioneers will be pleased to execute Commissions for Gentlemen who cannot attend, and Mr. Mason will lift and forward any lots.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Wimbledon.—Expiration of Lease.

CLEARANCE SALE of about 4½ acres of exceptionally well-grown and thriving **NURSERY STOCK**, growing upon a portion of the Nursery the lease of which is about to expire, by order of Messrs. D. S. Thomson & Sons.

IMPORTANT TO MARKET GARDENERS, GENTLEMEN, NURSERYMEN, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION on the Premises, The Nurseries, Wimbledon, about five minutes' walk from Wimbledon Station, on **MONDAY and TUESDAY, October 26 and 27**, at 12 o'clock precisely, Without Reserve, 8000 Standard and Pyramid Apples, Pears, and Plums, 350 Standard Cherries, 800 Dwarf-trained Apples, Pears, and Cherries, 5,000 Currants and Gooseberries, 2,000 Laurels, of sorts, 1,500 Weymouth and Austrian Pines, 900 broad-leaved Privet, 200 Green Hollies, 3 to 4 feet, 160 well-furnished English Yews, 4 to 5 feet, 900 Standard and half-standard Roses, 1,700 Border Shrubs, in variety, 4 to 7 feet, 1,300 Limes, 8 to 11 feet, fine Avenue trees with short stumps, 40 Lombardy Poplars, well furnished, 12 to 15 feet, 300 Standard Planes, Thorns, and other Ornamental Trees, &c.

May be viewed any day (Sunday excepted) prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Cheshunt.

ABSOLUTE CLEARANCE SALE of unusually well-grown **NURSERY STOCK**, in consequence of the expiration of the Lease of this Branch Nursery. By order of Messrs. Paul & Son.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, on the Premises, The Church Fields Nursery, Cheshunt (one mile from Cheshunt Station), on **WEDNESDAY and THURSDAY, October 28 and 29**, at 12 o'clock precisely each day, without reserve, about 12 acres of unusually well-grown **NURSERY STOCK**, in the best possible condition for removal, consisting of—

- 20,000 AVENUE TREES, 10 to 25 feet, with straight stems, carefully transplanted, and
- SPECIALLY ADAPTED FOR STREET PLANTING,** including
- 10,000 LIMES, with good heads,
- 5000 Spanish and Horse CHESTNUTS, POPLARS, OAKS, and PLANES,
- 5000 BOX, large quantities of oval-leaved PRIVET, Scotch ROSES,
- 10,000 BUSHY ACUBAS, 1 to 5 feet, undoubtedly the best lot in the Trade.

Specimen RHODODENDRONS, ARAUCARIAS, and variegated HOLLIES, Dwarf-trained and Pyramid FRUIT TREES, CURRANTS and STRAWBERRIES, of the best sorts, RASPBERRIES, and NUTS.

THE FINEST COLLECTION OF FLOWERING SHRUBS IN THE COUNTRY.

Including the New Dwarf Flowering and Double LILACS, THOUSANDS OF EVERGREENS, suitable for London and Suburban Gardens; and other Stock.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, of Messrs. PAUL and SON, The "Old" Nurseries, Cheshunt; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

NOTE.—The opportunity afforded by this Sale to intending purchasers is unique. No Sale has ever been held at these Nurseries, the stock having been prepared without any idea of a public sale, which now arises solely through the expiration of the Lease of this Branch Nursery.

The Auctioneers desire to call the particular attention of Public Companies, Local Authorities, and others to the unrivalled and extensive Stock of Avenue Trees, Acubas, Evergreens, and Flowering Shrubs.

Ealing.—Expiration of Lease.

CLEARANCE SALE of about 11,000 CONIFERS and other **STOCK**, by order of Messrs. Hart Bros., whose Lease of this Branch Nursery will shortly expire.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Castle Bar Nurseries, Ealing, about 5 minutes' walk from the Ealing Station, on **WEDNESDAY, October 21**, at 12 o'clock, about 11,000 well-grown CONIFERS and other **STOCK**, including 12,000 Cupressus and Box, 800 Golden Privet, 2 to 4 feet, bushy; English and Golden Yews, Variegated and Green Hollies, 1000 Ivies, in pots; Ampelopsis Veitchii, 300 Standard Trees, Picea Nordmanniana, 2 to 3 feet, good plants; 5000 Golden, Silver and other Euonymus, 6 to 12 inches, adapted for potting and window boxes; 3 GREENHOUSES, HOT-WATER PIPING, LIGHTS, a quantity of FLOWER POTS, and other items.

Can be viewed one week prior to the Sale. Catalogues had on the Premises; at the Grove Nursery, Ealing, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Groombridge near Tunbridge Wells.

HOLLAMBY'S NURSERIES.
GREAT UNRESERVED SALE of valuable **NURSERY STOCK** in the best possible condition for removal.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, as above, close to the Groombridge Station, on **THURSDAY and FRIDAY, October 22 and 23**, at 12 o'clock precisely each day, by order of Mr. Edwin Hollamby, enormous quantities of **CONFERÆ**, Standard, Dwarf, and Climbing **ROSES**, 100,000 LARCH and Scotch **FIRS**, **ASH**, and Spanish **CHESTNUT**, 20,000 **CUPRESSUS LAWSONII** and **THUIA LOBBII**, 10,000 strong transplanted **QUICK**, 10,000 named and other **RHODODENDRONS**, 500 Ghent and Mollis **AZALEAS**, 500 **ANDROMEDA FLORIBUNDA**, 5000 extra strong **SEAKALE**, for forcing; 10,000 **PINUS AUSTRIACA**, 3000 **HARDY CLIMBERS**, established in pots; **Portugal, Caucasian,** and other **LAURELS**.

May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Havant.

UNRESERVED CLEARANCE SALE of the **FIRST PORTION** of the extensive **NURSERY STOCK** growing on the Leasehold Nursery, by order of Messrs. Ewing & Co., who are relinquishing the Business, and also in consequence of the expiration of Lease.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Sea View Nursery, Havant, on **WEDNESDAY and THURSDAY, October 28 and 29**, at 12 o'clock each day, 10,000 Standard, Dwarf, and Pot **Roses** of the leading kinds, for which these Nurseries are so well known; 10,000 Conifers and Evergreens of the choicest variety, 10,000 Ornamental Trees, Flowering Shrubs and Plants; 10,000 Forest Trees in various sizes, 5000 Apples, Pears, Plums, Cherries, Peaches, Nectarines, &c. (Standard, Dwarf, Trained, and Pyramid Trees); a large quantity of Raspberry Canes, in several sorts, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The **FREEHOLD NURSERY** of about 3 acres, with the Residence, is to be **LET or SOLD**.

Plaistow, Essex.

UNRESERVED SALE of the whole of the well-grown **NURSERY STOCK**, by order of Mrs. Holmes, the land having been let for other purposes.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nursery, High Street, Plaistow, Essex, close to Plaistow Station, on **MONDAY, October 26**, at 1 o'clock precisely, without reserve, 300 ACUBAS, 9 to 24 inches, fine plants for potting; also larger ACUBAS, 3 feet; 1000 PRIVET; 2000 green EUONYMUS, IRISH YEWs, good plants in pots, all staked; 1000 VIRGINIAN CREEPERS, and a variety of other stock.

May be viewed one week prior to the Sale. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone.

Wanstead.

About 1 mile from Snaresbrook, Leytonstone, and Forest Gate Stations.
CLEARANCE SALE, without reserve, by order of Mr. Thomas East, who requires the land immediately for Brickmaking. The First Portion of the well-grown **NURSERY STOCK**.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nurseries, Wanstead Flats, Wanstead, E., on **FRIDAY, October 30**, at 12 o'clock, 3000 Aucuba japonica, 1 to 4 feet, including many handsome and bushy plants, Andromedas, English Yews, 1000 fine Laurels, White and Purple Lilacs, Euonymus, Daphne Cneorum, 3000 Green and Variegated Hollies, selected Fruit Trees, 1000 Roses in choice assortment, a large quantity of Limes, Poplars, and other Ornamental Trees, Scotch and Austrian Pines, and other Stock.

May be viewed one day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, and Leytonstone.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their **ORCHID SALE**, on **FRIDAY NEXT, October 23**, at half-past 12 o'clock, the following **ORCHIDS**, from Messrs. Charlesworth, Shuttleworth, & Co., of Heath, Bradford, and 213, Park Road, Clapham, comprising **Ornithoglossum grandifolium** (imported), **Sophranites grandiflora** (imported), **Cattleya aurea**, **Oncidium Marshallianum** (in bud), **O. varicosum** (in bud), **Cypripedium Schlunii** (in bud), **Cymbidium eburneum**, C. Lowii, C. giganteum; also **Oncidiums, Odontoglossums, Masdevallias**, in variety all choice and healthy plants.

On view morning of Sale, and Catalogues had.

Cart House Lane Nursery, Horsell,
About 2 miles from the Woking Station, on the L. and S.W. Railway.
To GENTLEMEN, BUILDERS, and OTHERS,
Requiring really well-grown NURSERY STOCK, in perfect condition for removal.
MESSRS. WATERER AND SONS are instructed by Mr. Richard Collyer to SELL by AUCTION, upon the Premises, as above, on THURSDAY and FRIDAY, October 22 and 23, 1891, at 11 for 12 o'clock each day, the exceptionally well-grown NURSERY STOCK (the whole of which has been removed within the last two years, comprising a great variety of Ornamental Evergreen Trees and Shrubs including many fine Specimen Plants, Forest Trees, Fruit Trees, &c.)
May be viewed seven days prior to the Sale, and catalogues obtained on the Premises, and of the Auctioneers, at either of their Offices at Chertsey; opposite Booking Office, Weybridge Station; and opposite Station Entrance, Walton-on-Thames.

Preliminary Notice.—Richmond Nurseries, Richmond.
UNUSUALLY IMPORTANT SIX DAYS' SALE.
EXCEPTIONALLY well-grown and rooted NURSERY STOCK, in the finest condition for transplanting, and embraces the most important LOT of STOCK OFFERED by AUCTION for many years, the quality of which is unsurpassed in the trade, a large quantity of Aucubas, green and variegated Hollies, Box, Arbutus, Cedrus Decodora, Privet, Wellingtonias, Yews, Thuias, Cupressus, Retinosporas, Portugal and other Laurels, Silver Birch, Thorns, Acacias, Poplars, Fruit Trees, &c.
May be viewed any day (Sundays excepted). Due notice will be given of date of Sale. G. AND W. STEELL.

WANTED, a SMALL NURSERY.—Plenty of Glass. Midland Town. Price low. L., Box, Rider, Birkdale.

To Florists, Seedsmen, and Others.
GENUINE SEED and FLORIST'S BUSINESS for SALE, situate in the main road, and doing nearly £2000 per annum. Lease, 10 years. Low rent. Six-roomed house, large Greenhouse and Conservatory at rear. Price, £300; Stock and Fixtures (including Horse and large Van) at Valuation.
Within a few minutes' walk of above is a NURSERY, containing one large Greenhouse (61 feet by 18 feet), with room for others. Also, on same ground, a good Stable, and two large Sheds.
For further particulars, apply to R. PECKITT, Estate Agent and Valuer, at Wellington Street, Woolwich.

FOR DISPOSAL, GARDENER'S BUSINESS, Stock, Contracts, and Outdoor Work. Reasonable price.
Apply to 240, Harrow Road, Paddington.

Tottenham.—To Nurserymen, Florists, and Others.
TO BE LET, close to White Hart Lane Station, about 1 a. 2r. 20p. of LAND, suitable for Glasshouses.
For further particulars, apply to Mr. ALFRED RICHARDS, Estate Agent, High Road, Tottenham; or, Messrs. DANIEL SMITH, SON, and OAKLEY, Land Agents, Surveyors, and Auctioneers, 10, Waterloo Place, Pall Mall, S.W.

To Nurserymen, Market Gardeners, and Florists.
TO be LET, or SOLD (through the death of the Tenant), BUSINESS PREMISES, as a Going Concern, consisting of a House and Shop, four Greenhouses, and from 2 to 3 Acres of Land, as a Nursery, in the town of Abergavenny, near the London and North-Western Railway Station. A thriving and profitable business has been, and is being carried on.
Apply to EVAN JONES, Mardy Park, Abergavenny; or, T. GLASBROOK RICHARDS, Solicitor, Swansea.

TO BE LET or SOLD.—Bargain. As POULTRY FARM, Essex. Good-sized House, Stabling, Greenhouses, &c., 1½ Acres. Freehold.—K. K., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Market Gardeners, Florists, &c.
TO LET, a KITCHEN GARDEN, with Vinery, Forcing houses, Potting-sheds, &c., in the North of London, half-an-hour from Charing Cross. All in excellent order.
Address, P. T., Davies & Co., Advertising Agents, Finch Lane, Cornhill, E.C.

FOR SALE, TWO CORNISH TRENTHAM BOILERS, 7 feet long, 3 feet 6 inches diameter, with Check Bridge Ends and three Cross Tubes, with Furnace Fittings. All nearly new. Lying in South Yorkshire.
Apply, BOILEK, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

PROTHEROE and MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Chapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.
Address, SECRETARY, 43, Great Tower Street, E.C.

Landscape Gardening.
ARTHUR M. KETTLEWELL (Author of the *Theory and Practice of Landscape Gardening*), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons.
Address, TITLEY, R.S.O., Herefordshire.

PLANTS, &c., FOR ALL PARTS ABROAD, should be sent per "Pitt & Scott's Foreign Express, 23, Cannon Street, E.C., and 25, Regent Street, S.W., London. Clear printed instructions and rates post free to any address.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World. 30 minutes from St. Pancras.

DOUBLE WHITE NARCISSUS.—Fine Strain, 20s. per 1000, on rail. Sample 50 by post for 2s., or 100 for 3s. 6d. Cash with Order.
J. J. CLARK, Goldstone, West Brighton.

PINES.—70 2-yr., and 40 1-yr., mostly Queens, with a few Smooth Cayennes, to be disposed of.—Apply, T. METHVEN AND SONS, Nurserymen, Edinburgh.

CURRENT TREES and RASPBERRY CANES, Dutch and Ruby Castle Red CURRENT, strong 2-yr.-old Trees, 10s. per 100; sample dozen, 2s. 6d. RASPBERRY CANES, best varieties, 35s. per 1000; sample 100, 5s., free on Rail. Wisbech P.O.O. with Order to Manager. R. BATHE, Fruit Farms, Wisbech.

FOR SALE, TWO FIGUS ELASTICA, from 5 to 6 feet high, suitable for stock.—Mr. FRENCH, Wren Road Nursery, Camberwell Green, S.E.

MUSHROOM SPAWN.—To ensure success, buy your spawn of the Maker direct, and satisfactory results are guaranteed. Per brick, 3d.; two by post, 1s. Per bushel, 16 bricks, 3s.; carriage paid, 4s.
E. VINCENT, Spawn Maker, 45, Lancelfield Street, Queen's Park, London, W.

PRIMULAS.—Mixed colours, large plants, including white, crimine, blue, and pink, 2s. per dozen. 15s. per 100, out of pots. Extra plants for carriage. Cash with order.—A. WHITE, late HARDY, Stour Valley Nurseries, Bures, Suffolk.

Cheaper than Ever.
ROSES! ROSES!—A Specialty. Plant at once, 30,000 Dwarf H.P.'s, in all the best exhibition varieties, true to name, grand bushy plants, well-rooted. Send for sample dozen, 6s. Carriage paid. 50 in 50 varieties, 21s., or 30s. per 100, our selection. Descriptive Catalogue, with full cultural directions, free on application. Trade supplied.
A. J. AND C. ALLEN, Rose Growers, Heigham, Norwich.

BARR'S BULBS, WINTER and SPRING.
The following Catalogues free on application:—
Catalogue of beautiful flowering Bulbs for all seasons.
Catalogue of all the best and most beautiful Daffodils (Narcissi).
List of rare and beautiful Croci and Meadow Saffrons.
COLLECTIONS of BULBS, 10s. 6d., 21s., 42s., 63s., & upwards.
COLLECTIONS of DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s.
Hyacinths, Tulips, Crocus, Daffodils, Iris, Paeonies, Lilies, &c.
BARR AND SON, 12, King Street, Covent Garden, London, W.C.

S. SHEPPERSON'S SPECIAL OFFER of fine English-grown HARDY BULBS, for present planting in the open ground, or for potting for Greenhouse. Fine Double pure Snow-white Gardenia-flowered NARCISSUS, 15 for 1s.; 50 for 2s. 6d.; 100 for 4s. Carriage free. Extra large double SNOWBLOOMS, 40 for 1s.; 100 for 2s. Carriage free.
S. SHEPPERSON, Florist, Prospect House, Belper.

FOR SALE, CARNATIONS, Germania and Mrs. R. Hole, Double Violet, Queen Victoria, Late Flowering Purple, Hardy White Primrose, Gilbert's Harbinger. Price per dozen or 100 on application to W. H. DIVERS, Ketton Hall Gardens, Stamford.

ANTHONY WATERER invites from intending Planters an inspection of the following well-grown and finely-rooted EVERGREENS:—

- ABIES CANADENSIS (Hemlock Spruce), 5 to 8 feet.
- .. DOUGLASHI, 6 to 12 feet.
- .. GLAUCA, 5 to 8 feet.
- .. HOOKERIANA (Pattoniana), 3 to 6 feet.
- CEDRUS ATLANTICA, 4 to 8 feet.
- .. GLAUCA, 3 to 6 feet.
- .. LEBANI (Cedar of Lebanon), 4 to 10 feet.
- CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
- .. LUTEA (Golden), 3 to 6 feet.
- JUNIPERUS CHINENSIS, 3 to 10 feet.
- .. AUREA (Golden Chinese Juniper), 3 to 8 feet.
- PICEA CONCOLOR, 3 to 7 feet.
- .. GRANDIS, 5 to 8 feet.
- .. LASIOCARPA, 4 to 8 feet.
- .. MAGNIFICA, 3 to 5 feet.
- .. PUNGENS, 1½ to 4 feet.
- .. GLAUCA (Blue Spruce), 1½ to 4 feet.
- PINUS AUSTRIACA, 3 to 7 feet.
- .. LARICIO, 3 to 4 feet.
- THUIOPSIS BOREALIS, 4 to 7 feet.
- .. DOLABRATA and VARIEGATA, 3 to 8 feet.
- THUIA LOBBII (gigantea), 5 to 9 feet.
- .. OCCIDENTALIS LUTEA (Golden), 3 to 4 feet.
- WELLINGTONIA GIGANTEA, 3 to 7 feet.
- YEWS, Common, 3, 4, 5, and 6 feet.
- .. Golden, of all sizes up to 10 feet, in various forms, Pyramids, Globes, and Standards, in point of variety, size, and quality unequalled.
- .. Golden Seedlings, 3, 4, to 8 feet.
- .. Irish, 5 to 10 feet.
- .. Golden, 3 to 6 feet.
- AUCUBA JAPONICA, 2½ to 4 feet.
- BAMBUSA METAKE, fine clumps, 4 to 7 feet.
- BOX, Green and Variegated, 3, 4, 5, and 8 feet.
- HOLLIES, Common, from 3 to 10 feet.
- .. ALTAICERENSE,
- .. HODGINS or NOBILIS,
- .. LAURIFOLIA,
- .. MYRTIFOLIA,
- .. SCOTICA,
- .. Yellow berried, and other sorts
- .. Variegated, of sorts, 3, 5, up to 10 feet.
- .. Golden Queen, 4, 5, up to 10 feet.
- .. Silver Queen, 4, 5, up to 10 feet.
- .. Weeping Perry's (Silver Variegated), on straight stems, with heads of 19 to 15 years' growth.
- .. New Golden Weeping.
- RHODODENDRONS, 3 to 8 feet.

Knap Hill Nursery, Woking, Surrey.

EXHIBITIONS.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON, CHRYSANTHEMUM and FRUIT SHOW, OCTOBER 27 and 28.
ONE HUNDRED POUNDS in PRIZES.
Entries will be received up to Morning Post on the 22nd.)
C. S. FUIDGE, Secretary,
Heckfield House, New Alma Road.

KENT COUNTY CHRYSANTHEMUM SOCIETY.
The FOURTH ANNUAL GRAND EXHIBITION will be held in the Kink, Blackheath (opposite S.E.K. Station), on TUESDAY and WEDNESDAY, November 3 and 4. Over £120 in prizes. Schedules, &c., free, of E. A. SEARLE, Vale House, Park Road, Forest Hill, S.E.

ASCOT, SUNNINGHILL, SUNNINGDALE, and DISTRICT HORTICULTURAL SOCIETY.
CHRYSANTHEMUM SHOW, WEDNESDAY and THURSDAY, November 4 and 5. For particulars of open Prizes and for Schedules, apply to T. J. PATTON, Hon. Sec., Ascot.

CRYSTAL PALACE, GRAND CHRYSANTHEMUM SHOW,
FRIDAY and SATURDAY, NOVEMBER 6 and 7.
Schedules and Entry Forms on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.
Entries close on Friday, October 30.

DEVIZES CHRYSANTHEMUM SHOW,
TUESDAY, NOVEMBER 10.
For 24 Cut Blooms of Incurred Chrysanthemums, not less than 18 varieties, 1st prize, £10 10s.; 2nd, Silver Cup, value £5 5s.; 3rd, £3.
For 12 Blooms, Japanese, distinct, 1st prize, Silver Cup, value £5 5s.; 2nd, £2; 3rd, £1 5s.
For Group of Chrysanthemums, in any size pots, 1st prize, £5; 2nd, £5; 3rd, £3; 4th, £1 5s.
And various Other Prizes.
For Schedules, apply to—
THOS. KING, General Manager, The Castle Gardens.

READING CHRYSANTHEMUM SOCIETY.
FLOWER and FRUIT SHOW, November 11 and 12, 1891.
Prizes, £140. Entries close November 7.
WM. L. WALKER, Secretary,
Dunollie, Bulmershe Road, Reading.

TWICKENHAM HORTICULTURAL and COTTAGE GARDEN SOCIETY.
The ANNUAL CHRYSANTHEMUM and FRUIT SHOW of this Society will be held in the Town Hall, Twickenham, on TUESDAY and WEDNESDAY, November 17 and 18. Entries must be sent in on or before Friday, November 13.
Schedules, and all information, may be obtained on application to the Hon. Sec., MR. JAMES J. G. PUGH, 2, Heath Road, Twickenham.

SCOTTISH HORTICULTURAL ASSOCIATION.
GRAND CHRYSANTHEMUM EXHIBITION,
NOVEMBER 19, 20, and 21.
Schedules and all particulars on application to the Secretary,
ROBERT LAIRD, 17, South Frederick Street, Edinburgh.

FERNS! FERNS!! FERNS!!!—Stove and Greenhouse. Great Annual Sale. Surplus Stock; 100,000 in 25 most saleable sorts, at 12s. per 100 in 24-inch pots; out of pots, 10s. Large Adiantum cuneatum, 50s. per 100, value in Irons. Large Ferns, in variety, 45s. per 100. A. cuneatum for potting on, 12s. and 15s. per 100. Palms, 15s. per dozen, in 48's. Packed free for Cash with Order.
J. SMITH, The London Fern Nurseries, Loughboro' Junction, S.W.

DOUBLE PRIMULAS.—DOUBLE PRIMULAS, extra fine plants, three to four crowns on each plant, in 5-inch pots, 9s. per dozen; packing free.
J. B. DOLBY, Victoria Nursery, Sleaford.

PTERIS TREMULA, from Boxes, nice clean stuff, 4s. per 100, 3s. per 1000. ADIANTUM CUNEATUM, 3s. 6d. per 100. Cash with order.
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ASPARAGUS, of fine quality—for forcing and planting; 2-yr. old, 2s. 3d. per 100; 3-yr. old, good roots, 3s. per 100; ditto, selected, 4s. per 100; 6d. per 100 less for quantities of 1000 and upwards. For forcing, 4-yr. old, 5s. per 100; 5-yr. old, splendid sorts, 7s. 6d. per 100; ditto selected, 10s. per 100; 6-yr. old, extra fine, 12s. 6d. per 100. Cash with order. My Asparagus always makes top price at Covent Garden. Read the following unsolicited testimonial:—"Please send me another 200 of 5-yr. old Asparagus Roots. I may say that the last 200 were the best lot of forcing roots I ever bought, and my employer says the quality is excellent."
C. H. PERKINS, The Gardens, Milton Abbey, Blandford, December 27, 1890."
J. J. CLARK, Market Gardener, Goldstone, Brighton.

SUNFLOWERS—SUNFLOWERS (PERENNIAL).
Trade Offer, for Prompt Delivery.
HARTLAND'S IRISH PLANT, SOLEIL D'OR, beautiful double-quilled. 20s. per 100; 3s. per dozen.
HELENIUM BOLANDERI, honey-scented, and Summer-flowering; Bees so fond of it; Bloom, yellow; Excellent for cutting. 20s. per 100; 3s. per dozen.
HELIANTHUS MULTIFLORUS, as figured in *Gardeners' Chronicle*, October 10. 7s. 6d. per 100.
All for Immediate Order, and Cash remittance.
Wm. Baylor Hartland, F.R.H.S., Seedsman, Cork.

TO INTENDING PLANTERS.

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CONIFERS, RHODODENDRONS, EVERGREENS, PARK & FOREST TREES,
FLOWERING SHRUBS, FRUIT TREES, VINES, ROSES, &c.,

IS IN EXCEEDINGLY FINE CONDITION THIS SEASON.

Full particulars will be seen in their general CATALOGUE, which may be had post free on application. Special Prices charged for any particular articles.

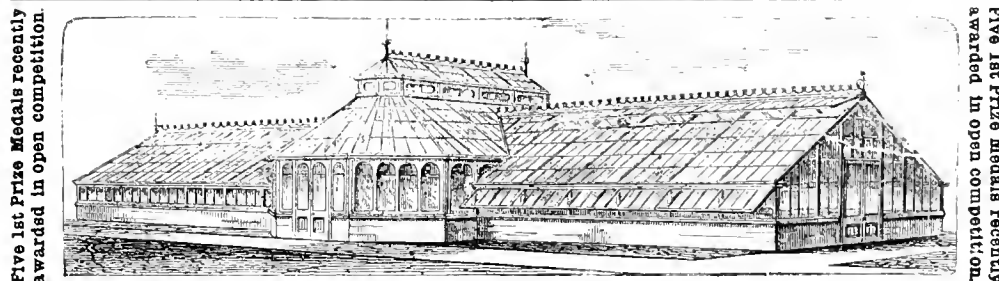
Inspection solicited, but to save time enquiries should be made as to which nursery any particular stock is growing; but samples may be seen during the season at Highgate.

Laying-out New, or Renovating Old Gardens, and Planting same in any part of the Kingdom; and Estimates may be had for this work if desired.

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Also NURSERIES, BARNET, HERTS, and FINCHLEY, N.

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ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

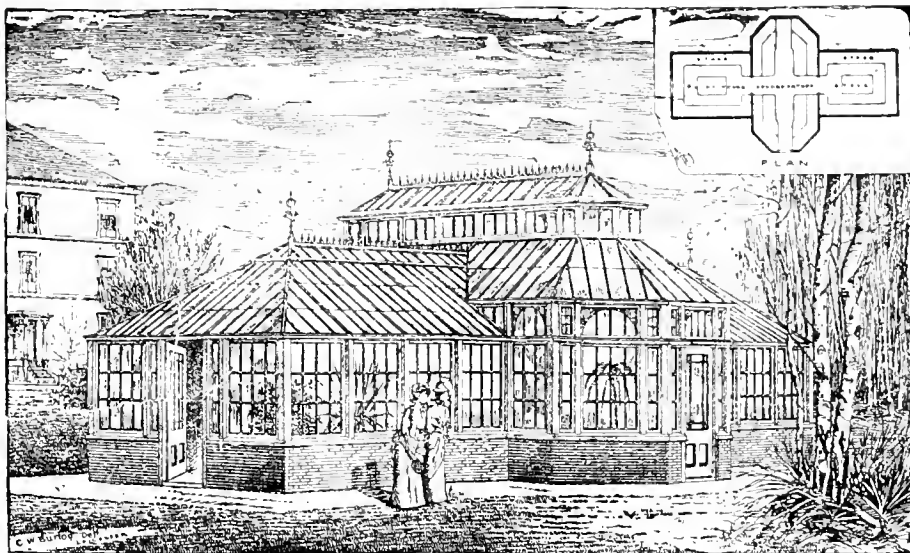
Vinerias, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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MODERATE CHARGES. FIRST-CLASS WORK. THE BEST MATERIALS.



MESSINGER & CO.'S New CATALOGUE of Greenhouses and Heating Apparatus,

Just issued, will be found the most complete, practical, and reliable guide to all about to build, alter, or heat Greenhouses. Illustrations of every description of Glasshouse, from the largest range of Winter Gardens to the simplest forms of Portable Greenhouses, Plant Protectors, and Garden Frames; also of all the best kind of Boilers, Hot-water Pipes, and all appliances for heating. This Catalogue, possessing hundreds of illustrations of all the latest improvements in greenhouse building and heating, is on a scale never before attempted. It should be in the hands of every one interested in gardening, as it contains many practical hints on the subjects of which it treats, the result of many years' experience. Price 2s. post-free.

A large number of the illustrations are taken from greenhouses erected by us in various parts of the country; an inspection of this Catalogue shows, therefore, the efficiency of which has been well tested by actual use. The advantages possessed by us enable us to carry out work with the utmost promptness, and in the very best style, at prices which defy competition. Surveys made, and gentlemen waited on in any part of the country. Plans and Estimates free on application.

MESSINGER & COMPANY, LOUGHBOROUGH.

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The following, in splendid condition, have just arrived from our Collector:—

- KENTIA FORSTERIANA, 20s. per 1000.
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HOOPER & CO., Limited, COVENT GARDEN, W.C.

FRUIT TREES.—APPLES,

PEARS, PLUMS, CHERRIES, PEACHES, APRICOTS, NECTARINES. A grand assortment of all the choicest Varieties in fine Standard, Dwarf, and Trained Trees. Also a fine Collection of GOOSEBERRIES, CURRANTS, RASPBERRIES, STRAWBERRY PLANTS, &c.

ROSES.—HYBRID PERPETUALS and TEAS. A very fine Collection.

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A very fine assortment, including all the most beautiful sorts, at moderate prices.

Before planting, send for our beautifully Illustrated CATALOGUE of the above, gratis and post-free to all intending purchasers.

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THE VERY BEST BULBS AT LOWEST RATES.

LARGE & VARIED COLLECTIONS OF
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CROCUSES, SNOWDROPS,
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All thoroughly ripened and in excellent condition for planting.

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Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILIUMS, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,
SEED and BULK MERCHANTS,
EXETER STREET, STRAND, LONDON, W.C.

SPECIAL CULTURE OF

FRUIT TREES AND ROSES.

A LARGE AND SELECT STOCK IS NOW OFFERED FOR SALE.

The Illustrated and Descriptive Catalogue of Fruits, post-free, 3d.

The Descriptive Catalogue of Roses, post-free.

THOMAS RIVERS & SON,
THE NURSERIES,
SAWBRIDGEWORTH, HERTS.

CARNATIONS.—CARNATIONS.

Per doz.—s. d.		Per doz.—s. d.	
Vivid, bright scarlet ...	4 6	Marchioness of London- derry, white... ..	4 6
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Maid of Athens, white, beautifully marked	6 0	Scarlet Clove	6 0
with pink	6 0	Germania	18 0
Raby Castle, deep pink... ..	6 0	Souvenir de la Malmaison	9 0
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Fine Border Varieties, our selection, 6s., 9s., and 12s. per doz. All fine, strong stuff, in 3-inch pots.

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HERD BROS., Victoria & Castle Nurseries, PENRITH.

L'HORTICULTURE INTERNATIONALE, Limtd.

Directors: Messrs. J. LINDEN and LUCIEN LINDEN.

PARC LEOPOLD, BRUSSELS, BELGIUM.

SPECIAL EXHIBITION OF CATTLEYA LABIATA AUTUMNALIS IN FLOWER.

OPEN on the 17th of OCTOBER, 1891, and FOLLOWING DAYS.

MESSRS. LINDEN wishing to answer victoriously to some polemics of an interesting nature, just raised, organise in the halls of L'HORTICULTURE INTERNATIONALE, Brussels, a

SPECIAL EXHIBITION, SHOWING MORE THAN 200 CATTLEYA LABIATA AUTUMNALIS IN FLOWER.


This magnificent show, UNIQUE OF THIS KIND till to-day, will certainly prove to everyone, and demonstrate also to the least perspicacious observers, the perfect identity of **CATTLEYA WAROCQUEANA** with the **OLD AUTUMN-FLOWERING CATTLEYA LABIATA VERA.**

ALL LOVERS OF ORCHIDS are heartily invited to visit this special exhibition, which is fully conclusive in the matter.

AMATEURS who have any old C. LABIATA AUTUMNALIS blooming now are requested to bring with them some fresh flowers of their plants, in order to have a comparison with the CATTLEYA WAROCQUEANA of the show.

The ORCHIDISTS will find there Cattleyas in flower with single or double sheaths, the one green, the others red; in many cases the same are simultaneously single or double on the same plant, frequently there are up to five flowers on each sheath in full blossom. They will find there an INNUMERABLE TREASURE OF VARIETIES of all shades, some of them being far superior in splendour and EXQUISITE BEAUTY to the most emergent types already known.

MESSRS. LINDEN say not that their CATTLEYA LABIATA AUTUMNALIS have been collected on the "SWAINSON'S HUNTING GROUND," which no one knows to-day; but they state that their plants are TRUE C. LABIATA AUTUMNALIS, who have PROVED THEIR GENUINENESS for two seasons in the most indisputable manner, and who demonstrate also their authenticity now by numerous plants in FULL BLOSSOM.

 **CAUTION.**—Messrs. LINDEN earnestly beg Amateurs, who have bought direct some plants of their introduction, to mark the same in a very reliable and distinct manner, as they would not care TO BE MADE RESPONSIBLE for the disappointment which may arise in the Spring of next year for the buyers of the plants recently imported in England, whose Importer says that "THEY ARE NOT THE SAME AS THOSE OF MESSRS. LINDEN."

WHO HAS SEEN IN FLOWER the imported Cattleyas recently sold for C. LABIATA AUTUMNALIS in England?

THEY WERE COLLECTED in summer by a collector who departed from Europe at the end of last spring.

COME TO SEE the SPECIAL EXHIBITION of L'HORTICULTURE INTERNATIONALE. There you will find TRUE and GENUINE CATTLEYA LABIATA AUTUMNALIS in flower.

The fact that L'HORTICULTURE INTERNATIONALE, in adopting the provisional name of CATTLEYA WAROCQUEANA until the plant should have proved, by two seasons' flowering, to be the true old CATTLEYA LABIATA AUTUMNALIS, has given GREAT CREDIT and CONFIDENCE to this Firm on all sides.

 **THERE IS NOTHING SENT OUT BY THIS FIRM UNTIL IT HAS PROVED GENUINE.** 

A grand lot of the TRUE CATTLEYA LABIATA AUTUMNALIS—plants in sheaths and in flower—will be SOLD by AUCTION, by Messrs. PROTHEROE AND MORRIS, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, October 30, 1891.

DARWIN ONLY GOLD MEDAL, PARIS, 1889.
NOW READY, OUR **FIRST TULIPS.**
SPECIAL DESCRIPTIVE CATALOGUE.

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"NE PLUS ULTRA" Collection (50 vars.).
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Prices, 6d., 9d., 1s., 1s. 3d., 1s. 6d., and upwards each.

For full details, see *Gardeners' Chronicle*, July 4, 1891 (p. 10, 11), and our DARWIN TULIP CATALOGUE, which will be sent free on application to

E. H. KRELAGE & SON,
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Please mention *Gardeners' Chronicle*.

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CHOICE and CELEBRATED
HYACINTHS.

50 CHOICE NAMED HYACINTHS, **30/-**
in 25 sorts, for cultivation in pots or glasses. Carriage Free.

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in 12 sorts, for cultivation in pots or glasses. Carriage Free.

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CARTERS' ILLUSTRATED CATALOGUE, containing a beautifully Coloured Plate, GRATIS and POST FREE to Customers.

Royal Seedsmen by Sealed Warrants,
237 HIGH HOLBORN, LONDON
238



THE
Gardeners' Chronicle.

SATURDAY, OCTOBER 17, 1891.

TEDWORTH HOUSE.

IT is possible that some persons might not expect to discover much picturesque beauty in the residence of the late T. Assheton Smith, "the Field-Marshal of Fox-hunting," as the Duke of Wellington called him—a Nimrod so devoted to the chase, that he followed the hounds six days a week, and, to enable him to do so, kept ninety couple of hounds at Tedworth, besides eighty more at work in different parts of Wales and Wilts. But the M. F. II. who erected the cottages at Tedworth, each with a tidy garden and a porch festooned with Roses and Honeysuckles, with the scarlet-fruited Pyracantha climbing the walls, must have possessed taste and good feeling.

The biography of the great fox-hunter shows him to have been a man of sterling merit, and the beauty of the house which he rebuilt, and of the grounds he formed around it, denote refined habits and tastes, and a true horticultural instinct. Energy was one of his leading characteristics. His motto, and the maxim which guided his conduct, was "*Quicquid vult, valde vult.*" In everything he undertook, ship-building as well as fox-hunting, the development of his slate quarries, or the amelioration of the condition of his Welsh labourers, he worked with all his heart. Fox-hunting may not be the most elevating pursuit a man can engage in, but it is not an ignoble amusement. It is healthful too. Dryden rightly says of it:—

"Better to hunt in fields for health unbought,
Than fee the doctor for a nauseous draught."

The lord of Tedworth and of the very valuable slate quarries at Vaenol, in the Menai Straits, possessed a heart somewhat tough perhaps, but the story of his big conservatory reveals its kindness. When Mrs. Smith declined the voyage to Madeira, which her doctors recommended, her husband provided for her use a conservatory which, with the glazed corridor from the house, measured 965 feet in length. "We will bring Madeira to England," he said. The conservatory itself was 315 feet long by 40 feet wide, and a broad walk of the finest gravel passed up the centre, having specimen plants on each side. The whole of this structure, nearly a quarter of a mile in length, was comfortably warmed, and here Mrs. Smith found a healthful promenade; and here, during the last winter of his life, the great foxhunter himself was accustomed to take daily rides from end to end. When this novel glasshouse had served its purpose, it was removed to Pokesdown, Bournemouth. Another conser-

TRANSVAAL NATIVE BULBS, TUBERS, SEEDS, &c.—The undersigned, late of the Botanic Gardens, Maritzburg, Natal, begs to inform his correspondents that he is now offering Novelties of Merit, collected by him, true to name. Anomatheca, Babiana, Trichode-ma, Moray, Hamantbus, Gerbera, Rhamnus, &c. Price List on application. R. W. ADLAM, Pretoria, Transvaal.

NARCISSUS.—Double White Sweet-Scented Gardenia, 2s. 6d. per 100; 20s. per 1000. Grand Monarque Polyanthus NARCISSUS, 6s. 6d. per 100; 60s. per 1000. GLADIOLUS, The Bride, 3s. per 100; 25s. per 1000. Cash. Mention this paper.
PONTEY'S Seed and Bulb Warehouse, Plymouth.

Williams'
AUTUMN, WINTER FLOWERING,
AND
FORCING PLANTS.

Prime Quality, in Splendid Condition,
Now Ready for Delivery.

- ACACIA ARMATA, covered with buds.
- AZALEA INDICA, finest kinds for forcing.
- " MOLLIS, loaded with buds.
- " GHENT VARIETIES, very fine.
- BEGONIAS, winter-flowering.
- BOUVARDIAS, crowned with flower-buds, including the latest novelties.
- CAMELLIAS, fine sorts, well set with flower.
- CARNATIONS, tree varieties, loaded with buds.
- CYCLAMEN, our superb Giganteum strain.
- DAPHNE INDICA RUBRA.
- DEUTZIA G ACILIS, splendidly set with flower buds.
- DIELYTRA SPECTABILIS, extra strong.
- EPACRIS, of sorts, very fine for winter.
- ERICA HYEMALIS, GRACILIS, CAFFRA, &c.
- GARDENIAS, best sorts, well bud led.
- HYDRANGEA PANICULATA GRANDIFLORA.
- KALMIA LATIFOLIA, covered with flower buds.
- LAURUSTINUS, dwarf stems, compact heads.
- LILAC A' BA VIRGINALIS, fine pot plants from Paris.
- " CHARLES X.
- " PERSICA.
- LILY OF THE VALLEY, fine clumps from Holland.
- LILIUM HARRISI, extra strong, from America.
- PRIMULA SINENSIS ALBA PLENA, in fine varieties.
- ROSES, finest Teas and Hybrid Perpetuals, strong plants grown in pots for forcing.
- SOLANUM HYBRIDUM, Empress, and other kinds.
- SPIRÆA ASTILOIDES, a charming plant.
- " JAPONICA, extra strong imported clumps.
- STAPHYLEA COLCHICA, fine, from South of France.
- VIEURNUM OPULUS (Quelder Rose), imported pot plants.

For Complete List and Prices, see Illustrated Bulb Catalogue, Gratis and post free on application.

B. S. WILLIAMS & SON,
Victoria and Paradise Nurseries,
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PLANTING SEASON.
HARDILY-GROWN
FOREST, FRUIT,
& ALL OTHER
TREES & PLANTS,
EVERGREENS, ROSES, &c.
NURSERIES 400 ACRES:
VERY EXTENSIVE STOCK. Inspection invited.
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Over 100 Acres, Nursery Stock.
NOW is the Time to Order.
ROSES—ROSES—ROSES,
FRUIT TREES,
Ornamental Trees and Shrubs,
FOREST TREES,
And HEDGE PLANTS.
RHODODENDRONS, AMERICAN PLANTS.
CLEMATIS, IVIES, and
HARDY CLIMBING PLANTS.

NEW ILLUSTRATED CATALOGUE
Of all above, may be had POST-FREE.

Wm. CLIBRAN & SON,
Oldfield Nurseries, Altrincham;
Also, 10 and 12, MARKET STREET, MANCHESTER.

DUTCH FLOWER BULBS.
Miscellaneous, Bulbous, & Tuberous-rooted Plants.

THE NEW CATALOGUE (81st year), of these Articles (No. 509), of E. H. KRELAGE AND SON, NURSEYMEN, SEEDSMEN, and FLORISTS to the Court, Haarlem (Holland), has been published, and will be sent, post free, and without charge, to all who apply for it by prepaid letters, direct to

E. H. KRELAGE & SON, Haarlem, Holland.

vatory was built by Mr. Smith, forming a beautiful promenade 150 feet long, with a marble floor, leading from the house and ending in a circular recess, which is now decorated with Palms and Tree Ferns, while Geraniums, Fuchsias, and various creepers cover the walls.

Mr. T. Assheton Smith has been described, not inaptly, as a "miracle on horseback." At eighty years of age, he used to gallop down the steep slopes of the Wilts' Downs, joyous as a boy, and when shattered by illness, a little later on, he would mount his horse as long as it was possible for him to do so, and always seemed wonderfully revived in the saddle, though he was rather given latterly to falling off, the steeds he persisted in mounting being far too spirited for an aged and infirm rider. I have felt greater interest in this famous sportsman, and have given him more space here on account of the improved gardens which he formed at Tedworth, and his attachment to them. By his own desire, he was buried in his garden. Dying in 1858, at the age of eighty-two, he rests by the side of his attached wife in a mausoleum, erected on high ground, among the beautiful shrubberies on the west side of the house, a most peaceful spot, where, as I came reluctantly away, the ringdoves were cooing softly.

Tedworth House, with its beautiful park and the hills and woods around it, is now the property of Sir John Kelk, Bart. The handsome house, rebuilt by Mr. T. A. Smith when he succeeded to the family estate in 1826, has been much improved by the refronting of the building in the Italian style, and the erection of a new porch. It is a particularly handsome house, with two storeys and a balustrade, and a lawn and flower garden extending round its two best sides—on the south and east. On the south front, Bay trees in tubs, trained as pyramids, 10 feet high, are ranged along the wall, presenting a very stately appearance. The trees are removed in the autumn, and kept securely in a sort of annexe to the house on the west side. At the time the bedding plants are turned into their allotted borders and beds in May, the lawns on the south front are subjected to a transformation of a rather novel character. The number of bedding plants which a gardener can now press into service in forming his designs has, of course, enormously increased, and in those large gardens, where the decorative art is exercised on a large scale, or in some of our public parks, three groups of plants are usually employed. Alpines, herbaceous, and the large class of greenhouse bedders, including flowers and foliage plants. At Tedworth House, the park and the immediate surroundings are so particularly pleasing, that the pleasure of the scene from the windows is not specially dependent on flowers. Mr. Inglefield, however, has reason to be proud of the use he makes in dressing the lawn, of some good old standard specimen plants. In winter you will find, safely housed, a large number of Pelargoniums, ten and twelve years old; and Heliotropes, trained to suitable supports, and some of them reaching a height of 10 or 12 feet, while others are much shorter. On the appointed day, in early summer, these old favourites are grouped at points of vantage, or arranged alongside some gravel walks leading to a shrubbery and into the park beyond, in the direction of the kennels. The supports of these plants are made of wire, and by placing the taller specimens in the centre and shorter ones at their base, they can be built up, so to speak, into the form of pyramids, which, in some cases, are 7 feet across at the base. Standard Heliotropes (President Garfield and others), with

stems 3 to 4 feet long, are planted in the flower garden, in the midst of scarlet-flowered Begonias; they are tied to an upright wire, which carries a spreading top, umbrella-fashion, from which the Heliotrope trails gracefully. This sort of decoration would perhaps be more common if some of the materials were not quite so long in coming to perfection.

From the best windows of the house, one looks across the flower garden into a park that covers a large extent of land, and passes on the left up the steep sides of a long hill, which forms its picturesque boundary in that direction—a chalk ridge, well timbered at the top, and having a lofty tower among the trees, which was built by Mr. Smith in his last years, that he might still observe the running of his hounds, and watch the "Tedworth Hunt," though he could no longer follow it in the field. Salisbury lies due south, and the high road thither runs through the park, entering near the gate of the beautiful village church, which was erected at great cost within the park by the late baronet, who will be remembered as the builder of the Albert Hall, the Prince Consort Memorial, and the Alexandra Palace. At the top of the approach road, which passes between rows of Lime trees, there are several noble Elms of the common English variety, the largest measuring 20 feet in circumference at 5 feet high.

In the kitchen gardens, which, with the flower garden, employs fourteen men, there are some handsome borders of hardy herbaceous plants ornamenting the long walks of a plot of 4 acres within the walls. Besides the numerous houses and five vineries, and many others for flowers and fruits, Orchids, and various plants for decoration, I noticed 50 yards of Peaches looking exceedingly well on a wall enclosed by glass, the passage being wide enough for the storage of many plants, and for growing salads. It is due to Mr. Inglefield to mention him as the winner of 1st prize for forty-eight Chrysanthemums at the Crystal Palace.

It should be mentioned in connection with Tedworth, that the mansion stands on the site of an old manor-house, and that the older building, owned in 1661 by Mr. Mompesson, was at that time haunted by an "invisible drummer," of the same family as the one at Hurstmonceux Castle, who was immortalised in verses by Addison. He drummed here in Wilts, but in the little village immediately outside the gates, the boundary between Wilts and Hants is passed, and he would have beat his drum in the latter county. *H. E.*

NEW OR NOTEWORTHY PLANT.

ORNITHOGALUM (CARUELIA) SAUNDERSIÆ, *Baker, n. sp.**

THIS new species of Ornithogalum has just flowered at Kew for the first time. It was raised from seeds sent by Mrs. Katherine Saunders in December, 1887, in a collection of fifty-eight packets, gathered in the Transvaal, Swaziland, and Zululand. It ranks amongst the tallest species of the genus, and structurally belongs to the small sub-genus named by Parlature (as a genus) in compliment to Dr. Caruel. Its nearest ally is *O. arabicum*, L., which is widely spread in the Mediterranean region.

* *Ornithogalum (Caruelia) Saundersiæ*, Baker, n. sp.—Bulbo magno globose; foliis loratis viridibus glabris flaccidis pedalis vel sesquipedalis; scapo stricto valido tripedali, floribus subumbellatis; pedicellis longis ascendentibus; bracteis lanceolatis magnis; perianthio albidis, segmentis orbicularibus valde imbricatis; staminibus perianthio duplo brevioribus filamentis conformibus; ovario globose nitido atroviridi, stylo brevi. *J. G. Baker.*

Bulb large, white, globose. Leaves many, lorate bright green, flaccid, glabrous, 1 foot or 1½ foot in length, 2 inches broad at the middle, narrowed gradually to the base and erect. Scape stout and erect, terete, 3 feet long. Flowers many, sub-umbellate; outer pedicels 1½ to 2 inches long, erecto-patent; bracts large, lanceolate. Flower white, faintly tinged outside with green, rotate when fully expanded, 1 inch in diameter; segments orbicular, much imbricated. Stamens about half as long as the perianth; filaments uniform, lanceolate; anthers small, nearly black. Ovary shining, sessile, blackish-green; style short, cylindrical, tapering upwards. *J. G. Baker.*

ORCHID NOTES AND GLEANINGS.

CATTELEYA LABIATA, *Lindl.*

FURTHER materials come to hand to elucidate the question of the identity of the variety Warocqueana with the old autumn-flowering type, in the shape of six different flowers, from the same number of plants, from Messrs. Linden, of Brussels. They have all the characteristics of the ancient plant, and, as I said before, are not distinguishable from it. As in the case of those received last autumn from the same source, they are larger than any of the specimens of the ancient type now preserved at Kew, but this could easily be explained, and does not constitute a tangible difference. They have the same brilliant colour, they flower at the same period, and as I am now told that they came from Brazil, it only confirms the opinion I previously expressed, namely, that the variety Warocqueana is only a synonym of *C. labiata*, and therefore the newer name will have to be cancelled. There is an appreciable difference between the six flowers in the breadth of the petals and lip, in the shade of colour, and in the amount of yellow on the disc; but this is only what was observed years ago.

I may also add a note here, which I previously overlooked, respecting a second discovery of Gardner's. When at the little hamlet of Capucaya, on the banks of the Rio Parahyba, which forms the boundary of the provinces of Rio de Janeiro and Minas Geraes, on March 29, 1841, he writes:—"On the stems of the trees in the forest I met with many fine Orchideous plants, one of the most abundant, and certainly the most beautiful, being the *Cattleya labiata*." *Travels*, ed. 2, p. 410. Even here the plants were not secure, for on the previous page he writes:—"In riding along, I could not help feeling deep regret that in these regions many square leagues of such forests were being cut down or burned, in order to make room for plantations of Coffee." This has been supposed to be the June-flowering variety Warneri, but I believe it was what Gardner states, for I have now certain evidence that late examples do continue flowering in Brazil, not only into the new year, but actually into the month of March. *R. A. Rolfe.*

CATTELEYA HARRISH × (*C. GUTTATA LEOPOLDII* × *C. MENDELII*).

THIS beautiful hybrid is now in flower in Messrs. Jas. Veitch & Sons' nurseries, Chelsea. The flowers are 5 or 6 inches in diameter. The sepals and petals are pale purplish-rose, sparingly dotted with crimson. The labellum, which somewhat resembles that of a fine form of *L. elegans* Turneri, has the side lobes bluish-white, the acute apex of each lobe being bright crimson. The large and flat middle lobe is bright amethyst-purple. It is a very fine showy variety, and evidently a good grower.

THE ORCHID ROCKERY AT CHELSEA.

NEVER short of flower, a good display of rare things is to be found in the ornamental rockery-house at Messrs. Jas. Veitch & Sons, used for displaying some of the showier Orchids in bloom. Among those at present out are a large specimen of *Sobralia xantholeuca*. Some good *Cattleya aurea*, a large lot of *Vanda Kimballiana* in flower, and *V. Amesiana* in bud;

Dendrobium ciliatum, *D. phalaenopsis*, and *D. bigibbum*, *Lælia grandis tenebrosa*, and some plants of white *Lycaste Skinneri* and *Cattleya Harrisonie* are of the latter, having six spikes, with five or six flowers on most of them. Two plants of *Vanda Lowii* are blooming in an adjoining house, and a most bewildering variety of beautiful hybrid *Cypripediums*. The grand house of *Nepenthes* or Pitcher-plants too, perhaps, never looked so well and profusely furnished with pitchers.

and fifty years, as in this case. The bunches of Muscat of Alexandria, Madresfield Court, Black Hamburg, Foster's Seedling, and Lady Downes were all of extra size, while Mrs. Pearson was finer than we ever remember to have seen it before. No Grapes are grown here merely for appearance, the quality is the first consideration. For the earliest crop, Mr. Speed rightly depends upon pot Vines thus saving his permanent ones to a great extent. Figs are remarkably fine, Brown Turkey being the

by the splendid crops of fruit, and the vigour of the trees. Those in the earlier houses have already been lifted; by doing this work early, the trees make fresh fibrous roots before the leaves fall. Royal George Peaches and Pine-apple Nectarines are two favourite kinds. For late use, Princess of Wales and another Peach are most promising, with very heavy crops. Pines are looking well, with a lot of useful fruit coming on for autumn use. Melons are largely grown, the season of which is here prolonged



FIG. 58.—A VIEW OF PENRHYN CASTLE.

PENRHYN CASTLE GARDENS.

A VISIT to these well-kept gardens is always instructive from a gardener's point of view, a high standard of cultivation being aimed at by Mr. Speed. In a recent visit, we were much pleased with the appearance of things throughout, and that in spite of the unfavourable season. Both fruits and plants are well done at Penrhyn. Grapes are now in splendid condition, having more the appearance of Vines but a few years old than of those of between forty

favourite kind, fruits of the second crop being ripe, and of extra size and quality. The trees are trained very thinly, thus affording a free circulation of air, with the beneficial effects of more light. The largest tree in the Fig-house measures 70 feet or more in width, and is in the best of health. Peaches and Nectarines are largely grown under glass, more so, possibly, through their not succeeding well out-of-doors. Unless the trees are annually lifted, Mr. Speed finds that the fruit-buds drop; that his treatment is sound is abundantly borne out

by having the first crop ripe in April, the latest being carried well into the autumn. A kind called Penrhyn Seedling is largely depended upon, and well spoken of. Tomatos are extensively grown both inside and out, in both cases the crops are, and have been, very heavy; Ham Green and Ruby are the most approved kinds. Morello Cherries are an extra fine crop, a portion of which are grown upon slate walls some 7 feet in height, the fruit being large and clean. For better protection against birds, the Gooseberry quarters are enclosed in wire-

netting, an excellent system, the crop amply proving this; the Warrington is largely grown upon trellises for dessert use. Of Black Currants, Mr. Speed possesses a fine late sort now in good condition, the ordinary kinds being over some time past. To assist the dessert in the autumn, the fruits of the Granadilla (*Passiflora quadrangularis*) are found most useful, one large plant, now in profuse flower, covering the roof of a large plant-house.

Kitchen garden crops look in the best possible condition, salading evidently being an important feature. The absence of weeds in a season like the present speaks well for this department. The blight had, however, made its appearance in the Potato crop. Mushrooms are grown all the year round in commodious structures suitable for all seasons, much importance being placed upon a good supply.

Plants for decorative purposes in the Castle, and others for the supply of cut flowers, are cultivated in large numbers. A healthier lot of plants than those under Mr. Speed's charge is rarely met with. Crotons are much valued as decorative plants, one entire house being filled with an excellent stock. The narrow-leaved kinds find most favour, and are grown both as dwarf plants and from 2 to 3 feet in height, upon single stems, and as bushes. These Crotons are splendidly coloured, making a beautiful show, clearly testifying to their value from a decorative point of view. A sport, of which there are several plants, is most distinct, the tips of the narrow leaves are green, the other portions being of a deep golden colour with reddish leaf-stalks and stems. *Adiantum Pacottii*, *Caladium argyrites* (which is growing luxuriantly, is a great favourite), small plants of one of the minor forms of the fancy *Coleus*—well-coloured whilst still compact, and other dwarf-growing plants are used in quite a small state for the dinner-table in rustic baskets, a large stock being kept up for this purpose. *Dracænas* are largely grown also, *D. hybrida* finding much favour. In one house is a splendid stock of *Calanthe Veitchii* in the best of health, these are growing under the shade of *Stephanotis floribunda*, which covers the roof, being itself in profuse bloom. The tuberous *Begonias* are grown largely, making a fine display, one variety (*Davisi* lutea fl.-pl.), was quite striking because of its colour, a rich orange. The roofs in several instances are draped thinly with climbers, *Passiflora racemosa* and *Tacsonia Volkemii* being thus very attractive. In one instance the back wall of a warm-house is covered from bottom to top with *Adiantum cuneatum*, which is planted with a thin layer of soil upon the wall surface; thus a good supply for cutting is obtained. *Asparagus plumosus nanus* is being trained upon another back wall for a similar purpose. *Cbrysanthemums* are found here in large numbers, some being upon long stems for large flowers, but a greater number are bushes for the supply of flowers in quantity, all are in fine health. The earlier ones are already flowering in the open border, the yellow form of *Madame Desgranges* being one of the best. Double *Primulas* are found most valuable for cutting, the plants being of extra size and very robust. *Bouvardias* occupy a considerable space for the same purpose in pits by themselves.

Most interesting are the many comparatively tender plants which are growing out-of-doors luxuriantly, having withstood the severe frosts of the past winter. *Rhododendron Lady Alice Fitzwilliam* is in the best of health, being studded with buds for another season. This variety is planted against a south wall, and is quite at home. This plan is an excellent one for those of rather tender growth, which are at the same time of straggling habit. *Euonymus radicans variegata* covers a large space of wall, assuming quite a major form of growth as compared with the same kind when trailing on the ground. Amongst this *Euonymus* are to be seen here and there the growths of *Tropeolum speciosum* in profuse flower, producing a beautiful effect upon the light background. The double-flowering variety of the Pomegranate is thriving well, so also

is *Choisya ternata*, both being planted against a wall, the latter being a large plant; it flowers well in its season, frequently giving a smaller crop in the autumn. Upon the same wall, with various aspects, are *Aloysia citrodora*, *Ficus repens*, *Magnolia grandiflora*, and *Lapageria rosea*. The latter withstands 13° of frost with safety. In this part of the garden Mr. Speed has recently made an alteration, adding a long border for such plants as the Bamboos, all of which that are worth growing have been planted; *Eulalia japonica variegata*, *E. gracillima*, and *E. zebrina* are also doing well. Other things consist of *Lilium giganteum*, *Azalea amœna*, *Erica vulgaris alba rigida*, *Phormium* in variety, and other peat-loving plants. *Fuchsia Riccartoni* has attained huge dimensions, having reached such a height as to be capable of being trained over a wide pathway upon a wire trellis, the effect of which whilst in full flower cannot be imagined without being seen. Conifers in great variety have reached large proportions. *Wellingtonias* are in fine form, so also is *Abies Smithiana* (*Morinda*); there is also a grand plant of *Chamærops Fortunei*, which, without any protection, did not receive any injury during the severe frost.

Around the Castle there are no flower beds, thus, with the grass up to the walls, there is an air of quiet repose (see fig. 58, p. 453). Mr. Speed has done well in following out this practice. Around the outskirts of the lawn, in suitable spots, thousands of *Daffodils* in variety have been planted. Herbaceous plants, in the best-known kinds, with *Irids*, *Ranunculi*, and *Schizostylis coccinea*, are all grown for cutting purposes. A large plot is planted out with *Azalea mollis*, and specially reserved for forcing, a portion being lifted each autumn, and those previously forced planted out until again fit. These plants are of large dimensions, and must make a fine display. Mr. Speed is a gardener of sound practice, and a deep thinker; the knowledge he has gained after twenty-eight years' service at Penrhyn he is ready to impart to all who are interested in horticultural pursuits. H.

GLASS COPINGS FOR GARDEN WALLS.

In districts where Peaches and Nectarines make satisfactory growth, but do not ripen the wood sufficiently to enable it to produce strong healthy blossoms, or, where the frost frequently destroys them when they arrive at the critical stage, as a safeguard, the addition of a glass coping is well worth a trial, and the expense is trifling. The trees on the Peach and Nectarine wall at Brambletye, East Grinstead, in the garden of Donald Larnach, Esq., have produced a grand crop of fruit this year. The wall is 90 yards long and 12 feet high, and is furnished with a glass coping, 2 feet 6 inches wide, running the whole length. It is supported by wooden posts, set on pieces of stone, well raised above the ground-line. Here such varieties of Peaches as *Violette Hative*, *Grosse Mignonne*, *Noblesse*, and *Nectarines Hunt's Tawny*, *Elruge*, &c., are carrying eight to ten dozen fruits per tree. The wood appears to be ripening well, and the past summer cannot be included amongst the most favourable. The fruit on the middle of the trees, and those reaching up to the apex, beneath the glass coping, are the finest and the best coloured, and the current year's wood also seems to be favourably influenced by its proximity to the glass. No additional protection other than the glass coping was afforded the trees when in bloom, and several sharp frosts occurred at that time. During showery weather and damp nights, which are so often followed by destructive early morning frosts, the coping is of great use in keeping the blossoms dry, enabling them to withstand without injury many more degrees of frost than would be the case if the blossoms were damp.

After noting the good crops on the cordon and small pyramid Apple trees, we walked through the pleasure-grounds and around the mansion. From

the terraces magnificent views are obtainable across the valley below, and up the slopes and bills of Ashdown Forest, which is prettily wooded; in fact, the landscape surrounding the mansion on all sides could not well be surpassed in Sussex. *Visitor*, September 30.

THE CULTURE OF ALPINE PLANTS.

It has for a very long time seemed to me to be an utter impossibility to grow alpine and other plants to the best advantage on a small rockery, if it be constructed on so-called picturesque principles. I believe that the device of building a rockery *à la Mont Blanc* is not only nonsense, but almost fatal to the well-being of the subjects with which it is to be clothed. The most extreme instance of this which I have ever seen was in Battersea Park, some years ago, when a small hillock was covered at the top with *Antennaria tomentosa*, which was supposed to do duty for snow, and everything else was after the same pattern as this. But though such exhibitions may not be very commonly met with, it is true, I am sure, that alpine are often put second to the rockery on which they are grown, instead of the rockery being treated as nothing at all in comparison with them, its very form and construction being altogether subservient to their use.

Such a method as that which I have referred to above, may perhaps have its special advantage, and it is the best one to follow if a *coup d'œil* be desired. There are many splendid gardens, or ample parks, which would scarcely admit of anything else, but the price which you have to pay for it is a very large one, and the promoter must either give up the idea of growing specially difficult alpine altogether, or—and this is the only alternative which I can think of at all—the construction must cover a very large area, and, while here and there a certain number of suitable positions may be found, it is certain that very wide spaces between them will be practically lost, and little good will be got from them.

This is by no means an idea which I am singular in holding. I heard the President of the Edinburgh Botanical Alpine Club say, the other day, "We must give up either the rock plants or the rockery. It is quite impossible to do both well at the same time," by which Mr. Boyd simply meant that if we build our rockeries on purely æsthetic principles, we must in a measure, say good-bye to the flowers, while if we take them into our confidence and plainly meet their requirements, their home will, in all probability, not be very beautiful in itself. There are reasons which can be given for this, and on the strength or weakness of these reasons, any decision must turn.

A botanical friend, whose knowledge and love of plants is beyond all dispute, very lately visited my garden, and while I had expected from him a most unreserved assent (like that of Mr. Boyd), in the interest of the flowers, he could not restrain himself from lamentations over the artificiality of the plan I pursue, and he would have liked to bring boulders from Ventnor, and to give a more natural aspect to the whole thing. Of course, he may be quite right in his opinion, and was quite right in saying just what he thought, but I must have covered half an acre or more with a rockery, if the same number of suitable places for alpine plants are to be provided. I therefore think only about the well-being of my favourites, and I let other things take care of themselves. What I aim at may be called "compressed advantageousness" for alpine plants, the being able to make them contented in a comparatively small space, and then all other considerations are left out of sight. There is, however, one thing which I may as well say, by way of parenthesis, and which is not unimportant. As a rule, very artistic and picturesque rockeries cost a large sum of money. I have before my mind's eye, a construction which is said to have cost £300, and another which cost £800, and my old friend, the late Mr. Gassiot, must

have spent a very large sum over a rockery (by bringing huge rocks from Ventnor, &c.), on which he lavished the best advice he could procure, and which was beautified and adorned in the highest possible manner. But I am quite sure that in my way I can accommodate a far larger number of alpine than he could do in his way, and though I cannot speak quite positively about the following point, because I have been at work in my rockery for some four or five years, I certainly do not believe that I have expended on it much more than thirty or forty pounds for soil, labour, and stones. I must, however, acknowledge that I had a good chance with regard to the last mentioned item, and I was liberally dealt with by the authorities in Ryde.

In setting to work, I always had one thing pre-eminently in view, and I have never lost sight of it for a moment. I allude to the desirability of having a great variety of elevations and aspects, as well as of degrees of dryness, and descriptions of soil for the plants. I hold to unremitting experiment more than anything else, and if one device fails, there should be facility for turning at once to something else. In truth, before experience, it is a wonder that plants from such different latitudes and longitudes—those which grow high up on the mountain sides, and those which are sub-alpine as well, many also that have no claim to alpine honours at all—should be willing to unite in one happy assemblage, and to have a common home! and yet it assuredly is so. *Saxifraga flagellaris*, from Lapland, I believe; *Ramondia pyrenaica*, from a southern clime; *Lewisia rediviva*, from the Rocky Mountains (I think I can manage that now); *Androsace lanuginosa*, from North Indian heights; *Omphalodes Luciliae*, from the range of Mount Taurus in Asia Minor; *Morisia hypogæa*, from Sardinia; *Primula suffutescens*, from North America; *P. ciliata*, from the Western Alps of Europe; *P. Clusiana*, from the Eastern Alps; *Phytoloma comosum*, from Carpathia; *Celmisia spectabilis*, from New Zealand; *Pulmonaria dahurica*, &c., may be taken as samples of the variety of plants in my rockery, and of the widely-different regions from which they have come. Surely it is not to be supposed that they can be treated in anything like the same way, and their idiosyncrasies must be consulted, if they are to do well at all. Now, it is this very thing which I so much desire to do.

It has struck me very often that failure or success turns upon some slight and removable cause, and it is more by observation of these occasions of trouble than by anything else that one can hope to get on. My note-book is crammed full of them, and my head also. I will give just a few typical instances. I think everybody must wish to keep on good terms with *Pulmonaria dahurica*. It is a most charming little spring flower, of the brightest blue. But, unless I am mistaken, this gem is dying out everywhere. It is difficult to get hold of it now, and it bears a very bad character, indeed, for fickle inconstancy. My own experience with it has been quite of that sort; but last winter I seemed to find a clue to its requirements. I planted on my rockery, three specimens all equally good, so far as I can remember; two of them were on a lower tier of pockets than the third, this last was not far off from the others, but still a little above them, and on a very gentle incline. I believe that the difference of position made all the difference in the world to the well-being of the plants. The two lower ones died, and I never saw them at all last spring. The upper one appeared above ground at the proper time, and since has become a very strong specimen. What does this teach, but that *Pulmonaria dahurica* is very sensitive about the question of drainage, and it must never be tried on the lower level at all? This was also the case with another reputedly troublesome plant, but which cannot be called that, if it be properly used. I put *Campanula Allionii* high up on the rockery in a sandy, loamy place, and where it would get plenty of sunshine, and I also put a large patch of it where the conditions were very similar, save only that there was just a little trickling moisture to be endured. In this last situation the whole thing came

to utter grief, and it is certain to me now that *Campanula Allionii* is a lover of drought, as might almost have been supposed from its home in the Apennines.

Exactly the opposite of all this is the case with *Polygala Chamæboxus purpurea*, which should always be grown in large clumps and left alone for a time. I have found by undeniable experience that it cannot bear to be dried up, and when it has ceased to be moist, it has always ceased to do well. *Androsace eximia*, and others too, now do quite well in my hands, and the little pink blossoms abound in the spring, but this is entirely owing to their being grown in pure peat; it was far from being the case when I gave them a compost on which I relied, but which was not to their liking. They yielded up their secret through multiplied failures, and at last they were satisfied. I brought *Epilobium obcordatum* with safety through the trials of last winter, but I had inadvertently given to it a full western exposure, and as soon as the rays of the sun acquired force, it at once withered away. It was a foolish mistake on my part, and came about partly from want of room, but it will not be repeated. *Omphalodes Luciliae*, the most exquisitely tinted of all alpine plants, sickened with me in peat; it likes good fresh loam in a not very scorching position, and then it grows quickly. Perhaps the finest specimen that I have seen of this beautiful flower is in the hands of Mr. Bartholomew at Reading, but only a few paces off from it I saw a sister plant which was pining away. So exacting and inexorable in their requirements are these little beauties, that one must live among them if they are to be won over at all. Further illustrations might be given, but what has been said will suffice. If it means anything, it insists I think on the advisability of a great variety of conditions in the cultivation of alpine plants, and constant and repeated experiments reveal to us more than anything else what they like best to be treated to. A servile imitation of Nature is seldom or never possible in our hands, and when we think we have done the best in this respect, we too often find that there is something wanting after all which vitiates our proceedings altogether. With a view, then, to experimentation at every turn, I have constructed my rockery after a fashion of its own (see fig. 59, p. 439). It bears a very strong similarity in some respects to the well-known rockery in the Botanical Garden in Edinburgh, and if I had never come across that, I might not have ventured on mine; but there is a difference as well as a resemblance between the two, the main point on which they are agreed being the fact that stone pockets are more to the liking of alpine plants than anything else, and that they afford the best promise of success. The length of the whole construction is about 85 feet, and its width is about 30 feet; its height from the lowest part of the walk is 8 feet, and in shape it somewhat resembles the form of a Roman amphitheatre. All this is partly accounted for by the run of the ground, and the exigencies of a small garden, and partly because it is so made that every part of it can be very easily reached, and it is commanded by a small ladder which is kept for the purpose. There are very nearly 1500 pockets in all, and if three plants on an average be allowed for a pocket, the number may be computed at about 4500. This is exclusive of Cactuses, which do well in a sunny slope in the middle of the rockery, and which faces due south, and also of a large number of plants which grow in a wall which is from 2½ to 3 feet high, and which runs round the whole thing, and by which indeed it is held up. This wall is perforated, so to say, by the simple expedient of leaving out every alternate brick, and as it is now nearly clothed with creepers and alpine plants of one sort and another, it is as pretty an object as could well be seen in a garden, and the bricks will be soon entirely hidden. But if one thing be added to another, there is certainly a receptacle for not less than 5000 individual plants.

A perforated wall is assuredly of the greatest advantage where many alpine plants are grown. They take to it in a kindly manner, and as frost descends vertically, they can often bear to be nipped, or even cut down to the face of the wall, and in spring they

will shoot forth again as though nothing had happened. They have had a warm and cosy retreat, where no frost could reach them in winter, and where the soil—because it lies far from the surface—can be kept moist in the summer. It is, moreover, a fact that not a few very good, and some difficult plants, prefer to grow horizontally, if it can be managed, rather than in any other way, and great facilities are provided for this in a wall which is banked up with earth; the roots can penetrate far into the interior without any hindrance whatever. Some years ago, I saw clearly what protection is afforded to tender things in the chinks of an ordinary garden-wall, and of course it can be given much better in the perforated wall of my rockery. Some seeds of *Maurandya Barclayana* were blown out of my greenhouse, or carried by birds into a small crevice outside, and for several years this confessedly tender plant lived there and blossomed. It was a positive proof that an immense shelter is afforded by the kind of retreat I am speaking of, and I have tried ever since to make use of it to the uttermost. *Capparis spinosa*, *Ramondia pyrenaica*, *Edraianthus dalmaticus*, *Campanula isophylla*, and very many *Sedums* and *Saxifrages* can be grown better in this way on a wall than in any other. There is the best of homes provided by it for *Aubrietias*, *Alyssum*, *Arabis*, *Antirrhinum*, *Helianthemum*, *Statice*, *Dianthus*, *Æthionemas*, &c., to say nothing of *Ferns*, which in my hot garden can be grown in no other manner. The one which is *par excellence* the best wall plant of all, is *Campanula Portenschlagiana major*, which was kindly given to me by Mr. Wolley Dod, and which soon covers a very large surface, and hangs down in beautiful festoons. The pockets above the wall are in their way, and for quite different plants, just as useful and good. We must all cater for ourselves, and every garden has something about it which should govern all the proceedings of which it happens to be the scene. In my garden I have to fight the sun, and the glorious sunshine, which in February and March wakens up life, which gives such a depth of colour to all my flowers, is very often a great deal more brilliant in summertime than can be easily endured, and the fierce solar rays would occasion wide-spread desolation and ruin if they were not somewhat counteracted. This is the reason, or, at any rate, the main reason, why the Edinburgh pockets are so much beloved in the Isle of Wight. They afford complete protection against the scorching heat of the sun, which could not else be endured. It would be quite impossible for me to grow any *Primula* of the pubescens type without their assistance, and plants nestle into the angles which are caused by two stones. Some of my kindly critics have been rather disbelieving about this, until I explained to them what is meant. I only wish they would try for themselves, and in the hottest and most exposed position which they can find, station two exactly similar plants, and watch how they go on with and without protection being given to them. All I can say is, that before I came across the Edinburgh idea, I could never, as a rule, succeed with *Primulas* in the Isle of Wight at all. Some few, as e.g., *P. spectabilis*, were willing to stay with me for awhile, but the majority of them resented all my efforts on their behalf, and they perished accordingly. *H. E., Ryde.*

(To be continued.)

FLOWER FARMING AT MITCHAM.

ONE of the most interesting cultures still carried on in the neighbourhood of London is that of flower farming in the vicinity of Mitcham; a branch of culture, however, that is gradually diminishing as the march of bricks and mortar continues to extend the boundaries of the great metropolis. The past season, which has been so disastrous to field crops generally, has had a serious effect upon Lavender, Peppermint, and other perfume plants.

The subject of the Mitcham flower-farms has lately

been treated of in a very interesting article in the *Chemist and Druggist*. Describing the fields, the writer says:—"Most of the land was badly weeded, and in some places bare patches of soil proclaimed the ravages wrought by the winter frosts. Acre upon acre was pointed out which had been converted from Peppermint or Lavender into Potato or Cabbage land, and scarcely any new herb fields had been laid out this season. Presently we halted at a large stretch of land, whence the sweet odour of Lavender was wafted in bountiful waves. Passing through a gate, we found ourselves in a wide field, covering, may be, 50 or 60 acres. The field itself was completely treeless—no shade is wanted on herb fields—but it was sheltered in the east by a small wood, while its other sides were bounded by single rows of tall trees." It is well known that two kinds of Peppermint are cultivated at Mitcham, which are known as black and white Peppermint. These have both been described as *Mentha piperita* var. *officinalis*. As seen growing in the fields, the plants are very different from each other; the black form is a taller plant than the white, of more robust growth, has purplish stems and dark green leaves, while the white form, besides being shorter, is of a pale green throughout. "The yield of essential oil from the white is considerably less than that from the black; it is usually calculated at about three-fourths." But the largest grower of white Mint in the country estimated that the output of the white this season would be very little more than half that of the black plant. "The Peppermint plants, both black and white, are planted in long rows, and require careful weeding. The first year's crop is always a poor one, and does little more than pay the cost of production, and the farmer looks to the second and third years' crops for his remuneration. After the harvest of the third, or sometimes the fourth season, the new runners are hoed. In the month of November the old plants are ploughed in, and the new ones covered, to protect them from the frost."

Though there is such a distinct difference in the appearance of the Peppermint plants themselves, it is stated that "there are probably not half-a-dozen men living who could accurately distinguish by colour, taste, or smell the oil of the White Mint from that of the Black, but for all that, White Mitcham Mint realises a considerably higher price than Black, and is accounted the finest variety of peppermint oil extant." Besides Peppermint, Lavender and Chamomile are also cultivated to a considerable extent; both, however, suffered considerably from the severity of last winter, and the grounds this season have exhibited many ugly black patches. Many acres, indeed, both of Peppermint and Lavender grounds have this year been ploughed up and converted into Potato or Cabbage land, and scarcely any new herb fields had been laid down.

The Chamomile cultivated at Mitcham is the double-flowered form, and last year, we are informed, "That the crop was so thick, and the flower-stalks grew to such a height, that one plant touched and uplifted its neighbour, until the leaves and stalks were completely hidden, and the broad field looked as if covered with fresh snow. But this year the crop was not only late—quite half the flowers being immature—but excessively thin, and black spots of weeded earth were painfully frequent among the white and green of the plants."

The Chamomile crops in France and Belgium are also very short this year, consequently the flowers and the oil of Chamomile will realise a high price, both in the English and Continental markets. Most of the produce of the flower-farms at Mitcham finds its way to the still-house, and is distilled on the spot; but some of the Lavender is bunched and sent to Covent Garden, where, during the past season, it fetched from 3s. to 4s. per dozen bunches; but with the prospect of Lavender-oil fetching a high price, most of it was submitted to distillation. As an illustration of the price which this oil sometimes commands, it may be mentioned that in 1881 it realised as much as 8 guineas per lb., and very little could be obtained at that price. The plants which yield

essential oils require a great deal of manuring, animal manure being almost exclusively used by some growers at Mitcham, though the exhausted herb, after distillation, is also so used.

"The same stills are used, of course, for Peppermint, Lavender, and Chamomile distillation. When a charge of Mint follows one of Lavender, the worm of the still is well washed with boiling water; but if Lavender follows Mint, and especially if Chamomile has been the preceding charge, it is necessary to boil out the still with lime and water."

FRUIT NOTES.

THE STYRIAN PEAR.—In sending you some fruit last week, and asking you kindly to name them for me, I referred to the Pear Styrian, and inquired whether you could tell me how it was that so little was heard of it. It is practically never mentioned, and I do not find it in any of the catalogues. It is, however, as I said, peculiarly handsome, and a very good Pear indeed. It having ripened since I wrote you, I take the liberty of sending you two fruits, which I think will bear out what I have said, and I shall be much obliged if you can inform me why so little is heard of it. *W. H. Tillet.*

[Mr. Barron of Chiswick, to whom we sent the fruit, writes as follows. Ed.]—"The samples you have sent us of this Pear are of very fine quality, much finer than it is generally met with, although we have grown it for the last thirty years. We have always considered it a variable sort. At Keele Hall it was grown some years ago with very great success, and was in consequence put in circulation as the Keele Hall Beurré. It is an extremely handsome fruit, of medium size, long pyriform in shape."

THE WEEK'S WORK.

THE FLOWER GARDEN.

HERBACEOUS BORDERS: THEIR FORMATION AND PLANTING.—Now that the clearing of the beds of the summer flowers, and their re-filling with spring-flowering subjects are being completed, we are about to proceed with the making of two herbaceous borders, about 100 yards long and 10 feet wide, and skirting a broad gravel walk on either hand. The ground, which is under turf, like the 15 acres surrounding it, and which are thinly planted with masses and specimen flowering trees and shrubs, is planted with a row of Laburnum trees, standing 10 feet from the walk on either side. This will be taken off the spaces indicated in the ordinary way—in lengths from 24 to 36 inches, 12 inches wide, and between 1 and 2 inches deep. The soil from 18 to 24 inches deep, and consisting of a light loam resting on a substratum of gravel, will be broken up and thrown out on one side, and, being pretty close to the natural water-line, 6 to 9 inches deep of clinkers, brick-hats, &c., will be put in the bottom of each border, these being broken fine on top and then covered with the turf taken off the surface, grassy side down, to ensure good drainage. This done, the best portion of the excavated soil will be returned, mixing with it a few thin layers of short dung and leaf-mould, afterwards adding a coating 6 or 9 inches deep of red loamy soil, with which small quantities of lime, wood-ashes, soot, and horse-droppings had been incorporated, about eleven years ago, laying on another dressing of short manure and leaf-soil, and forking the whole well over to the depth of a five-tined fork, the borders being about 6 inches higher at the back than in the front when finished.

PLANTING.—In planting, all straight lines of plants of uniform height will be strictly avoided, but in a general way, the tall-growing subjects of various heights will be planted in the back rows, graduating in height from back to front, the plants forming each irregular lines varying from 6 to 15 inches in height, so as to produce a broken surface. Due regard will be paid to the planting here and there of single plants of different species known to flower in April and May, among those whose flowering-time is June and July, and so on, during the three following months; thus planted, there will be no large unoccupied spaces to mar the picture in the borders, the proportionate number of species and plants necessary to make a floral display each month during the period indicated being considered in planting. By disposing the several species and varieties in the manner described, the

large unoccupied spaces that occur in the floral picture during the spring, summer, and autumn months, where the several kinds and varieties are planted in masses, as each group of plants one after another goes out of flower, are avoided. Among the flowers which are to be planted in the rear parts of the borders, are Phlox, Delphinium, Helianthus (Sunflower), Aster, Spiræa Aruncus, Aconitum, and the like; while the body of the borders will be planted with Pæonies, Poppies, Delphiniums, Pyrethrums, Eryngiums, Potentillas, Gaillardias, Aster longifolius formosus, and A. Amellus, Gillenias, Veronicas, Erodiums, Linums, Polemoniums, Polygonatums, Aquilegias, Funkias, Fragarias, Dielytras, Doronicums, Lilliums, Francoas, &c.; using near the front, in addition to various kinds of bulbous plants, tufts of Arabis, Aster bes-sarabicus, Saxifragas, Sedum, Dianthus, Armeria, Aubrietia, Polyanthus, Gentians, &c. Among the tall-growing kinds of Michaelmas Daisies may be mentioned A. angustifolius, A. ruber, A. pulcherrimus, A. Novi-belgii grandiflora, A. Chapmanii, A. polyphyllus, and A. ericoides.

GENERAL WORK.—This will consist in dividing and re-arranging herbaceous plants in established borders and beds; the taking up and storing away in a dry place in sand of roots of Dahlias, Cannas, and such-like. Tuberous-rooted Begonias are best wintered in a cold-pit, laying the roots in soil with a good length of the tops adhering, covering the glass with a little Fern in severe weather. The making of new walks, and the re-gravelling of existing ones where necessary, will also require doing. *H. W. Ward, Longford Castle, Salisbury.*

THE KITCHEN GARDEN.

MUSHROOMS.—Beds spawned last month should be showing "buttons," and slight damping of the surface with tepid water should be afforded if it is very dry. The Mushroom-cellar or house should be kept as regards the air moderately moist, and a little fire-heat turned on at night to keep the warmth between 55° and 65°.

SALSIFY, SCORZONERA, AND CHICORY.—Of these only the finest and most shapely roots should be reserved on lifting them. A number of Chicory roots may be placed in the Mushroom-house or other dark place to bleach, following up with successions of roots to keep up with the demand. Cut off the leaves within half an inch of the crown, plant pretty close together, and keep them from the light. Parsnips are best when lifted as they are required for use, unless the soil is of a wet nature, and canker of the roots is common in those cases. Lift and store them in bins or pits in sand or fine coal-ashes. Horn Carrots sown late should remain in the ground for some time yet, that is, until they have ceased to grow.

TURNIPS, when sufficiently large, may be pulled at intervals throughout the winter, for if the weather keeps mild, they will continue to grow in size. Fully grown roots of the Turnip suffer from frost more than smaller ones, and should be pulled in time, and kept in reserve for flavouring purposes. Late sown crops of Turnips should receive surface-dressing of some kind of manure, and an occasional hoeing to aerate the soil, &c.

When the weather allows of it being done, stir the soil between growing crops. Make another planting of Cabbages; earth-up those earlier planted, affording the soil a good dressing of soot and quicklime. Late Celery, prior to being earthed up, being similarly dressed. Winter Spinach, if not making satisfactory progress, should be assisted with dressings of an artificial manure, and the plants thinned sufficiently to allow space for each to properly develop.

CELERY AND LEEKS.—These should be earthed-up in dry weather, the former for the most part finally. Too much care cannot be taken to keep the soil from falling into the hearts of the plant. The latest Celery should be examined, and every sucker pulled off, the stems tied up loosely with matting, and earthed-up when dry. Take great care to have the soil well moistened at the roots of the plants before earthing-up is begun.

GLOBE ARTICHOKE.—Cut the flower stalks down to the ground, and keep all heads fit for use in a cool shed or cellar. A heavy mulch of strawy manure should be put over the crowns, and later the stools should be protected with long litter; and in very severe weather some protection should be given to the tops—bracken being a suitable material for this purpose. *C. J. Waite, Glenhurst, Esher.*

THE HARDY FRUIT GARDEN.

PEACHES.—Late varieties of Peaches are, notwithstanding the lateness of the season, ripening much better than it was at one time thought likely they would do, but the flavour, though passable, is not good, and a really good dish of these fruits is a welcome addition to the dessert. As a late variety, Walburton's Admirable still holds its own, and the fruit is very juicy and sweet. Princess of Wales, one of the largest of the late kinds, if planted on a good aspect, and treated well, in favourable seasons it ripens well, and bears excellently. Where there are any fruits left on the trees, they should be gathered and ripened on a shelf near the glass in the vinery, where plenty of dry air freely passes among them, placing the fruits carefully on sheets of paper. Those intending to plant Peach trees this season, will find the following very useful and good varieties to select from:—Waterloo, Hales' Early, Early York, Alexandra Noblesse, Old Noblesse, Abec, Condor, Stirling Castle, Dymond, Royal George, Bellegarde, Barrington, Sea Eagle, Crimson Galande, and Walburton Admirable, with Princess of Wales for a latest use. Goshawk, Dr. Hogg, Grosse Mignonne, Royal Charlotte, and Belle Bause, are also good Peaches.

NECTARINES.—Lord Napier, Elrage, Pine-apple, Pitmaston Orange, and Humboldt, are the best; while Albert Victor and Victoria are best under glass with us, the fruits splitting on trees on the open wall.

PEARS.—For planting, the following are desirable:—Williams' Bon Chrétien, Clapp's Favourite, Madame Treve, Beurré d'Amant, Autumn Nelis, Winter Nelis, Pitmaston Duchess, Beurré Superfin, Doyenné du Comice, Marie Louise, Louise Bonne of Jersey, Glout Morceau, Olivier des Serres, and Josephine de Malines.

APPLES.—Dessert: Mr. Gladstone, Devonshire Quarrenden, Kerry Pippin, Yellow Ingestre, Worcester Pearmain, Ribston Pippin, Cox's Orange, King of the Pippins, Blenheim Orange, Margil, Cox's Pomona, and Golden Knob. Kitchen varieties: Manx Codlin, Duchess of Oldenburgh, Ecklinville, Lord Grosvenor, Lord Derby, Stirling Castle, Golden Spire, Tower of Glamis, Warner's King, Mère de Ménage, Prince Albert, Fillbasket, and Wellington.

PLUMS.—Rivers' Early Prolific, Oulin's Golden Gage, Denniston's Superb, Belgian Purple, The Sultan, Kirke's Green Gage, Victoria, Jefferson's, Prince Englebert, Coe's Golden Drop, Pond's Seedling, Washington, Guthrie's Gage, and Automne Compôte.

CHERRIES.—Rivers' Early, Governor Wood, May Duke, Kentish Bigarreau, Napoleon Bigarreau, Elton, Black Tartarian, Black Eagle, and Belle de Orleans. In the above will be found some very good things, and I feel sure will give the planter every satisfaction, though there are many others good and well worth growing.

NUTS.—These may now be gathered and stored if the husks are of a brownish colour, and the nuts beginning to drop, selecting a day when they are quite dry, place them in a dry airy room so as to prevent mouldiness and keep the nuts in the husks, and in this way they will last in good condition for several months. Sometimes the fruits are exposed to the fumes of burning sulphur, but there is no necessity for this, if the husks are dry when the crop is stored, and the storeroom be kept dry and airy. *H. Markham, Mercworth Castle, Maidstone.*

FRUITS UNDER GLASS.

STRAWBERRIES.—These plants will have made rapid progress during the last few weeks, manure made from cow or sheep's-dung having been afforded them. Space enough should be allowed, so that the foliage may get dry after being moistened by dew; and the pots frequently shifted to prevent the roots going into the bed. Plants for autumn-fruiting should now be housed and stimulated with manure-water, at the same time keeping them close to the glass. Vicomtesse Héricart du Thury is one of the best at this season, notwithstanding the fruit being small. The early plants, which are in 5-inch pots, will require the best position to get their crowns well ripened. I prefer to place them in an aspect looking south, standing them close together in a cold frame, which is done as soon as growth is at an end. Here the plants will get better ripened, and not continue growing in mild weather, as when they are plunged in coal-ashes in the open air, and being close to each other, they do not get dry at the roots quickly. The maturing of later kinds should not be

hastened by withholding water, but kept steadily moving till the time comes for them to go into their winter quarters. Dryness at the root is very bad for these plants if it be carried to excess, and become much weakened. On the other hand, exposing them to heavy rain is equally injurious towards the end of growth. Cold frames or houses afford the best kind of protection for pot-Strawberries, and if that is not practicable, the late ones may be stacked against walls or fences, or in stacks facing both ways, using plenty of ashes or fibre to prevent injury by frost and rain.

THE EARLY FIG HOUSE.—Those who may have accommodation for forcing both early and late Figs will now require to get the former pruned, washed with warm water, and dressed with an insecticide, ready for operations; but as many gardeners do not possess Figs planted out in houses, bushes in pots have to be grown instead. I need not go into pot culture and the necessary details, having treated of their preparation in earlier calendars. When plants in pots must be made use of, it is necessary to keep up a young vigorous stock of these bushes, to bring on as the older ones become too large, although, as is well known, provided the roots are well supplied with manure materials, pot-bound bushes in pots will give good supplies for many years. One such kind is Negro Largo, which actually does best when the roots are cramped for want of space. The pruning of the early house should now be finished. A good "paint" for Figs is Bentley's Soluble Paraffin Oil, or one made of sulphur, tobacco-water, and a little clay to give consistency. The walls of the Fig house should be lime-washed, and the glass and wood-work cleaned. Care must be taken not to injure the young Figs just visible on this year's wood, and a soft brush or sponge must be used for these when washing or dressing the bushes. The old mulch laying on the borders must be removed, and a dressing of turfy loam, to which bone-meal and old mortar rubble are added, afforded, making the new material very firm. Any trees which may be making too much wood may be lifted, the roots shortened, and replanted, and the soil covered with litter, to get them to start into new growth. Do not make use of any manure in the compost. Thoroughly water the border after planting, and before placing the litter on the surface. Figs in late houses will now be ripening their wood, and though these trees will continue in bearing for a long time yet, it is better for them if they are got into condition for next season's fruiting, and to do this, watering must be discontinued, abundance of air afforded, and some warmth kept in the hot-water pipes, to assist the ripening process. If these trees are crowded with shoots, a portion of the older wood may be taken out with advantage. If any tree is found to be shy in fruiting, the present is a good time to lift and replant it. *G. Wythes, Syon House, Brentford, W.*

PLANTS UNDER GLASS.

CALADIUMS.—These plants will by this time be getting past their best for the season, and should be allowed to ripen off by withholding water gradually. Place them by themselves in the driest portion of the stove, and when the foliage has died down, store them in a place where the temperature does not fall below 55° to 60°, as, if kept in a lower temperature in winter there is a risk of the corms drying.

POINSETTIAS.—Plants which have been growing in cool pits ought now to be placed in warm quarters, and in cases where a portion of the stock is required to bloom early, a few plants may be placed in the Pine-stove, where they will quickly come into bloom. A Melon-house, where the Melon plants are cleared away, is a capital place in which to grow Poinsettias until they come into bloom. Assist the plants with frequent applications of liquid manure and soot-water in a weak state if very large heads of bloom are wanted.

EUPHORBIA JACQUINIÆFLORA.—This is another plant that should be placed at the warmer end of the stove, keeping it well up to the glass, so that as much light as possible may shine on it. Care should be taken in affording this plant less water during the short days, as should the soil be kept in a constantly wet state, the plant is very liable to die suddenly.

THE STOVE.—Young plants of Allamanda struck in the spring should now be flowering abundantly. Afford the plants as much light as possible, to give strength and solidity to the blooms; and assist the plants with weak doses of some approved kind of fertiliser, so that the plants may continue in bloom for some time to come.

CLERODENDRON THOMPSONIANUM.—These plants will now require gradual drying-off, and in cases of a scarcity of house-room, the plants on balloon trellises may be removed from the trellises, and stood against the back wall, or in a corner of the stove, but care must be taken not to put them where the temperature falls below 60°, or they will soon be injured. Clerodendrons in general may be kept drier than most other plants during the time they are at rest.

CALANTHES.—The different species and varieties of this useful plant will now have completed their growth, and require less water at the roots. Place them in a light position, on a shelf, suspended some 2 feet from the roof of the stove, and here let them remain till they come into bloom. Care should be taken to keep the leaves healthy as long as possible, or the pseudobulbs will not be properly matured.

FERNS FOR FURNISHING.—The young stocks of these plants should now be exposed to full light to mature the fronds, and enable them to better withstand changes of temperature. Ferns which are used for this purpose should be grown, if possible, in low pits during the summer time, and only shading them so that the young fronds are not damaged by a too bright sun; at the same time keeping them well up to the glass. Under this régime the frond becomes sturdy and enduring. For use in a cut state it is advisable to immerse the fronds in water for several hours, as by so doing they will continue fresh for several days.

CINERARIAS.—The later stock of these plants, which at the present time is standing in small pots, which are fast filling with roots, will require a shift. Keep the plants in a low pit, where there is fire-heat at command, standing them on a bed of coal-ashes or other cool moisture-holding material; and giving air whenever the weather admits. The earliest plants will now be showing blooms, and they should be assisted weekly with weak manure-water. *R. Milner, Penrice Castle, Swansea.*

THE ORCHID HOUSES.

PHALÆNOPSIS.—These plants must needs engage much of the attention of the cultivator at this season, for rotting and "spot" are likely to occur, unless the warmth of the house and the moisture in the air have careful attention. The discoloration of the foliage is one of the surest signs of decay, and arises from want of air and too much moisture in the atmosphere of the house; and the first signs are brown spots on the leaves. Water must not be withheld from any plant for more than a fortnight at a time, and this only when the brown spots begin to show themselves. The plants should then be hung up close to the top ventilators, without placing them in a cool draught; and the plant being kept on the dry side for about ten or fourteen days, will effectually stay decay for some time, although, sooner or later, the affected leaves are sure to go.

Now that the plants are showing their flower-spikes, manurial assistance should be afforded at each watering, so as to ensure fine flowers; and either guano or dung-water used alternately answers well. As the spikes lengthen and begin to branch, the grower should take into consideration how many really good flowers the plant will carry, which is a matter amateurs should consider, for they are apt to err in retaining a large number of flowers upon a spike, whereas if but one-half the number were reserved the flowers would be finer, and the plant greatly benefited. Those plants which may have broken into untimely growth should have their flower-spikes cut off, else the immature growth and the flowering will soon cause the death of the plant.

THE INTERMEDIATE-HOUSE.—The dwarf growing varieties of Cattleya are now perhaps the brightest objects to be found here, a bank consisting of these Cattleyas, *Odontoglossum grande*, and *Sophronites grandiflora* is now very lovely. I would recommend those who may wish to make a point of having some good things in flower during the autumn months, to get these species, and *Vanda corulea*, which are really amateurs' pet plants, growing, as they do, under the same treatment as the *Odontoglossum*. The more I see of *Vanda Kimballiana*, the more I am struck with its beauty. I also get excellent reports from different correspondents as to its freedom to grow.

The temperatures of the different divisions should be gradually lowered at the rate of 1° or 2° a week, until a temperature of 65° at night is reached in the East Indian-house, 60° in the Cattleya-house, 55° in the intermediate, and 45° in the cool division. *A. G. Catt, Parkfield, Hallow.*

SALES FOR THE ENSUING WEEK.

(See also page 469.)

MONDAY,	Oct. 19	Great Clearance of Nursery Stock, at Cunningham's Nursery, Liverpool (four days), by Protheroe & Morris. Nursery Stock, at the Windlesham Nurseries, Bagshot, by Protheroe & Morris. Dutch Bulbs at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Oct. 20	Collection of Established Orchids, from Old Park, Ventnor, at Protheroe & Morris' Rooms. Land, at Benfleet, by Protheroe & Morris. Dutch Bulbs, at Stevens' Rooms. 407,000 Kentia Seeds, also Bulbs and Plants, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 21	Nursery Stock, at Ealing, by Messrs. Protheroe & Morris. Collection of Orchids, by the late G. N. Wyatt, Esq., at Stevens' Rooms (two days).
THURSDAY,	Oct. 22	Enormous quantities of Nursery Stock, at Hollamby's Nursery, Groombridge, Tunbridge Wells, by Messrs. Protheroe & Morris (two days). Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 23	Imported and Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 24	Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—50°·2.

The Conifer Conference.

IN spite of the detestable weather, which prevented the presence of a large number of visitors

this was decidedly one of the most important meetings which the Royal Horticultural Society has ever held in the time-honoured gardens at Chiswick. The days on which the exhibition was held precluded us from giving any but a hurried reference in our columns last week, causing also inability to revise the proofs; but in our present issue we are enabled to revert to the subject, and to supply particulars relating to matters which occurred after our former number went to press. On Thursday it was found that considerable accessions had been made to the exhibition, including a valuable series of photographs from Mr. HANSEN, of Copenhagen, together with lists showing the number of Conifers that can be grown in Denmark, and with statistics relating to their growth in that northern climate. Mrs. ROBB also sent an interesting series of drawings by a Chinese artist, representing trees introduced by FORTUNE, and which were made at the instance of Miss BOULTER, now Mrs. ROBB. The Chinese artist, it appears, wisely stipulated that he should be permitted to add figures of his countrymen, which, while they add greatly to the quaintness and vitality of the illustrations, furnish valuable indications as to size. The drawings, though destitute of perspective as we understand it, were nevertheless quite recognisable, and were further valuable as giving the Chinese names of the trees in question.

Further details as to the exhibit of living specimens in the Conifer garden, which formed one of the most striking features of the exhibition, are given in another column. On the third day of the Conference the meeting was presided over by the Director of the Royal Gardens at Kew, who alluded to the magnificent specimens grown in Scotland, of which so many illustrations were exhibited. The papers read included one by Mr. MALCOLM DUNN, to whose efforts the success of the exhibition was so largely due. Mr. DUNN's experience on Lord POWERS-COURT'S estate in Ireland, and subsequently at Dalkeith in Scotland, gave a special importance to his opinions, which were ably summarised in his paper. In the course of his

remarks, he alluded to the growth of various Conifers in Scotland, and to their value for decorative or economic purposes. From the latter point of view, he alluded specially to Prince Albert's spruce *Tsuga Mertensiana*, the *Abies Albertiana* of gardens, *Abies concolor*, the Douglas Fir (which he characterised as the most valuable introduction since the Larch), *Picea Menziesii*, *A. grandis*, *magnifica*, *Nordmanniana*, *Cupressus Lawsoniana*, *C. macrocarpa* (which he considered one of the best trees for the afforesting of Ireland), *C. Nutkaensis*, *Pinus laricio*, *P. monticola*, and *Thuja gigantea*. In the second rank he placed *Araucaria imbricata*, which succeeds in the most storm-beaten parts of the West of Scotland; *Pinus austriaca*, *P. excelsa*, *P. strobus*, and others. In alluding to species principally of use for decorative purposes, Mr. DUNN adverted to the care requisite in the selection of memorial trees, where a mistake was not readily rectified. The publication of Mr. DUNN's paper in full will be anxiously awaited.

Professor MARSHALL WARD, as the representative of our first forest school, gave an admirable address on the diseases to which Conifers are subject. This address was a model of perspicuity, begotten of full knowledge of the subject. Dealing really with a very technical and complicated subject, Professor WARD managed to put before his hearers, in the clearest manner, an admirable survey of the subject. How so learned a scientist managed to give his hearers so clear a summary, with so little use of technical terms, was a matter of surprise. The word "mycelium" in place of spore was almost the only technical term we noticed, as, with great skill, Mr. WARD managed to convey a lucid notion of the extremely interesting phenomena of "heterocicism," which are as important to the cultivator as to the man of science, but which, owing to the technicalities ordinarily made use of, make the subject more or less of a sealed book to the very persons most specially interested from a practical point of view. Professor WARD alluded first of all to the diseases consequent upon a want of balance and proportion between root-action and leaf-action, and to the climatal and other causes which bring about such a want of proportion.

Passing then to the consideration of diseases due to the action of fungi, Professor WARD alluded first to those of the better-known fungi, commonly classed as Toadstools and Mushrooms, which attack trees; then to the rust fungi, which affect the leaves in the first instance, and then to the ascomycetous mould. Special attention was given to the "wound fungi," and to those which gain an entrance through cracks in the bark, or injuries inflicted by frost, insects, animals, and man. He showed how, out of the countless millions of spores produced, there was ample opportunity for the introduction of the germs of the fungi, which, germinating under appropriate conditions, penetrate the wood, absorb the nourishment contained in it, and interfere with the healthy action of the tree.

The rust fungi are particularly remarkable in that they pass one part of their life on one plant, and work out another portion of their life-history on some other plant of a totally different nature; the fungus itself in the two conditions being so utterly different as to have led to the application of different names, and to the classification of the forms in different groups. Thus a particular fungus growing on the common Groundsel or one on a *Vaccinium* has a totally different aspect when living on a Silver Fir. Practical men will remember with complacency

that this relation between apparently different organisms was long ago found out by the farmers, who branded the Berbery bushes as enemies to the Wheat. They were ridiculed at the time for this, but experience has shown that they were right as to their facts, although widely in error as to their interpretation of them. It is not the Berbery bushes that do the mischief, but a fungus which grows upon them. But who, without the minute study that the scientists have made, could believe that the rust of Wheat and the cluster cups of the Berbery have any real connection, or be indeed specifically identical, or that a fungus on the Juniper could affect the Hawthorn, or one on the Groundsel prove prejudicial to the Firs, producing a growth of entirely different character according to the plant on which it grows? And yet, thanks to DE BARY and others, in Germany, and to PLOWRIGHT, particularly, in this country, the fact has been proved to demonstration by the process of inoculating the tree with spores of the fungus from the other plant and *vice versa*. Fortunately vegetable physiologists are not hampered by the misguided anti-vivisectionists, and so the truth can be more readily arrived at. Considering, on the one hand, the injuries to which plants are subject from insects, squirrels, frost, wind, friction of branches, or mischievous boys, and considering, on the other hand, the enormously great production of fungus spores, the wonder is, not that trees are attacked, but that disease is not far more prevalent than it is.

With reference to the Larch, Professor WARD considered that the prevalence of the disease in some districts of this country, as contrasted with its relative infrequency in its native Alps, is really due in great measure to the fact that we in this country, all unwittingly, put the Larch under conditions more favourable to the growth of the fungus than to that of the tree. It was disquieting, too, to learn that the Douglas Fir, to which we are looking as one substitute for the Larch in certain situations, has its enemy in the shape of a mould or *Botrytis*, which may be as fatal as the *Peziza* on the Larch.

Other papers which, being of a purely technical character, were "taken as read," and others, of which the authors were not present, were passed over at the meeting, but will form part of the report in the Society's *Journal*. This report, not only from the value of the papers to which we have alluded, but on account of the statistics as to rate of growth and other matters, should be one of the most valuable contributions to arboricultural knowledge ever issued.

Reverting to the cut specimens, which were sent in such prodigious numbers, we may add that they were gone over after the conference as carefully as their numbers would permit, and their nomenclature revised. We have already alluded to the extraordinary specimens sent from the Earl of ABERDEEN'S estate at Haddo, but we mention them again to allude to the marvellous vigour and rapidity of growth of *A. amabilis* (shown as *grandis*), of *A. magnifica* (shown as *amabilis*), of *A. nobilis* (shown as *balsamea*), of *Abies Lowiana*, *A. firma*, *A. bracteata*, and of others, which were simply marvellous to southern eyes. *Picea pungens glauca* and *argentea* (Parryana of gardens), and *Abies concolor violacea* are among the most brilliantly coloured and hardiest of Conifers. *Thuja gigantea* (Lobbi) justifies our anticipations as to its future. *Abies firma*, from Munches, showed the finest growth of its kind that we have ever seen, and this species was shown from Balmoral (we think), with cones, the first that have been seen on home-grown trees. The cones of *Pinus Ayacahuite*, from Weston Birt, shown by Messrs.

JEFFRIES of Cirencester, were also very remarkable. In several collections cones of *Athrotaxis selaginoides* were shown as *A. Gunneana*, *Picea pungens* was in one case labelled *Annesleyana*, and more commonly named *P. Engelmanni*, a much inferior species. Endless confusion also seems to exist between *Picea Alcockiana* and *ajanensis*. *Thuia gigantea* was shown under half-a-dozen names. *Pinus Thunbergii* and *P. densiflora* were almost universally sent as *P. Massoniana*. *P. Gerardiana*, so-called, was usually nothing but *Pinaster*. But these circumstances are just what might have been expected, the only source of regret being, that when so much

factors, but tells a tale also of diminished rentals and contracted outlay.

As to new forms we saw but few, save minor varieties of the Lawson cypress, and some *Retinosporas*; for *Abies Eichleri*, a supposed new species, turns out to be *A. Veitchii*.

Now that Ireland has to be afforested, and thousands of acres elsewhere now unremunerative, await development, it is to be hoped that more attention will be paid to the subject, and that this last really superb effort on the part of the Royal Horticultural Society will result in the future in a greatly increased attention being paid to the subject of planting,

CHRYSANTHEMUMS IN THE LONDON PARKS.—The Chrysanthemums in Finsbury and Southwark Parks are, as the Superintendents inform us, getting in good condition for inspection. The display in Finsbury Park was opened to the public at 10 o'clock on Saturday, October 10; and that at Southwark opens to-day, October 17, at the same hour. The shows will remain open for two or three weeks. The show of Chrysanthemums in the Frame Yard, at Battersea Park, was opened to the public on Friday last.

ROYAL HORTICULTURAL SOCIETY OF IRELAND.—A Council meeting of this society was held at the office, 189, Great Brunswick St., on Monday, Oct. 5.

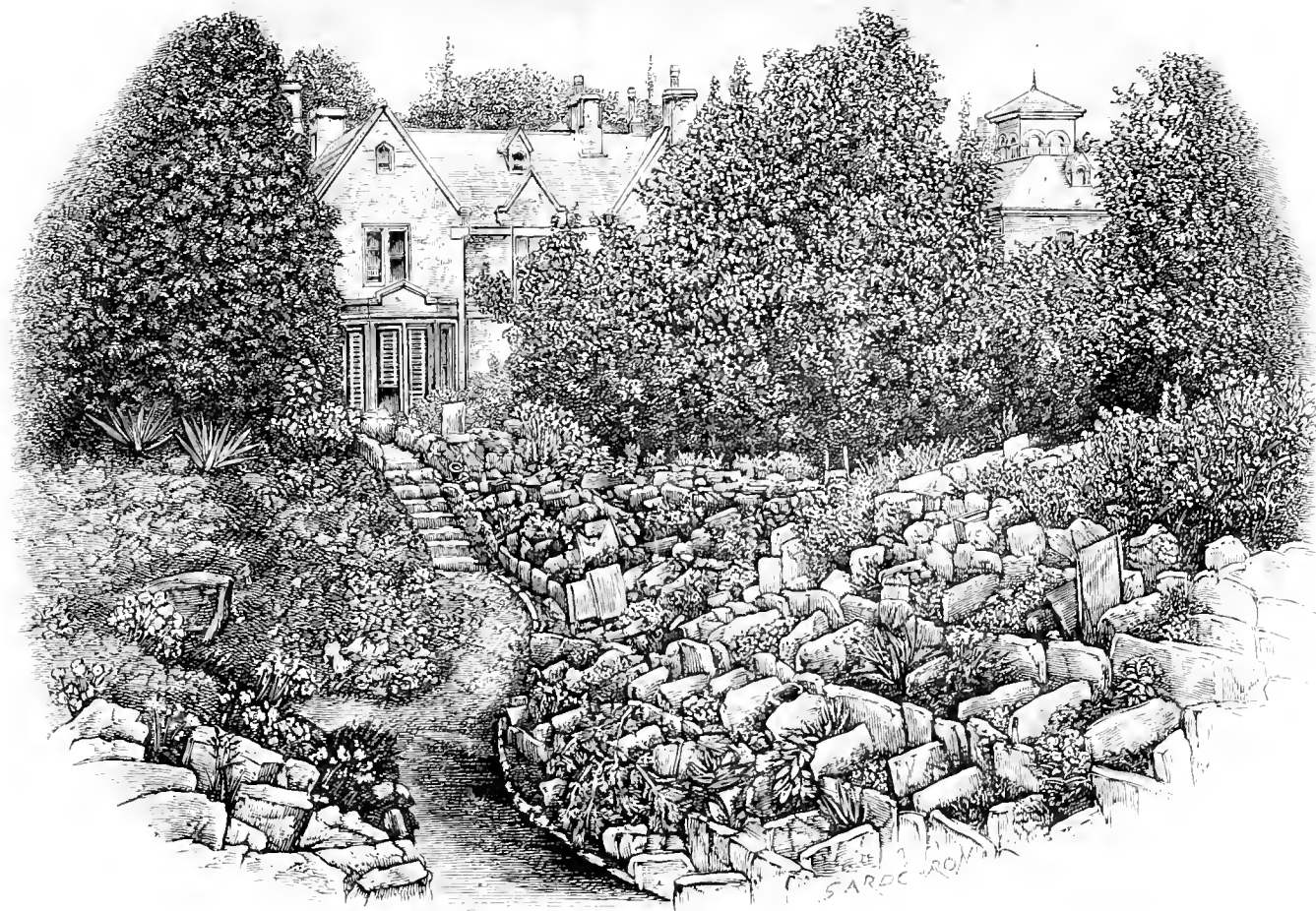


FIG. 59.—A PORTION OF REV. H. EWBANK'S ROCK GARDEN. (SEE P. 454.)

time and trouble have been expended in rectifying matters, so few people seem to care to adopt a revised version. Another thing strikes us as noteworthy, and that is the little way which the more newly-introduced kinds, such as some of the Japanese species, *e.g.*, *Abies firma*, *A. sachalinensis*, *brachyphylla*, *Picea ajanensis*, etc. have made. Many of these trees, introduced within the last quarter of a century, are, so far as we can yet see, every bit as important, whether for decorative or useful purposes, as the introductions of DOUGLAS at an earlier period. This cannot be attributed wholly to taste and fashion, though these are very potent

and that thus the apathy of the unappreciative London public, and the disastrous impediments offered by the weather, may in the end be compensated for by a vast increase in the productive resources of the country, and in the amenity of our plantations and pleasure-grounds.

THE JAMAICA INTERNATIONAL EXHIBITION.—We learn from Messrs. CARTER & Co., seedsmen, of High Holborn, London, that they have been awarded the highest prize (a Gold Medal) for their exhibit of English tested seeds, packed for the tropics. Another exhibit consisted of living examples of some of the finest species of annual flowering plants, many of which had been grown on their seed farms in Essex.

The following members of council were present:—Mr. HENRY CUSACK (in the chair), Mr. J. GARNETT RATHBORNE, J.P.; Mr. C. STRONG KING, J.P.; and Mr. HAMILTON DRUMMOND, Hon. Sec. The judges were appointed, and other arrangements made for the Chrysanthemum Show, which will be held on November 5 and 6.

GRIFFINIA HYACINTHINA.—A quantity of plants in flower, of this charming blue and white-flowered bulbous plant in Mr. WM. BULL'S nursery, Chelsea, exhibits the good qualities of this species. It is as easy to grow, and requires the same kind of treatment as *Eucharis amsonica*, but thrives with rather less warmth. The plants with their stout stems bearing umbels of bright porcelain-blue and

white flowers, each about 2 inches across, and firm in texture, form attractive objects, especially at this season.

STREPTOCARPUS HYBRIDS AT CHELSEA.—At the Royal Exotic Nursery, Chelsea, Messrs. JAS. VERRICH & SONS, have brought these neat and pretty greenhouse plants to great perfection, and are growing them largely for seeds. The plants bear their pretty Gloxinia-like flowers in great abundance in autumn and winter; and among the more conspicuous of the new strain we recently noted one which was pure white, except a small and almost invisible lilac line in the tube. Passing from this are pure white, with one median and four or six side lines in the throat; white with the interior of the tube furnished with radiating mauve-coloured lines, forming a perfect star on the expanding segments; white, with rose lines, and white with purple lines, and the same series of markings in the flowers having rose, blue, or lilac ground colour. Another very fine strain has mauve flowers with a white throat and purple lines in the tube, and the whole of the varieties have the same dwarf habit and fresh-looking foliage.

LIME AS A PRESERVATIVE FOR POTATOS AND FRUIT.—Mons. MONCLAR has been trying the use of lime as a preservative for Potatos and fruit. He at first tried it with Potatos in order to prevent them from rotting, thinking that a little skin-corrosion would be preferable to the complete loss of the stored crop; but he found that the skin was quite unaffected, and he was enabled to keep Potatos fourteen months after they had been harvested without deterioration. He found, however, on keeping a sample four months' crop, that decay began to set in, being accompanied by a degeneration of the starchy matters into sugar. Encouraged by this success, Mons. MONCLAR has more recently applied lime to the preservation of Apples and Grapes when stored, and the results were quite as good. The lime in the case of Apples and round fruits generally, can be easily removed by means of a wet rag; but it would be advisable to wrap valuable fruits first in tissue-paper. The preservative qualities of dry lime are found probably in its caustic properties, which are certainly germicidal, and perhaps its hygroscopic properties are in some way concerned.

THE BEST MANURE FOR TOMATOS.—An Italian chemist, N. PASSERINI, has lately been investigating the composition of the stems, leaves, and fruit of Tomatos (*Solanum lycopersicum*). He made a number of analyses of the ripe and unripe fruit, and his experiments have been conducted during the past four seasons. One would expect, therefore, that he would be in a position to deduce some important generalisations from his work. Having regard to the large amount of potash in the fruit, and the considerable quantity of lime in the stems and leaves, he considers that the following manuring may be recommended for Tomatos:—Farmyard manure, 5000 kilogrammes; calcium superphosphate (18 per cent.), 30 kilogrammes; potassium chloride (50 per cent.), 60 kilogrammes. This quantity of manure is that recommended for distribution on 1 hectare of ground planted with Tomatos. Another Italian chemist, namely, T. GIULI, has also been investigating the composition of Tomatos, but he does not propose any particular manure.

STOCK-TAKING: SEPTEMBER.—The Board of Trade Returns for the month of September show a decrease in the importations, as compared with the same period last year, amounting to the sum of £1,362,387—almost the only items showing an increase being articles of food, &c. Some consolation for this state of things may, however, be found in the fact that the imports for the nine months of the year passed away exceed by £5,253,043 those for the corresponding period in 1890. What with sinister rumours from this and that foreign capital, and the aggravation of strikes at home, no wonder that capital shows a certain amount of timidity, and

thus a deficiency of imports to report. The following figures are from the "summary" of the imports from foreign countries and British colonies for the past month:—

	1890.	1891.	Difference.
	£.	£.	
Total value for month	£25,551,688	£24,189,301	-1,362,387
§II.—(A.) Articles of food and drink—duty free	12,448,671	12,671,013	+222,342
(B.)—do., dutiable	2,570,681	2,967,724	+397,043
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)... ..	4,063,419	3,340,072	-723,347
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,676,544	4,029,509	-647,035
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,261,940	1,196,565	-65,375
(B.)—Parcel Post ...	41,460	29,931	-11,529

In the matter of seed-growing, we have some interesting accounts from the United States. It appears that whereas some fifty years ago seed farms were to be found only in Connecticut and New York States, they are now to be found all over the vast country, as far as the Pacific Coast. The wonderful development of the railway system there has had much to do with this, for the managers of lines in America cater for public support in a way quite unknown here; and for years fruit trains have been run from end to end of the States—from California and Florida up to New York. The Western and Southern men are coming more and more to the front every day, and one feels no surprise at the fact that, having taken stock of things, they are turning their serious attention to the abolition of the McKinley Tariff and President HARRISON. If certain "City" rumours are to be taken notice of, we are threatened with a species of import deserving the consideration of some working-men at home. It is stated that several capitalists engaged in the building trade are taking the preliminary steps towards the erection of wood-working establishments in Belgium, so as to render themselves less liable to interference from "Unions." The matter is certainly worthy of note here. The following figures are extracted from the general returns for September:—

	1890.	1891.	Difference
§ II. Fruit:—			
Apples, raw bush.	393,020	197,478	-195,542
Unenumerated, raw	1081,256	786,184	-295,072
Onions	516,682	195,083	-321,599
Potatos cwt.	45,144	49,825	+4,681
Vegetables, raw, unenumerated value	£76,273	90,204	+13,931

These statistics lose none of their significance as the months pass on. Here it may be worth while to notice a statement that vegetable products are reaching the English market from the sister isle. We failed to find any grounds for such a statement, and application at the Irish Department elicited the information that no intelligence of such a movement had reached the officials there. A word or two as to the exports of British and Irish manufactures: there is a falling off in the month of £1,971,134 as compared with September, 1890; the falling off for the nine months is given as £9,984,191, a somewhat serious difference, but there have been worse accounts than this, and there are three months of the year still to run.

CHAMBRE SYNDICALE DES HORTICULTEURS BELGES ET SOCIÉTÉ ROYALE D'AGRICULTURE ET DE BOTANIQUE, GHENT.—On the occasion of the meeting of the above Societies on Sunday, October 4, in the Casino, the following awards were made by the judges.

Certificates of Merit.—To *Catsetum seaccatum*,

shown by M. A. Van Imschoot; to *Pteris serrulata plumosa*, shown by MM. Duriez frères; to *Cattleya aurea* and *Zygopetalum rostratum*, shown by M. A. Van Imschoot; to *Dracæna Professeur De Bosschere*, shown by M. L. Desmet-Duiver; to *Cattleya Dowiana*, shown by MM. Edm. Vervæet et Cie.; to *Vriisia Lubbersi*, shown by M. Léon Poelman-Maenhout; to *Pandanus discolor*, shown by Mr. Ed. Pynaert Van Geert; to *Cactus Dablia* with striped flowers (new), shown by M. Schmitz.

Certificates for Good Culture and Bloom.—To *Miltonia candida*, shown by M. A. Van Imschoot; to *Pteris Victoriae*, shown by MM. Duriez frères; to *Vanda cœrulea*, shown by Madame la Marquise de Wavrin; to *Cypripedium Roebelini* (unanimously), shown by M. A. Van Imschoot; to *Oncidium Lanceanum*, shown by MM. Edm. Vervæet et Cie.; to *Lotus peliorhynchus*, shown by M. A. Van Geert; to *Salvia Soucheii*, *S. splendens*, and *S. Issanchou*, shown by Madame la Comtesse Douairière de Kerchove de Denterghem.

SHEFFIELD BOTANICAL GARDENS.—Mr. WILLIAM HARROW, from the Cambridge Botanic Garden, has been appointed curator of the Sheffield Botanical Gardens in the place of Mr. ATEINSON, who recently resigned.

MARRIAGE OF MR. L. G. SUTTON.—The marriage of Mr. Leonard Goodhart Sutton, youngest son of Mr. Martin Hope Sutton, and partner in the firm of Sutton & Sons, with Miss Mary Charlotte Annie Seaton, daughter of Colonel Seaton, Madras Staff Corps, of Salween, Beckenham, Kent, was solemnised at Christ Church, Beckenham, on Wednesday, September 30.

WEDDING.—At the parish church, Gillingham, Norfolk, on the 5th inst., ANNIE, the only daughter of Mr. J. BATTERS, was married to Mr. J. HOLMES. Mr. BATTERS was for many years the Head Gardener at Gillingham Hall, Norfolk, and previously for a long period as Head Gardener to J. B. W. FLEMING, Esq., and after with Mrs. WILLIS FLEMING at Chilworth Manor, near Romsey, and well known at one time as an exhibitor of Pine-apples and early vegetables at the meetings of the Royal Horticultural Society.

TO THE PHILANTHROPIC: CAUTION.—A certain individual, calling himself FRANK HENDERSON, and stating that he was a nephew of the late Mr. PETER HENDERSON, of New York, has lately visited one of our leading seed firms, pleading deficiency of resources. Enquiry was made by cable from New York, and the reply came that the gentleman in question was unknown to Messrs. PETER HENDERSON & Co.; and that a similar young man, probably the same, paid Messrs. HENDERSON a call in New York, representing himself as a Mr. SUTTON, a relative of Messrs. SUTTON, of Reading.

A NEW MARKET AT BRENTFORD.—At a special meeting of the Brentford Local Board, on Tuesday evening, the Markets Committee recommended the purchase from Lord ROTHSCHILD of 2a. 2r. 30p. of land, at Kew Bridge, adjoining the North London Railway Station, for the sum of £3350 7s. 9d., for the purpose of the construction of a fruit and vegetable market. The recommendation was adopted unanimously, and it was agreed to obtain the consent of the ratepayers at a public meeting, according to the 116th section of the Public Health Act, 1875. The plans for the new structure have already been prepared by the surveyor, Mr. J. H. STRACHAN, and approved. The frontage will be 150 feet in length, and the façade will contain five shops opening on to the Chiswick High Road, each having a frontage of 16 feet. Behind each, a covered erection will run, and round the whole will be an open court. There will be a pair of gates at each end, one for ingress, and the other for egress. The North London and South Western Junction Railway joins the land to be acquired.

HOME CORRESPONDENCE.

SUBJECTS OF STUDY FOR GARDENERS.—Like "W. L.," at page 432, I have often lamented that no short and simple course of reading and study has been laid down for young gardeners who wish to excel in their profession. But there are two sides to every question, and I am proud to know many young gardeners who do systematically practise drawing and reading, in order to improve themselves. One, in particular I have now in my mind's eye, who has a set of Professor Huxley's Science Primers, as published by Macmillan & Co., including Sir J. D.

vegetable physiology, &c., is a useful book, to be had second-hand for a few shillings; so also Loudon's *Self Instruction for Young Gardeners*, and Lindley's *Theory and Practice of Horticulture*. Every gardener should learn enough of freehand and mechanical drawing to enable him to express clearly and decidedly what he means as to the form or design. A good rough sketch, the work of a moment or two only, is often of more practical value than a long and wordy description. It is not necessary that a gardener should emulate the artist, but he should learn to sketch clearly and quickly the main point of things as he sees them. Botany, geology, and natural

young English gardener whom he had recently engaged. The gentleman had had many troubles with former gardeners, and when we came to the Orchids, the employer said to me in German, "I truly hope this new man will not ruin my plants by neglect, as the others have done." "I trust not," I replied. "No, sir," said the gardener, also in German, your plants shall always have from me the best attention." Tableau! We all looked at each other, and a laugh was unavoidable. The moral is—employers must be careful of the young gardener of the future. Accomplishments, such as music or languages, or of photography (a very useful one indeed), &c., are all very well in their place; but the one thing a gardener must learn is, how to grow the finest of garden produce, the best of vegetables and fruits, and of flowers. Especially must he study the soil and capabilities of the garden in his charge for the time being, and the best varieties suited to his soil and locality. This is a kind of knowledge dependent on his acuteness of observation and on clear reasoning powers, and is but rarely to be learned from books. Nearly every garden, even closely-adjointing ones, vary in some marked particulars—a particular crop grown in a particular way will succeed in one part and fail in another part of the same garden. The soil, manures, climate, aspect, prevailing winds, elevation, all demand and must ever obtain constant attention from the gardener who would be most successful. There are some people who deride "book-men," or "writing-men," as they are called, and who tell you that "a pound of practice is worth a ton of theory," &c., forgetting that the best results of practice and science, as combined, are better than the best results of either practice or theory alone! The best practical gardener the world ever saw would have been still a better gardener and a better and happier man if he had known the "reason why" of his cultural successes, and could have clearly explained them. Those who deride the "book-man" or the "writing-gardener" should blush when they read names like Paxton and Lindley, Abercrombie, McIntosh, and the Thomsons, or of Gilbert, of Wildsmith, or of Hudson and Douglas, of Spyers, or of O'Brien! The one great modern want amongst gardeners to-day is amalgamation and co-operation, lacking which no body of professional or craftsmen can ever hope for, or to their best. Is not this a chance for the Royal Horticultural Society of England? F. W. Burbidge, F.L.S.

The very interesting note by "W. L.," in last week's *Gardeners' Chronicle*, p. 432, on subjects of study for gardeners, deserves to be read by all young gardeners. I can with confidence say, that if botany were more studied by gardeners they would never regret it, for in conjunction with practical gardening, it would prove to be a source of great interest. A gardener may know how to grow and treat a plant to perfection, and some gardeners will say that is quite sufficient, but a little knowledge as to its structure and functions should never be passed on one side; therefore, I suggest the desirability of a knowledge of botany to gardeners. I agree with "W. L.'s" suggestion, that if a series of articles were published by the various horticultural papers dealing with the forms and functions of plants, it would enlighten the gardening community greatly. M. E. Mills, *Coombe House, Croydon*.

The note by "W. L." (p. 432), in your last issue, is worth more than passing notice, as it opens up a wide field for discussion as to the subjects young gardeners should take up; and I may here remark that I fear the horticultural press would be unable to do what "W. L." desires, as many readers would object to have its columns taken up in the way described [it has been done repeatedly], and older gardeners would not give the matter the attention it deserves, and editors cannot now find room for lengthy articles. A good system to adopt in populous districts is to form a class, and get young men to attend once or twice a week, and thus gain a certain amount of botanical knowledge, besides other subjects of use to them in their profession. I note with pleasure that this is being done at Ealing at the present time, the instructor being a specialist, the whole series of winter lessons being obtainable for a trifling payment; and it is worthy of note that when young men have to pay for their teaching, they are more diligent in attendance and more industrious than when it is provided for them gratuitously. It may also be added that mutual improvement societies which meet during the winter months are doing much good, and enlarge the mind when



FIG. 60.—*ABIES NORDMANNIANA*: TO SHOW HABIT.

Hooker's *Botany*; Jevon's *Logic and Political Economy*; *Geology and Physical Geography* by Geikie; Roscoe's *Chemistry*; *Physiology*, by Dr. M. Foster; *Physics*, by Professor Stewart; and the "Introductory" volume of the series by Professor Huxley himself. Baker's *Botanical Geography*, Allcock's *Botanical Names for English Readers*, *Treasury of Botany*, and Johnston's *Gardeners' Dictionary* are other works every young gardener should strive to possess for reference purposes. Logic and English composition should gain attention from all gardeners, for, other things being equal, the better and clearer they can think, the better, the easier, and the more efficiently they can work. The latest edition of Lindley's *School Botany*, with its list of axioms in

history generally would bring much pleasure into the leisure of all gardeners, young or old. I know a celebrated gardener who has a large family of clever boys, and there is not a beast or fish, or a bird, or a butterfly, in the district, that he and his family do not know, not only by name, but they know their life histories as well. It is always a pleasure to visit them and hear of a new insect, a curious egg, or of a spider they have discovered in their locality for the first time. In towns, there are often opportunities for gardeners to utilise their evenings at free libraries, or they may attend classes for drawing, photography, short-hand, or for French or German languages. *Appropos* of these, the other day I walked round a good garden with its owner and an intelligent

the young men, who attend them, enter into the discussions heartily, and the papers chosen are instructive, and not too long. In the country, evening classes are difficult to arrange, a teacher of botany being often not easily got; but I have seen much good accomplished by enlisting the services of the schoolmaster, the young men studying their various subjects under his guidance. In large places there are often sufficient men to form a class. I know where there have been classes for many years, the employer kindly paying for the attendance of a good teacher twice a week, and the men are permitted to take up any subject that they may choose. Some are very attentive, whilst others think that it is derogatory to study! On the whole, the advantages of these classes to them in after years is, I fear, of little value, and as I said before, if the studies are to be of any value in after life, the men must have the wish to improve their minds, and when they do so by their own exertions I find they appreciate it more, and are more anxious to get on; but I notice a want of interest in scientific studies in general. A. Y. Z.

"HARDY PERENNIALS."—For the benefit of gardeners generally, will you kindly define (1), what is a "hardy perennial"? I have been an exhibitor for nearly thirty years, and thought I knew; but I found at Chiswick last week that I did not, but I am always willing to learn. I should also like to know (2), under what head you would place *Lilium pardalinum* and *Colchicum variegatum*, if not of hardy perennials?—and (3), whether the ordinary garden hybrids of *Pentstemon* are considered hardy? These questions are asked from a horticultural and not a botanical point of view, and the question of herbaceous perennials is not in any way raised. W. Marshall. [(1) Our correspondent is assuredly about the best person to frame the definition he wants, we shall not attempt it, because the interpretation to be given to the term "hardy perennial," as used in flower-show schedules, is a matter of convention or custom, whereupon judges differ. As referees, we should decide in favour of prevalent garden custom. It is not the general custom to include bulbous plants and cormose plants in garden catalogues and schedules, under the head of hardy perennials, but to place them apart under bulbs. Suppose an order to be sent to a nurseryman for a dozen hardy perennials, would our correspondent expect to get a bulb or a cormose plant among them? Or, to take a converse case: suppose a class for twelve bulbous or cormose plants, would not the judges be right in disqualifying if the group contained an *Aster* or *Pyrethrum*, a *Holly* or an *Oak*? We think they would, and as referees, we should support them. All are hardy perennials, but we should as little expect to see a bulbous plant among "hardy perennials" as a *Pyrethrum* among bulbous plants. (2) Under bulbs—strictly speaking the *Colchicum* is not a perennial at all, the new growth is the successor to that of the previous season, not the same. (3) We do not consider hybrid *Pentstemons* hardy under all circumstances, although they are described in books of reference, e.g., *Nicholson's Dictionary*, and also in nurserymen's catalogues, as "hardy herbaceous perennials," or as hardy plants. Ed.]

ASTERS "COLLECTED WILD."—On p. 435, I observe a suggestion that some *Asters* exhibited by me at Chiswick, which were labelled "collected wild," were "probably garden escapes." This is a mistake; the *Asters* in question were collected in the province of Alberta, near the base of the Rocky Mountains, and were not named by me, because I was assured that they could not be matched in the Kew Herbarium. C. Wolley Dod, Edge Hall, Malpas.

AN EFFICIENT, SAFE, AND CHEAP INSECTICIDE.—To 2 oz. of soft-soap, add a wineglass and a half of water, and stir till it is properly mixed, when it will have the appearance of dough; to this add the same quantity of petroleum oil, which will cause the mixture to curdle at first, but it must again be stirred, till it takes on its former appearance, then when water is added, the petroleum oil will be found to be quite soluble. For mealy-bug, if put on with the syringe, 1½ gal. of water may be added to the mixture; for dipping plants 2 gals.; for American blight on fruit or other trees, 1½ gal., which may be used at any time during the year, providing dull days during summer are chosen for the work, and the trees are syringed with clean water before they get dry. For thrips, red-spider, green or black-fly, 3 to 4 gallons of water should be added, and the same for the washing down of plant-houses in the winter. For mildew, add 4 gallons of water; and for the winter dressing of Vines and Peaches, use at the same strength as for mealy-

bug. After its use, all dirt may be easily removed from the plants by syringing them with clean water, and they will have a healthy appearance, which will be retained for a long time afterwards. In the case of very tender foliage plants, it is best to syringe with clean water soon after its application. I do not recommend this mixture for *Orchids*, although I have no doubt some of them would stand it very well. John Dinwoodie, The Gardens, Highfield, Gainsborough.

DELPHINIUM ALBUM GRANDIFLORUM.—Lovers of the *Delphinium* are strongly advised to make a note of this truly estimable variety, the white-flowered *Delphinium*. It has now been under my observation for two seasons—and I like it much, as being a break to the preponderating array of blue-coloured flowers. It is pure white, grows about 3 feet high. It does not seem to require any special soil, position, &c., growing well in ordinary garden loam. I find that last season it was introduced to a number of English gardens, so we shall doubtless hear more of it anon. Hybridists will no doubt see in the variety a valuable aid towards yet securing new colours. Pioneer.

HYACINTHUS CANDICANS.—I removed a number of these plants two years ago, and when planting them, burnt earth was mixed with the staple. The bulbs were put about 4 inches deep in the soil. They flowered the first season, but not so well as this year, when they threw up flower-spikes of 5 feet 10 inches high, with thirty-six blooms. I have this year a large circular-shaped bed planted with *Hyacinthus* in the centre, and intermixed over the remainder with *Lobelia cardinalis*, which looks admirable. But to see the plant at its best, it should, I think, be planted with the *Gladiolus Brechtlevisensis*. I remember to have seen *Hyacinthus candicans* planted on the herbaceous border at Holker Hall, North Lancashire, which for a number of years flowered well, the plants not having the least protection in winter. C. E. Martin. The Hoe, Wilwyn.

BELGIUM.

INTERNATIONAL EXHIBITION AT ANTWERP.

In the section devoted to vegetable products, some of the exhibits, which were specially connected with botany and horticulture, deserve particular mention. There was a most interesting and noteworthy collection of fruit, vegetables, and roots, for fodder or industrial uses, modelled in wood, and painted, from Messrs. Vilmorin-Andrieux et Cie., of Paris. These capital reproductions, copied from Nature, were admired by all for their accuracy; each specimen was exactly the weight of the fruit or vegetable which it represented; and it may fairly be said that the "Grand Prix" won by this well-known French firm was well earned.

M. Ch. L. Van Nerom, of Brussels, showed cards of statistics relating to Belgian agriculture, &c.; an album also containing agricultural statistics of the country, and maps of botanical geography, explaining the botanical researches instituted by the Royal Botanical Society. The utility of such work is too evident to need comment; the jury awarded two Gold Medals to the painstaking exhibitor.

The *Études sur les principes actifs des Plantes (Alcaloïdes et Glucosides)*, consisting of three large volumes, gained for their author, M. E. Dupny, of Brussels, a Diploma of Honour. The work is of very considerable scientific value.

M. G. De Jetter, Assistant Secretary to the Royal Linnean Society of Brussels, showed a glass case, containing Belgian economic and medicinal buds, herbs, and flowers; they were carefully labelled, and dried by a process from which most satisfactory results were obtained—a Gold Medal was awarded. The collection of forest and grass seed, from M. Keller, fils, of Darmstadt, was most noteworthy, and won a Gold Medal.

A new remedy for cryptogamic diseases of Oranges, Lemons, Vines, Potatos, Tomatos, Beetroots; and for insect pests—greenfly, caterpillars, &c., the "poudre sulfosteatite," from M. Jean Souheur, of Antwerp, gained a Silver Medal—well deserved, because of the good results which have followed the

trials of this substance. Further experiments will no doubt be made. The Institut Supérieur de Commerce of Antwerp exhibited, in a very intelligible form, specimens of the principal food, economic, and medicinal products, obtained from leguminous plants. Such specimens, illustrating the properties of the chief botanical families, should be found in all the more important public museums. The Antwerp Botanic Garden, in which many improvements have lately been made, showed a collection of Servian woods, of timber, a collection of woods and dyes, and a set of models of flowers for use in teaching botany. The Commercial and Industrial Museum of Antwerp showed a series of specimens chosen from their collections of woods, Coffee, Cocos, Sugar, Cotton, Indigo, Maize, Wheat, Rice, &c.

The Royal Lionean Society and the Royal Floral Society of Brussels, have arranged that an exhibition of fruit and plants be opened on October 11. It is expected to achieve considerable success.

The *Chrysanthemum* shows will this year be even more numerous than ever. The principal will be those organised by the Société Royale d'Agriculture et de Botanique at the Ghent Casino, and by the Société Royale d'Horticulture of Antwerp.

There has been formed at Ledeburg, Ghent, a society composed of the workmen in the various horticultural establishments, with a view to assisting the members when precluded from work by illness. During the great Exhibition at Ledeburg, a concert was given in the hall for the benefit of this fund, and for the same object bouquets sent in by various nurserymen were sold by young ladies. The entrance-fee was 20 centimes (2d.), and the sum finally obtained for the benefit fund amounted to 1030 francs (about £43). Ch. de B.

KEW NOTES.

HIBISCUS CALYCINUS, Willd.—This is the correct name of the plant known in gardens as *H. chrysanthus*. It was distributed by Mr. Bull in 1884, who described it in his catalogue of new plants for that year as "a free-growing shrubby plant introduced from Natal. It has hairy stems, and roundish sub-trilobate leaves. The flowers are of large size, campanulate, with broad obovate petals, yellow, with a purple-crimson spot at the base, forming a dark-coloured eye." A plant of it was obtained for Kew from M. Lemoine & Son, of Nancy, and this is now in flower. A peculiar character in this species is that of the epicalyx or involucre, which is formed of five broadly spatulate, cuspidate, bristle-pointed leaflets as long as the calyx. The flowers are 4 inches across, saucer-shaped, bright sulphur-yellow with a maroon-crimson blotch; the stamens are orange-yellow, and the stigma purple.

FUCHSIA.—A list of the species and varieties of *Fuchsia* in cultivation at Kew may interest those of our continental friends, who are now paying special attention to this genus. In England the garden hybrids and crosses among *Fuchsias* are much more in favour than the true species, although some of these are very ornamental when well managed. Altogether, there are about fifty species known, and of these thirty-one are cultivated at Kew. Their names are:—*Fuchsia alpestris*, *F. arborescens*, *F. a. var. syringifolia*, *F. boliviana*, *F. coccinea*, *F. conica*, *P. corallina*, *F. cordifolia*, *F. c. var. alba*, *F. cylindracea*, *F. decussata*, *F. discolor*, *F. Dominiana*, *F. excortica*, *F. exoniensis*, *F. fulgens*, *F. globosa*, *F. Hartwegii*, *F. gracilis*, *F. g. var. variegata*, *F. maorostema*, *F. microphylla*, *F. Mieliezii*, *F. procumbens*, *F. pumila*, *F. radicans*, *F. Riccartonii*, *F. serratiflora*, *F. simplicifolia*, *F. integrifolia*, *F. splendens*, *F. triphylla*, *F. thymifolia*.

SCOTLAND.

THE DUTHIE PARK, ABERDEEN.

It is always a source of pleasure to visit this park, as it is evident the superintendent, Mr. Harper, spares no trouble in maintaining it in excellent keeping, and developing its resources to the fullest extent, whether it be in removing that which tends

to obstruct the view either from natural growth, or through the development of other features in the park, it is seen to before it obtrudes itself on the visitor. It is the due attention to such details that gives so much pleasure to the landscape gardener, and of course to the public generally. On a recent visit we were much pleased to find things in "apple-pie order," and that new features were being developed, such as clearing the undergrowth in the plantations down to the eye level in certain places; thus admitting pleasing glimpses of the park from other points, and notably so from the railway trains on the Deeside route to Balmoral.

A great feature of this park is the way the encircling shrubberies are brightened up with flowering plants, and for this purpose many of the showier annuals are used with excellent results. Long marginal masses of the pink *Saponaria calabrica*, *Linaria purpurea reticulata aurea*, the white *Matricaria inodora plenissima*, *Godetias* of sorts, one named *Lady Satin Rose* was very good; various *Clarkias*, Sweet

fruitful orchards, there are other parts which were once famed for Apples and Pears; but now, so far as fruit-growing industries are concerned, may be termed *Ichabod*—so much orchard culture previously has been practised in low and flat districts. The planters in the carse of Stirling and Falkirk have been peculiarly fascinated by such positions, that large tracts of land (in ages past) were planted with Apple and Pear trees. It is singular how well many kinds do in these parts, when ordinary attention is given them. Orchard culture must have been well understood during the last century, as the remains of the plantations indicate. Semicircular elevations were formed, and the trees planted in straight lines on the top of them.

I have noticed that when removing the remains of these old orchards, that the bottom roots were in a state of decay, while those on the surface were in perfect health. The lesson we learn from this is, to make provision at planting-time to prevent downward growth of roots, as when they penetrate the soil

Modes of preparing the ground were first touched upon by Mr. Fairgreive, draining where necessary being regarded as of prime importance, and trenching where practicable being in every case desirable. Enriching the soil by manure or composts was also regarded as necessary when it was naturally poor. Special soils are not considered so necessary now as formerly, but peat and sand were always beneficial to *Rhododendrons* and other allied kinds, particularly in heavy soils. Pruning was an important operation, but was apt to be carried too far. One-third only of the shoots should be cut back annually; this was sufficient to keep the plants in proper balance and good form, while the flowering would be abundant, without excess, and the quality of the flowers would be improved. In planting, it was contended that the distance apart should be such as would be ample for the fullest development of each kind of shrub, so that the individual character of each should be exhibited to the best advantage. Considerable discussion followed the reading of the paper, on the debatable points raised by the author.

Numerous exhibits were on the table. From Messrs. Laird & Son's were several seedling *Dracaenas*; one named *Duchess of Portland*, a variety of elegant habit, with leaves of moderate breadth and bright colouring, and another seedling unnamed, with arching, narrow, incurved leaves, brightly coloured, were certificated; as was also a new variety of *Asparagus plumosa* named *cristata*, reared by the same firm—the peculiarity of the variety was, that the leaves were distinctly crested at the tips. Mr. John Downie tabled a fine group of tuberous *Begonias* in flower, several of which were certificated.

From Messrs. Dicksons & Co. came samples of two new Apples, one of which, a dessert variety named *James Grieve*, received a Certificate for excellence of quality and handsome appearance. Messrs. T. Methven & Sons exhibited a bright scarlet seedling *Carnation* named *Lady Lansdowne*, and a pretty autumn-blooming deeply-laced pink, named *The Gem*. Messrs. Jas. Dickson & Sons, Edinburgh, exhibited a bloom of *Chrysanthemum*, from a plant reared from seed sown in February. The bloom was 6 inches in diameter, and of good form. Mrs. Lyall, North Berwick, sent flowers of *Cricium Moorei*; Dr. Paterson, Bridge of Allan, sent blooms of *Magnolia grandiflora*, alleged to be the Exmouth variety, which rarely flowers in that locality. Mr. Murray, The Gardens, Parkhall, Polmont, tabled samples of a large handsome *Tomato*, of the *Hackwood Park* type; each of the fruit weighed about 15 ounces.

A collection of seedling Plums was tabled by Mr. Webster, The Gardens, Gordon Castle. They were not all ripe, and consequently, were unfit for being adjudicated upon by the committee, which, however, considered them a very promising lot, of which more will probably be heard another season.

CRYPTOGAMIC SOCIETY OF SCOTLAND.

The seventeenth annual Conference of this Society was held at Paisley on the 22nd, 23rd, and 24th ult., under the presidency of Mr. John Polson, in accordance with the wishes of members who desired to have a public exhibition of Cryptogamic plants. Paisley is famed all the world over for its various manufactures. It is not so well known for its attainments in natural science; but no one who has had an opportunity of visiting its fine museum can doubt that there are many ardent students of Nature among its people. In ornithology the museum is particularly rich, the collection of birds which it contains being one of the finest in the kingdom. The recent exhibition of cryptogamic plants was taken up with enthusiasm, and proved a great success.

The members of the Society mustered on Monday, the 21st, at the close of a day of storm throughout Scotland, and of doubtful forecasts for the morrow. The morning of Tuesday, the 22nd, however, ushered in a day of calm and of sunshine, exceptional in the



FIG. 61.—*ABIES NOBILIS*, AND *CUPRESSUS ERECTA VIRIDIS*: TO SHOW HABIT.

Alyssum, *Hymenoxys californicus*, *Cornflowers*, *Chrysanthemums*, *Pyrethrums*, *Phloxes*, *Pentstemons*, *Dahlias*, *Gladiolus*, *Nasturtiums*, and *Violas*, of which about 40,000 plants are used annually. *Nemophilas*, *Nigellas*, and a host of similar things put a lot of life and colour into the picture. Carpet bedding, although rather limited, is well done, and with the public, at least, this sort of thing seems to be popular, as we noticed several carriages which were driving in the park, pull up when opposite those beds, and inspect them for some little time.

Notwithstanding the past severe winter, *Eucalyptus Gunnii* passed safely through, but *E. globulus* succumbed. There are many other features worth noting in this park, but by far the best thing to do is, when in the vicinity, to go and see them, and if possible secure the guidance of the genial superintendent, Mr. Harper. F. R.

SCOTTISH ORCHARDS.

Though the carse of Gowrie may retain much of its historical interest as a district abounding in

below the beds of adjacent rivers, they begin to perish. While removing forest trees, the same decaying of roots is found.

By the decay of the old orchards, I fear many of the varieties of Apples and Pears, which were valued for their hardiness and abundant bearing, are lost. The cause of misfortune to orchard culture is allowing them to run wild, becoming too thick, and when the roots have searched and found all the food they can reach, they are left to perish in soil which has become inert. This is very common, too, in the great fruit districts in the west of England, where a wide acreage may be often seen going fast to ruin, and, except for cider-making, most of the fruit is worthless.

SCOTTISH HORTICULTURAL ASSOCIATION.

This Association held its ordinary monthly meeting at 5, St. Andrew Square, Edinburgh, on the 6th inst., Mr. Wm. Welsh, President, in the chair. Mr. Fairgreive, the Gardens, Dunkeld, read a paper on "Shrubs, their Cultivation and Arrangement,"

rainy west. The party was completed at the pier of Gourrock, where the members had the pleasure of welcoming Dr. Plowright and Mr. Ward from King's Lynn. Taking steamer to Kinn on the Holy Loch, a halt was made to allow our English friends, who had travelled overnight, to breakfast. The grounds of Hafton were soon reached, and the day was spent in roaming the woods. According to tradition, a vessel laden with earth from Palestine was sunk in the waters of the Holy Loch—hence the name. Its scenery is of exquisite beauty. The shores are dotted with picturesque villages and private residences. The rising slopes are richly wooded, the greenery gradually mingling with the purple of the Heather, which, in its turn, shades indefinitely into the ethereal colouring of the grand mountains in the background. No wonder that it is eagerly sought after as a summer retreat from the smoke and din and turmoil of city life. After a brief visit, and a hearty welcome from the proprietor, at Inver-Eck, particularly interesting to botanists from its having been the residence of the late Sir William Jackson Hooker, the party returned by the entrance to Loch Long to Gourrock, and again stepped into the pro-saic railway-carriage for Paisley. The excursion was a most enjoyable one, and will long live in the memories of those who joined in it.

The business meeting of the Society was held in the evening. After the transaction of ordinary business, the President delivered the annual address, in which he welcomed the Society to Paisley. The address was characterised throughout with great reverence of spirit, and could not fail to awaken interest in the study which it is the aim of the Society to promote. In a paper by Mr. A. Stephen Wilson, of Aberdeen, on "The Germinal Origin of Vegetable Parasites," special reference was made to *Peronospora infestans*. This gave rise to an interesting discussion, in which Dr. Plowright maintained the position which is familiar to mycologists from his researches in this department of botanical investigation. Mr. William Stewart, Glasgow, contributed a catalogue of the Agarics of the Clyde district, containing 178 species. Dr. Plowright then gave an account of a visit which he had paid to Dr. Robert Fries at Gothenburg, and relating some interesting anecdotes of his father, the immortal Elias Fries. His visit has been fruitful in clearing up difficulties about various species, of which he submitted coloured figures for examination. After the usual votes of thanks, the meeting closed.

Wednesday, the 23rd, was devoted to the public exhibition, and at the annual dinner in the evening the members had a pleasant reunion.

On Thursday, the 24th, a short excursion was made to Johnstone Castle, the seat of Mr. G. L. Houston, who, after kindly receiving the members, and showing them some antiquities of interest, which he had discovered in renovating portions of the old tower, conducted them through the woods of his extensive park.

The chief interest of the meeting for many was centred in the public exhibition. The members of the society were early astir on the day of its opening, and hampers, which had poured in from all quarters, soon revealed their treasures. These were laid out on tables in the lecture hall of the museum, and formed a grand collection. Tables were specially devoted to classified and named species of fungi. The result was a more complete representation of the various genera than has hitherto been obtained in similar exhibitions. Nearly 200 species were named and classified. No new species were discovered, and no very rare ones were gathered.

Tables were, as usual, devoted to collections of edible and poisonous species. The hall in which the fungi were exhibited was tastefully decorated with a profusion of potted Ferns and greenhouse plants.

In other halls of the Museum there were arranged fine collections of Ferns, mosses, and seaweeds from the herbaria of local enthusiasts. These, though attracting less general attention than the strange forms and colours of the living fungi, were of great value and of deep interest to specialists in the science. As a whole, the exhibition of Cryptogams

was one of the finest which has yet been made in connection with the meetings of the Society; and it must be matter of lasting satisfaction to the naturalists of Paisley, that their efforts to provide an exhibition so full of educative influence have been crowned with success. Our space will not admit of reference to the names of the many who have contributed to this success; but we cannot omit mention of the Vice-President of the Society, Mr. James Clark; of the Secretary of the local committee, Mr. John A. Rennison; and of the Curator of the Museum, Mr. Morris Young, to whose united and unwearied efforts so much of the success of the Conference was due. To all others who have interested themselves in the meeting, and laboured for its success, our gratitude is equally sincere.

The Society will hold its next annual Conference at Aberfoyle, in the county of "Rob-Roy," under the Presidency of Colonel Stirling, of Gargunnoch. *J. S., Glamis.*

SOCIETIES.

ROYAL HORTICULTURAL.

THE EXHIBITION OF CONIFERS.

One of the chief features of this exhibition, to which we alluded briefly last week, and which attracted a more than ordinary share of attention, was the neatly-arranged collections of Conifers sent for exhibition by many of our prominent nursery firms. A more fitting place could not have been selected for arranging these exhibits. The centre portion of the ground, a plan of which we gave last week, was occupied by three large oval-shaped beds, surrounded by a border which varied in width, and in these were artistically arranged some of the rarest and most beautiful of Conifers. From the Combe Wood Nursery, Messrs. J. Veitch & Son sent a representative and healthy collection of hardy Conifers, including amongst other rare kinds, the beautiful Umbrella Pine of Japan (*Sciadopitys verticillata*), with shoots and cones of the most healthy hue imaginable; the curious but elegant *Retinospora filifera gracilis*, *Cupressus Nutkanensis aurea*—a good thing in its way; *C. Lawsoniana filiformis*, one of the most ornamental varieties of the favourite Cypress that has yet been offered to the public; although not much behind it is the rarely-seen *C. Lawsoniana pedunculata*.

Amongst the *Picea* and *Abies* genera, some of the most noticeable and interesting were the little known *P. ajanensis*, with leaves silvery beneath; the pretty and desirable *Abies Veitchii*, *Tsuga Sieboldi nana*, dwarf and interesting; *Picea Omorika*, the newly-discovered Servian Spruce; the true *Abies lasiocarpa*, better known as *Abies subalpina*; and the noteworthy *A. firma* and *A. amabilis*.

Retinospora plumosa albo-picta pleased us much, it being one of the neatest and brightest Conifer gems that could well be imagined, and it is to be hoped that it will receive that attention that as a hardy ornamental dwarf-growing Conifer its merits justly entitle it to. The neat habit and pretty foliage tint of *Cupressus arizonica* should do much to place it in the front rank of ornamental Conifers, *Pinus parviflora*, so prolific in cones, and *Retinospora squarrosa*, each about 7 feet high, showed off to good advantage near the centre of the bed, while the healthy hue of *Torreya Myristica*—a plant that does well in Ireland—showed that it can be grown in the climate of England, a fact also proved by the fine fruiting specimens shown from Orton Longueville by Mr. Harding. Of the Japanese Cedar (*Cryptomeria japonica*) there was a curious form called *spiralis*, and which, were it not for the appearance here and there of normal-shaped leaves, would have been worthy of a more exalted place than it received. *Pinus Ayacahuite* is an uncommon species, but one that is worthy of a bold attempt to get established amongst any collection of Conifers; fine cones of this species were exhibited from Weston Birt. The newly-discovered *Tsuga caroliniana* has much to attract notice. The weeping form of the Canadian Hemlock Spruce, *T. canadensis pendula*, is well worthy of extensive cultivation as an ornamental tree, it being particularly graceful and beautiful of foliage colouring.

Equally good with the Combe Wood collection was that sent from Knap Hill by Mr. A. Waterer; indeed, both collections looked so healthy, and were composed of such rare or beautiful individual spec-

imens, that it was a matter of no little difficulty to say which was the finer. Conspicuous amongst the Knap Hill plants was *A. Lowiana*, a well-grown healthy plant fully 7 feet high; the curious *Retinospora leptoclada*, the golden Canadian Juniper (*Juniperus canadensis aurea*), a pretty and most effective Conifer; *Retinospora lycopodioides*, and *Picea pungens glauca*, one of the hardiest and most beautiful silvery Conifers.

Curious, and of value for rock gardening, is the dwarf *Abies nigra nana*, a plant so remarkable from its dark Yew-coloured foliage. The glaucous Atlantic Cedar (*Cedrus atlantica glauca*) will ere long be a common tree, for it is questionable if any other is so beautiful in foliage tint. In *Picea excelsa Remonti* we have a very distinct form of the Norway Spruce, and one that will be of value in ornamental grounds.

From the famous Elvaston collection Messrs. Barron & Son sent a well-selected and very interesting group of unusually well-grown healthy plants, and as great care in arrangement had been taken, the whole collection looked one of the best. In it we particularly noticed the rare *Taxus baccata* William Barron, certainly a distinct and desirable variety of our common Yew. *Pinus Coulteri* and *P. Koraiensis* were worthy of examination, more healthy specimens being rarely seen in this country. *Picea Schrenkiana*, *P. polita*, and *P. excelsa Remonti* are rarely-seen kinds that were here exhibited in good form, and in the best of health. One of the best variegated Conifers is *Cupressus Lawsoniana pyramidalis albo-spica*, and in which the irregular patchy blotching that we are too much used to was quite wanting, a quiet but effective tint pervading the whole specimen.

Messrs. John Jefferies, of Cirencester, showed some beautiful specimens of *Cupressus Lawsoniana elegans*—a first-class ornamental tree, and one that should be largely used in parks and lawns. *Abies concolor violacea* seems to be coming well to the front—at least, if we might judge by its presence in most of the collections. It is a most distinct and effective tree. Of *Abies Lowiana* (commonly, but erroneously, called *A. lasiocarpa*), there were several good specimens in this collection, and it is a species that cannot be too widely known. The cut specimens from Haddo, Aberdeenshire, were marvellous for vigour and rapidity of growth. In *Tsuga Hookeriana* we have another desirable and pretty-foliaged species, that is as yet far too little known.

Messrs. Paul & Sons exhibited a most interesting and largely representative collection, and the individual plants were well grown and full of foliage. The rarely seen *Juniperus Berkleyi*, *Pseudo-Larix, Kämpferi* (the Golden Larch), *Taxus Livistonii*, and *T. Barronii* were exhibited in well-grown specimens, and seemed to attract a more than ordinary share of attention. *Juniperus recurva densa* is worthy of a place, and is certainly distinct from the typical species, although we can hardly say that it is either equal or preferable to it. The Umbrella Pine (*Sciadopitys verticillata*), was here again well shown in fine healthy glaucous-foliaged specimens—but, indeed, this was noticeable in all the groups. Westman's form of the Lawson's Cypress is a drooping variety, of very elegant growth, and would be an effective specimen if well placed in any collection. Other interesting exhibits of Messrs. Paul's were *Abies bracteata*, *A. numidica*, and *Tsuga Pattonii*, the pretty *Cupressus pendula compacta*, *Juniperus neoborensis*, and the distinct and interesting *Juniperus fragrans*—a rare shrubby species.

One of the large beds was most artistically planted by Dicksons of Chester, with unusually well-grown and generally speaking rare and effective specimens, the whole being surrounded by neatly-grown plants of the golden Lawson's Cypress. Conspicuous in it we noticed the little-seen *Podocarpus Koraiensis*, the upright form of *Cephalotaxus pedunculata*, and the Umbrella Pine (*Sciadopitys verticillata*), a healthy fine-looking specimen, and which clearly pointed out that the air of Cheshire suits well the wants of this interesting Conifer.

Of *Abies Lowiana*, perhaps the finest specimen in the collection was that of Messrs. Dicksons, while their variety of *Cupressus macrocarpa* must soon come to the front as a first-class ornamental variety. *Picea accicularis*, a form of *P. Alcockiana*, reminded us much of a very fine-foliaged *Picea Morinda*, but there was something distinct in it which is not readily described. The Chester collection comprised also well-shaped trees, a wealth of healthy foliage, and a generally pleasing look.

From Hammersmith, Messrs. Charles Lee & Son sent some uncommon kinds of Coniferae. We admired much the new *Cupressus Nutkaensis aurea* and the equally uncommon *Taxus sempervirens albospica*, both of which are worthy of a note by intending planters of choice Conifer subjects. The Weeping Wellingtonia (*Sequoia gigantea pendula*) is, as shown, more curious than beautiful. The specimen was about 14 feet high, ugly, and uncouth.

Rather a large collection was that of Messrs. W. Cutbush & Son, and which included a fine specimen of *Cupressus Lawsoniana erecta-viridis*, a neat habited and decidedly distinct variety that is to be recommended. Of the pretty and well-known *Retinospora plumosa aurea*, several unusually large and neatly-shaped specimens were included in this collection.

Perhaps one of the neatest and most taking collections was that of Messrs. Paul & Sons, Cheshunt, and which included only such Conifers as are suitable for rock gardening. In it were such dwarf specimens as *Picea Remonti*, *Cephalotaxus pendunculata* var. *fastigiata*, *P. excelsa* Maxwellii, *P. excelsa* nana, *Cryptomeria japonica compacta*, *Abies Pinsapo* (Parker Hammond's var.), *Thuopsis latevirens*, *Juniperus virginiana compacta*, *Picea orientalis pygmaea*, *Thuia occidentalis recurva*—a rare form; *Cupressus Lawsoniana minima glauca*—a neat and pretty rock Conifer, and *Picea excelsa deliciosa* and *A. excelsa Doumetti*, both forms of our common Spruce. This list is of great value as showing at a glance the best kinds of Conifers for rock gardening.

Side by side with this was a most interesting collection from the Royal Gardens, Kew, chiefly of such Conifers as require a greenhouse temperature—at least, very few could survive, even in the most favoured parts of Great Britain or Ireland. Here we saw *Libocedrus Doniana* (this is hardy in Ireland), *Athrotaxis cupressoides*, *Juniperus bermudiana*, *Phyllocladus asplenifolia* (a very pretty Conifer), *Libocedrus Gunniana*, *Dacrydium Franklinii* (hardy in two places, at least), *Microcachrys tetragona*, from Tasmania, with long pendulous foliage, and of unusually neat growth.

Scientific Committee.

TUESDAY, October 6.—Present: Dr. M. T. Masters, in the chair; and Messrs. Morris, McLachlan, Blandford, C. W. Dod, and G. Henslow, Hon. Sec.

Strawberries attacked by Beetles.—With reference to this subject, brought before the Committee at the last meeting, Mr. Blandford observed that the fact had been recorded before, and attributed to identically the same insects, so that it was very probably the same beetle in the present instance. The fact that the carnivorous beetles thus changed their habit to eat Strawberries reminded Mr. Dod of the interesting fact that squirrels would eat not only Mushrooms but even poisonous fungi.

Primula rosea, mildew.—Mr. Dod exhibited plants, and observed that this species alone had been much attacked this year, and especially during the wet season after great thunderstorms in the last week of June. The specimens were sent to Dr. Cooke for further examination. Mr. Dod also added, that he had tried many kinds of remedies for mildew this season, but with no very great success, the best being "anti-blight" and watering with sulphate of copper. *Iris reticulata* had been very badly attacked this year.

Fog Report.—Mr. Morris read a communication from Mr. H. Rix, stating that Mr. G. H. Bailey, Secretary of the Town Gardening Committee of the Manchester Field Naturalists, had expressed the willingness of the committee to work in conjunction with the Scientific Committee of the Royal Horticultural Society in the matter of "Air and Fog," and had applied for the grant of £50 placed at the disposal of the joint committees by the Government Grant Committee.

The members of the Scientific Committee were unanimous in agreeing to the proposal of Mr. Bailey, as there was still a working balance from last year's grant to go on with.

Polyporus fraxineus.—Dr. Plowright forwarded a specimen, with the following observations:—"It was taken from an Ash tree near King's Lynn, which is being killed by this fungus. The tree is still alive, and bears a certain number of leaves, but will evidently succumb before many months. The fungus has attacked the base of the trunk near the ground, which is the usual site of its attack. *P. fraxineus* has hitherto not been generally regarded as a parasite by mycologists in Britain, but it clearly is a true parasite, capable of doing great damage to the trees it attacks. It is not one of the most common species with us. When once a tree is fairly attacked, it is soon killed by

the fungus." The question was raised whether the fungus be not rather a parasite in consequence of the previous unhealthiness of the tree, as is so often the case with other fungi, as Dr. Masters observed. Mr. Henslow added that *Polyporus squamosus* grows on a dying Horse-Chestnut tree in his garden, but not on the healthy ones, from which it might be inferred that when that fungus occurs on Ash trees, as is so often the case, the probability was that the trees were unhealthy.

Merulius lacrymans.—Dr. Plowright also sent fine specimens of this fungus, the "dry rot," remarkable for the development of well-formed pilei. Such are seldom seen; they are flat, orange coloured, and spreading over the cushion-like mass of the fungus.

Apple Canker.—Dr. Plowright also forwarded specimens of this condition, but as is usual in the advanced stage, it is impossible to assign a cause; probably some ancient irritation having been set up, the organism having long since disappeared, the abnormal growth continued.

CRYSTAL PALACE FRUIT SHOW.

OCTOBER 8, 9, 10.—English-grown Apples and Pears were seen very extensively displayed at the Crystal Palace on the above date, and there was a pardonable feeling of native pride in surveying such superb examples of home cultivation. It may be said it was all the result of high cultivation, which is undoubtedly true; still it showed what the soil is capable of producing, and perchance, some day, some horticultural Moses may arise to teach the people that by means of improved cultivation of varieties that are certain croppers, growers may be led into the promised land of commercial success. The competition was keen in almost every class, and rich colouring, for so untoward a season, was everywhere observable.

Apples.—The best exhibition of one hundred dishes came from Messrs. G. Bunyard & Co., Old Nurseries, Maidstone; indeed Kent-grown fruit was to the fore through the entire show; Mr. C. G. Sclater, Devon Nurseries, Heavitree, Exeter, was 2nd, with some remarkably good fruit also, generally finely coloured; 3rd, Mr. J. Watkins, Pomona Farm, Withington, Hereford, with a fine lot also, many brilliantly coloured, and included varieties not often seen on the exhibition table.

In the amateur's class for fifty dishes, Mr. G. Woodward, gr. to R. Leigh, Esq., Barham Court, Maidstone, was 1st, with a splendid collection; 2nd, Mr. Geo. Goldsmith, gr. to Sir E. Loder, Bart., Leonardslee, Horsham; 3rd, Mr. A. Waterman, gr. to H. L. C. Brassey, Esq., Preston Hall, Aylesford, Kent, who was likewise 1st with twenty-four dishes; 2nd, Mr. Geo. Reynolds, gr. to the Messrs. de Rothschild, Gunnersbury Park, Acton, with excellent examples; 3rd, Mr. T. W. Startup, West Farleigh, Maidstone.

The best twelve dishes came from Mr. F. Bridger, The Gardens, Penshurst Place, Kent; 2nd, Mr. S. H. Goodwin, Smarckwell, Mereworth, Kent.

Pears.—The best collection, not to exceed fifty dishes, orchard-house fruit excluded, came from Mr. G. Goldsmith, gr. to Sir E. Loder, Bart., Leonardslee, Horsham, who had superb fruit of *Beurré d'Anjou*, *Beurré d'Amanlis*, *Conseiller de la Cour*, *General Todleben*, *Bon Chrétien*, *Beurré Rance*, *Beurré Alexander*, *Lucas*, *Beurré Hardy*, *Louise Bonne* of Jersey (very fine), *Nouveau Poiteau*, *Marie Louise de Noville*, *Triomphe de Spencer*, &c.; 2nd, Mr. Geo. Woodward, Barham Court, also with remarkably good fruit; Messrs. Geo. Bunyard & Co. were 3rd; and Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, 4th, with very good collections.

In the amateurs' class for twenty-four dishes, Mr. G. Woodward was 1st, his fruit here, as in all the classes in which he exhibited, being nicely set up on red leaves of the Virginian Creeper; 2nd, Mr. A. Waterman, Preston Hall, who staged fine examples; 3rd, Mr. T. H. Crisp, Canford Manor Gardens, Wimborne, with twelve dishes. Mr. G. Goldsmith was 1st with some superb fruit; 2nd, Mr. R. Smith, gr. to Lady F. Fletcher, Kennard, Yalding, Kent, with good fruit.

Apples and Pears of Orchard-house Growth.—But one collection of these was staged—from Messrs. G. Bunyard & Co., and it comprised about fifty dishes of superb fruit.

Messrs. G. Bunyard & Co. offered special prizes for the three best-flavoured Apples in three varieties, and prizes for three dishes of Pears also. There were a considerable number of entries. The 1st prize for dessert Apples went to Mr. Will Taylor,

nurseryman, Hampton, who had Ribston Pippin, King of Pippins, and Cox's Orange Pippin from pyramid trees grown on the paradise. The best-flavoured Pears came from Mr. W. A. Cook, Compton Basset, Cañe, who had Brockworth Park and Fondante d'Automne from south-east walls; and Madame Treyve, from pyramid.

Vegetables.—The open class for the best collection of vegetables, arranged for effect, brought some huge ones, laid out in squares, having the appearance of shallow wooden trays. Wonderful types of vegetables were staged, and scarcely any grown in the kitchen garden appear absent. Mr. C. J. Waite, gr. to Colonel the Hon. W. P. Talbot, Glenhurst, Esher, was 1st, with a remarkably extensive lot, very fine quality characterising all; 2nd, Mr. A. Palmer, Thames Ditton House, Kingston on Thames, arranged his productions much more effectively, but he lacked Mr. Waite's variety, and general fine quality. Mr. W. Salmon, Elder Road, West Norwood, was 3rd; this exhibitor is said to be a postman, but he is a very able gardener also.

The best twelve dishes came from Mr. Thomas Wilkins, gr. to Lady Theodora Guest, Inwood House, Henstridge, Blandford, who had very fine specimens; 2nd Mr. W. Pope, The Gardens, Highclere Castle, Newbury, with very fine produce also; Mr. J. Friend, gr. to the Hon. P. C. Glyn, Rooksnest, Godstone, was 3rd.

Messrs. James Carter & Co., seed merchants, High Holborn, offered special prizes for six dishes grown from their seeds, and here Mr. T. Wilkins was again 1st with a very fine lot, Mr. C. J. Waite 2nd, and Mr. W. Pope 3rd.

Potatoes.—Messrs. Sutton & Sons, seed merchants, Reading, offered special prizes for six dishes of Potatoes of their introduction. The 1st prize went to Mr. E. S. Wills, Edgecote Gardens, Banbury, who had excellent examples; 2nd, Mr. Jas. Sinkins, Shillington, near Hitchin; Mr. W. Pope was 3rd.

The best three dishes of Messrs. Sutton & Sons introduction were from Mr. R. Lye, gr. to W. H. Kingsmill, Esq., Sydmonton Court, Newbury, who had Satisfaction, Abundance, and Sutton's Seedling; 2nd, Mr. F. Peckover, Waddington, Banbury.

The miscellaneous collections formed a remarkable feature. Messrs. Veitch & Sons, Chelsea, had a very large collection of Apples and Pears, and baskets of leading varieties. Messrs. T. Rivers & Son sent from Sawbridgeworth, fruiting trees of Apples, Pears, Plums, Cherries, &c., and also dishes of these fruits. Messrs. G. Bunyard & Co., had a considerable collection; so had Messrs. W. Paul & Sons, Waltham Cross, who also contributed an excellent selection of autumnal Roses. Messrs. Cheal & Sons Crawley, had fruits, and a remarkable collection of Dahlias for the time of year. Messrs. J. Laing & Sons, Stanstead Park Nursery, also had a collection of fruit, many of the Apples finely coloured. Messrs. R. Smith & Co., Worcester, a collection also, and examples of a very promising main crop or late Plum, named Smith's Purple Prolific. Mr. J. Watkins, Pomona Farm, Hereford, had cider Apples, from which he manufactures the well-known champagne cider. Messrs. J. Carter & Co., High Holborn, a collection of varieties of Tomatos of high quality; and Mr. F. Mitchener, Anerley, a collection of Apples.

ROYAL AQUARIUM.

WEDNESDAY, October 14.—A remarkably fine display of Apples and Pears marked this autumn exhibition, whilst Grapes and other choice fruits were largely shown. All classes were well filled, and in the miscellaneous collections there was great variety, as well as much fine quality.

Grapes.—No fewer than five collections of twelve bunches were staged, the best, admirable samples, coming from Gunnersbury Park (gr. Mr. G. Reynolds). The blacks were Alicante, Gros Maroc, and Hamburgh; the whites, Trebbiano, Napoleon, and Muscat of Alexandria. Mr. Wilson, gr. to R. C. Christie, Esq., Roehampton, was a good 2nd. The best three bunches of black Grapes came from Mr. Griffin, gr. to the Misses Christy, Coombe Bank, with very finely finished Alicantes, who was also a good 1st, with fine Muscat of Alexandria, in the white class. Mr. W. Iggulden, Marston Gardens, was 2nd with blacks, having Gros Maroc; and Mr. Davies, Mote Park Gardens, Maidstone, had the 2nd best whites in large coarse Muscat of Alexandria.

Collections of Fruit.—These were not limited to number of dishes, and found five entries. The best, consisting of twenty-eight dishes, came from Mr. Blair, Trentham Gardens, and included Queen Pines,

Muscat of Alexandria, white, and Hamburg, Alicante, Madresfield Court, and Gros Colmar Grapes, with numerous Apples, Pears, Plums, Figs, and late Peaches. Mr. Reynolds was 2nd, with twenty-one dishes, and Mr. Davies was 3rd.

Pears were shown largely. The best collection, comprising sixty dishes of generally good samples, came from Mr. Davies, who, in this case, fairly beat Messrs. Cheal & Sons, Crawley, and Mr. Bunyard, of Maidstone, who came 2nd and 3rd. Remarkably fine were the twelve dishes shown by Mr. Blick, gr. to Martin R. Smith, Esq., Hayes Common, who had capital samples of Glout Morcean, Pitmaston Duchess, Conseiller de la Cour, Doyenné du Comice, Marie Louise d'Uccle, Durondeau, Beurré Bachelier, Magnate, Marie Louise, Beurré Diel, and Emile d'Heysch, Mr. Davies and Mr. Cook, Compton Bassett Gardens, came 2nd and 3rd. Mr. Bridger, Penshurst Place Gardens, had the best six dishes of Pears.

Apples.—Large collections of these were shown, those in the competition for the unlimited class were exceptionally good. Messrs. G. Bunyard taking 1st place with 120 dishes; Mr. John Watkins, Hereford, coming 2nd; and Mr. Waterman, gr. to L. C. Brasey, Esq., Aylesford Hall, being 3rd with eighteen dishes. Mr. Davies was 1st for seven, his fruits, such as Peasgood's Nonsuch, Warner's King, Alfriston, Sandringham, and Winter Hawthornden, being very fine; Mr. Bridgeman, 2nd. The best six dessert Apples came from Mr. A. Wyatt, Bedford, having Ribston, King, and Fearn's Pippin; Worcester Pearmain, Duchess' Favourite, and Margil, all first rate. The best six kitchen kinds were from Mr. Bridger, who had beautiful samples of Stirling Castle, Bismarck, Warner's King, The Queen, New Hawthornden, and Alexander; Mr. Sage, Ham House Gardens, was 2nd with some grand fruits. Of non-competing collections, Messrs. Cheal & Sons, Messrs. J. Laing & Sons, Messrs. Lee & Sons, Messrs. Paul & Sons, Messrs. Peed & Sons, and Messrs. R. Smith & Co., Worcester, had great variety. Mr. Watkins showed various Cider Apples.

Tomatoes were plentiful, Mr. E. Ryder, Orpington, and Mr. Norman Davies having the best collections, which included the best known varieties. The vegetables were good, the prizes for twelve dishes being taken by Messrs. Wilkins, Norwood House Gardens, Bladford; Mr. E. Lye, Symontou; and Mr. Waite, Glenhurst, Esher; the average quality being so good that it was hard to apportion the awards. Messrs. Sutton & Sons, Reading, offered prizes for single dishes of vegetables. Mr. Lye had the best Beets and Leeks; Mr. Wilkins the best Carrots and Onions. Mr. Waite the best Cauliflowers. Mr. T. Hosmer, Meopham, Kent, the best Parsnips; and Mr. Bury, Forest Hill, the best dish of Tomatoes.

Plants and Flowers.—Messrs. J. Laing & Sons, Forest Hill, showed a large group of Begonias in pots. Messrs. Cannell & Sons, Begonias, just lifted from the open ground, and cut Chrysanthemums. Messrs. W. Paul & Sons, cut Roses and hardy flowers. Messrs. Cheal & Son, Dahlias, &c. Mr. Jones, Lewisham, Chrysanthemums in pots. Mr. Pritchard, Christchurch, hardy flowers set in moss. Mr. Salmon, West Norwood, French Marigolds; Mr. Owen, Maidenhead, a good collection of cut blooms of Chrysanthemums, many from plants raised from seed sown last January; and Mr. Powell, Hornsey, had capital dwarf plants of Madame Desgranges and Guernsey Chrysanthemum, finely flowered.

appear to be as healthy and vigorous as ever, but it does not bear one-tenth as many nuts as it did ten years ago. The last three years the outer shell of the nut has been soft, and never gets hard as formerly. I shall feel very much obliged if in your next issue you will say if anything can be done to improve the bearing of this tree. *F. M.*"

MARKETS.

COVENT GARDEN, October 15.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal sale-men, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

Conns still sell fairly, with a downward tendency. Apples better trade. *James Webber, Wholesale Apple Market.*

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asters, French, 12 bunches...	9 0-12 0	Maiden Hair Fern, 12 bunches...	4 0-9 0
— English, per dozen bunches...	4 0-6 0	Marguerites, per doz. bunches...	2 0-4 0
Carnations, 12 buns. 4 0-6 0		Orchids:—	
Carnations, 12 blms. 1 0-2 0		Cattleya, 12 blms. 6 0-12 0	
Chrysanthemums, 12 blooms...	1 0-3 0	Odontoglossum crispum, 12 blms. 3 0-6 0	
— 12 bunches...	4 0-12 0	Pelargoniums, scarlet, per 12 bun. 4 0-6 0	
Cloves, per dozen blooms...	1 6-2 0	— 12 spays... 0 6-0 9	
Dahlias, 12 bun. 2 0-4 0		Pyrethrum, 12 buns. 2 0-3 0	
Eucharis, per dozen 2 0-4 0		Roses, Tea, per dozen 1 0-3 0	
Gaillardias, 12 buns. 2 0-4 0		— coloured, dozen 2 0-4 0	
Gardenia, per dozen 2 0-4 0		— yellow (Maréchal), per doz. 2 0-6 0	
Gladioli, 12 bunches 9 0-18 0		— red, per dozen 1 0-2 0	
Heliotrope, 12 sprays 0 3-0 6		— various, doz. bun 3 0-6 0	
Lilium Harrisii, doz. 4 0-6 0		Sweet Peas, 12 buns. 1 6-3 0	
Liliums, various, doz. 1 0-3 0		Tuberoses, 12 blms. 0 3-0 6	
Mignonette, doz. bun. 1 6-3 0			

ORCHID-BLOOM IN VARIETY.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, per doz. 4 0-12 0		Erica gracilis doz. 0 9-12 0	
Aralias, per doz. 6 0-12 0		Ferns, various, doz. 4 0-9 0	
Aspidistra, per doz. 18 0-63 0		— small, per 100 8 0-15 0	
Asters, per dozen 3 0-6 0		Ficus, each... 1 0-5 0	
Begonias, per doz. 4 0-6 0		Fuchsias, per dozen 3 0-5 0	
Chrysanthemums, per dozen 6 0-9 0		Geraniums, per doz. 3 0-6 0	
— large, each 2 0-3 6		Heliotropes, per doz. 3 0-5 0	
Coleus, per dozen 3 0-6 0		Lilium lancifolium, per dozen 9 0-18 0	
Cyperus, per dozen 4 0-10 0		Marguerites, per doz. 6 0-12 0	
Dracenas, each 1 0 5 0		Palms, various, each 2 0-21 0	
Erica hyemalis, per dozen 12 0-18 0		— specimens, each 10 6-34 0	
		Solanums, per dozen 9 0 12 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve 1 0-4 0		Melons 0 6-1 0	
Damsons, ½-sieve 1 3-2 3		Peaches, per dozen 1 0-4 0	
Grapes 0 6-3 0		Pine-apples, St. Michael, each 2 0-8 0	
Kent Cobs, 100 lb. 32 6-35 0			
Lemons, per case 15 0-30 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, each 0 4-0 6		Lettuces, per doz. 1 0-1 6	
Beans, French, lb. 0 6 1 0		Mushrooms, punnet 2 0-...	
Beet, red, per dozen 2 0-3 0		Mustard and Cress, punnet 0 4-...	
Carrots, per bunch 0 3-0 0		Par-ley, per bunch 0 3-0 6	
Cauliflowers, each 1 0-2 0		Shallots, per lb. 0 6-...	
Celery, per bundle 2 6-3 6		Spinach, per bushel 3 6-...	
Cucumbers, each 1 0-1 9		Tomatoes, per lb. 0 8-0 9	
Endive, per dozen 2 0-3 0		Turnips, per bunch 0 3-0 4	
Herbs, per bunch 0 9-1 0			

POTATOS.

Arrivals this week rather light. Trade for best kinds rather better, at a slight advance in price. Commoner kinds about same as previous quotations. *J. B. Thomas.*

NOTICES TO CORRESPONDENTS.

APPLE TREES IN INVENTORY OF A MARKET GARDEN: *N. B.* When a tree ceases to bear well, it should not be inventoried. The age of an Apple tree would scarcely have anything to do with it.

AAUCARIA IMBRICATA TO DRY: *T. C. S.* Fasten the scales of the cone with a rather close network of very fine florists' wire, and hang up in the shade until dry.

BOOKS: *Cymourus.* See a letter by "F. W. B." in our Home Correspondence, p. 461, of this week's issue. You would have to attend Science Classes at some institution which is in connection with the Science and Art Department at South Kensington. Send for prospectus.—*L. G. Hand-*

book of Hardy Trees and Shrubs, &c., by Decaisne, Naudin, and Hemsley (Longmans & Co., London). *Greenhouse and Stove Plants,* by T. Baines (John Murray, London). *Select Ferns and Lycopods,* by B. S. Williams, Victoria Nurseries, Upper Holloway: sold by same firm. *The Scientific and Profitable Culture of Fruit Trees;* translated from the French of M. Du Breuil, by W. Wardle (Lockwood & Co., Stationers' Hall Court, London).

BROWN SCALE, AND FUMIGATION WITH CAMPBELL'S FUMIGATOR: *W. M.* Will it not be better to extend your observations of the effects of the fumigation? If none of the scale-insects grow in size in the course of a few weeks, there will be no doubt of the efficacy of the remedy.

CYPRIPEDIUM: *Major M.* The flower sent does not tally with the description, but we cannot say of our own experience whether it is the true variety or not.

DRESSING WHEAT: *Pro and Con.* The dressing applied to seed Wheat or other grain destroys any spores that may be present. The spores are scattered everywhere by the wind, and readily infest the plant as soon as it sprouts. The dressing makes the seed-corn unpalatable to birds, mice, &c.

FRUIT FOR MARKET PURPOSES: *H. K. S.* *Six Apples:* New Hawthornden, Cox's Orange Pippin, Worcester Pearmain, Lane's Prince Albert, Bramley Seedling, Lord Grosvenor. *Six Pears:* Williams' Bon Chrétien, Louise Bonne of Jersey, Beurré d'Amanlis, Marie Louise d'Uccle, Marie Louise, Knight's Monarch, Glout Morcean. *Six Plums:* Belgian Purple, Reine Victoria, Kirke's—dessert varieties; The Czar (Rivers), Grand Duke (Rivers), Victoria (Denyers)—culinary vars. The Czar for very early, and Grand Duke for late fruiting, cannot be too much recommended, as they extend the season of Plums to nearly three months, the one ripening on bushes or standards about the end of July, and the other about the third week in October.

FUNGUS ON PEARS: *G. W.* When the fungus (*Fusicladium*) has attached itself to the rind of the fruits and run its course, there is nothing that you can do beyond destroying the fruits by fire; by so doing you will destroy some spores, but there will be millions more floating in the air next summer, ready to take advantage of, to them, favourable conditions, to attack the young Pears. The means taken to check the spread of other minute fungi, as sulphate of copper in solution, might be employed against this one by means of a spray-pump. Two or three thorough sprayings would probably be an effectual check, but the first one should be performed whilst the fruits are quite small.

MAYFARTH'S DRYING APPARATUS: *H. G.* Any questions with regard to this useful invention would doubtless be answered by Mr. Barron, Royal Horticultural Society's Gardens, Chiswick, on application.

NAMES OF FRUITS: *R. J. J.* Pears: 19, Vicar of Winkfield; 20, Doyenné du Comice; 21, Passe Colmar; 22, Glout Morcean; Apples: 14, Court of Wick; 15, Yorkshire Greening; 16, Brownlee's Russet; 17, Royal Russet; 18, Beauty of Kent; Grape: 24, Royal Muscadine.—*W. M.* 1, Doyenné du Comice; 2, Beurré Clairgeau; 3, Knight's Monarch; 4, Williams' Bon Chrétien; 5, Beurré Bosc; 6, Foselle.—*J. S.* 1, Hacon's Incomparable; 2, Souvenir du Congrès; 3, Louise Bonne of Jersey; 5, Williams' Bon Chrétien; 6, Beurré d'Amanlis.—*John Huggins.* 1, Ecklinville Seedling; 2, Winter Strawberry.—*G. C.* 1, Beurré Rance; 2, Ecklinville Seedling; 3, not recognised.—*W. R. King.* 1, Mère de Ménage; 2, Beurré Diel; 3, Napoleon; 4, Beurré Hardy; 5, Flemish Beauty; 6, Jersey Gratioli.—*C. P. C.* 1, Blenheim Orange; 2, not recognised; 3, Cellini.—*Bywater.* 1, Vicar of Winkfield; 2, Beurré Clairgeau; 3, Beurré Rance; 4, Bonne d'Ezée; 5, Beurré Hardy.—*E. M. P.* Apple: Gascoigne's Seedling; Plum: Magnum Bonum.—*H. H.* 1, Duchesse d'Angoulême; 2, Louise Bonne of Jersey; 3, Jersey Gratioli; 4, Williams' Bon Chrétien; 5, Lord Derby; 6, Warner's King; 7, Duchess of Oldenburgh; 8, Lord Suffield.—*A. F. G.* 1, Louise Bonne of Jersey; 2, Duchesse d'Angoulême; 3, Figue d'Alençon; 4, Hacon's Incomparable; 5, decayed; 6, unknown, very distinct form.—*Albert Harvey.* 1, Belle de Bruxelles; 2, Bellissime d'Uver.—*O. W. Gray.* Apple: Warner's King; Pear: Grosse Calebasse.—*G. J.* 1, Downton Nonpareil; 2, Bringewood Pippin; 3, Comte

Obituary.

REV. PERCY MYLES.—We regret to have to announce the death of this gentleman at Ealing. He was a graduate of Trinity College, Dublin, where he took high honours, and was not only a scholar but a naturalist. He was known as the Editor of *Nature Notes*, and to gardeners by the valuable glossaries appended to *Nicholson's Dictionary of Gardening.*

ENQUIRY.

WALNUT TREE FAILING TO RIPEN FRUIT.—Would any of our readers kindly furnish *F. M.* with a reason for his Walnut tree failing to ripen its fruits? He says:—"I have in my yard a very fine Walnut tree about 50 years old, the leaves and branches

de Lamy; 6, Plum; Magnum Bonum; 1, Coe's Golden Drop.—*J. H. 1, Kerry Pippin; 2, Red Astrachan; 3, decayed; 4, Claygate Pearmain; 5, Manx Codlin; 6, Lord Suffield; 7, Ecklinville Seedling; Pear: 1, Fondante d'Automne.—G. T. C. Pear: Souvenir du Congrès.—R. R. Davidson. Pear: Chaumontelle; Apple: 1, Dumelow's Seedling; 2, not known.*

NAMES OF PLANTS.—*A. P. Spiraea Fortunei.—J. M. Deafontainea formosa.—A. H. Lycesteria formosa.—D. E. 1, 2, and 4, all varieties of Cupressus Lawsoniana; 3, Thuya gigantea; 5, Cupressus nutkanensis alias Thuiopsis borealis; 6, Juniperus communis.—F. C. Nigella hispanica, not truly wild, but often introduced with foreign Clover or other seed.—W. E. Guizotia oleifera, a Composite.—A. C. Cocoloba platycladon.—Tush, 1, Wild Service tree, Pyrus torminalis; 2, Aster, not known; 3, Centaurea ruber; 4, Vinca major; 5, Scabiosa sp.; 6, Cotoneaster microphylla—why send such wretched scraps?—E. J. C. 1, Quercus coccinea; 2, Magnolia acuminata; 3, the Azore Island form of Prunus lusitanica; 5, Leucothoe axillaris; 6, a Cupressus, perhaps Goveniana—we cannot tell from the scrap sent. *J. C. Cinnam erubescens. Send fruiting spray of tree with berries.—T. C. Euonyma europæus.—J. C. & Co. Viburnum opulus.—J. B. Oncidium prætextum; Cattleya, we cannot express an opinion on your plant from your description.—W. H. S. Miltonia spectabilis var. Morelliana, one of the best that we have seen.—J. P. Eranthemum tricolor.**

PEAT MOSS LITTER: *T. B.* It should be thrown into large heaps, and fermented, so as to hasten its decomposition, and it may then be used as a dressing, by preference, on soils that need something added to increase their porosity as well as their fertility. These are the loams that are of a clayey nature. The materials would serve as a mulch on flower beds and borders, for Raspberry plantations, Asparagus beds, and when partially decayed as a manure for Celery. As the peat moss absorbs the greater proportion of the urine of the animals, it should not come near the roots of plants in a fresh state. It would prove a valuable winter dressing to heavy Grass land.

POTATO: *J. A. C.* We are not surprised at the occurrence, particularly as the "eyes" still retain a purple tinge. We cannot name the variety.

POTATO SATISFACTION: *H. K. S.* Sutton's Satisfaction is a fine-looking, good-eating tuber, resisting the disease well.

TENNIS LAWN DRESSING: *Beta.* Almost any kind of dressing does Grass good, if applied at the right time. If the lawn is well drained, something better than road grit should be put on it, for as the removal of the mown Grass gradually reduces the fertility of the land, a manurial aid is required to keep the sward fresh looking. Apply sifted loam one-half, and decayed manure and wood ashes one-half. Let everything be passed through a sieve or gravel screen, and applied in such quantity as not to hide the turf from view; say, ½-inch thick, and evenly. Do this in mid-winter when the land is frozen, and will bear a wheelbarrow without making wheel-tracks. It will have disappeared by the time the Grass begins to grow.

TUBEROUS BEGONIAS: *F. Geeson.* We think your seedlings are almost as fine as any that we have yet observed at metropolitan exhibitions.

VINE ROOTS: *J. R.* The roots are in a very bad state; probably the result of an insufficiently-drained border. We see plenty of dead insects, but no phylloxera.

VIOLA BLOOMS: *J. Forbes.* Exceedingly good blooms for the time of year. Varieties well adapted for an extended display from spring to the present time. As a rule, these plants do better in your country, and in the north generally, than "down south."

COMMUNICATIONS RECEIVED.—Sir T. L.—W. P.—J. R. A.—Dr. B. New York.—H. A.—T. B., Kew.—Ch. de B., Lierre.—M. Joly, Paris (with thanks).—Sutton & Sons.—H. J. V.—Professor M. Ward.—A. D. W.—E. M.—Barr & Son.—A. W.—M. R. P. (book not received).—J. R. J.—J. C.—W. H.—H. K. D.—L. L.—R. A. R.—W. S. B.—Major M.—T. B. H.—E. J. B.—F. Coomber (many thanks; very interesting).—Ernst Benary, Erfurt.—G. C.—Elias Long, Buffalo.—F. A. S.—T. H., Belgium.—W. Paul.—L. Castle.—W. B. H.—T. W. H.—J. G. B.—Wild Rose.—J. B.—R. D.—H. E.—Saos Pear.—F. R.—E. M.—J. D.—Expert.—A. D.—W. A. C.—J. J. W.—T. H.—J. K. B.

DIED.—NUTTING, PRISCILLA, wife of the late W. J. Nutting, of 60, Barbican, suddenly Oct. 9, 1891, in her 85th year.

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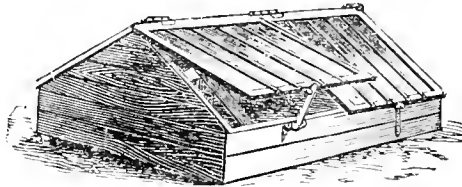
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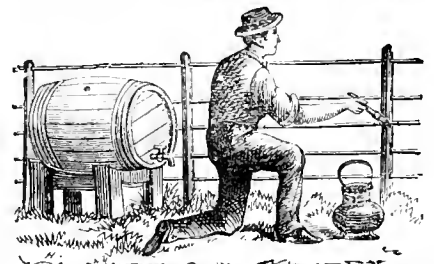
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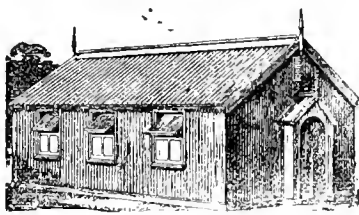
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MEETING.

WEDNESDAY, Oct. 21 } Royal Botanical Society of Manchester, Conference (two days), at Noon on each day.

SHOW.

TUESDAY, Oct. 20 } Royal Botanical Society of Manchester, Fruit Show (four days).

THE GARDENERS' CHRONICLE

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London Road Car Company (Limited).
TO FARMERS AND MARKET GARDENERS.
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the MANURE from the various Stables of this Company
from JANUARY 1 to DECEMBER 31, 1892.

LIST OF STABLES, and NUMBER of HORSES in each:—

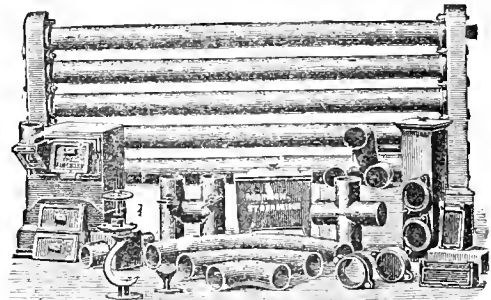
Page Street, Westminster	342	Horses
Regency Street, Westminster	56	"
Brewery Road, Caledonian Road	257	"
Catherine Wheel Yard, Bishopsgate Street	40	"
Lamb Street, Sp. tulfields	60	"
16, Fulham Road, S.W.	125	"
Farm Lane, Waltham Green	655	"
Cedars Mews, West Kensington	165	"
Milman's Street, Chelsea, S.W.	175	"
Gillay Square	72	"
Star Road, West Kensington	199	"
Mulgrave Road, West Kensington	40	"
42, Walmer Road, Notting Hill	83	"
143, Walmer Road, Notting Hill	115	"
82, Hammer-smith Road, W. (near Broadway) 377 ..		

Tenders marked "Tender for removing Manure," to be addressed to the SECRETARY, from whom full particulars may be obtained, and lodged not later than SATURDAY, 21st instant.

Tenders can be made either for a Section, or for the whole of the Stables.

9, Grosvenor Road, Westminster, Oct. 13, 1891.

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BREAKFAST—SUPPER.

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J. JEFFRIES & SON, Cirencester—Forest, Fruit, Avenue, and
Ornamental Trees.
HAAGE & SCHMIDT, Erfurt—Novelties in Asters, Phlox Drum-
mondii, Mimulus, Papaver, &c.
PAUL & SON, "Old" Nursery, Cheshunt—Roses.
D. PRIOR & SON, Myland Nursery, Colchester—Roses, Fruit
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cultivation of Plants, Fruit, and Vegetables. Good references.
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a thoroughly competent man.

GARDENER (HEAD WORKING), where two or more are kept.—Thoroughly experienced. Fourteen years' as Head in last situation. Good testimonials. Or would be willing to go abroad with Lady or Gentleman desiring to take out a useful man.—**GARDENER**, 11, St. Barnabas Street, Wellingborough.

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GARDENER (HEAD WORKING).—Age 38; twenty years' experience in all branches. Three years good reference, and eleven years' previous. Abstainer.—**A. B.**, 121, Coldharbour Lane, Camberwell, Surrey.

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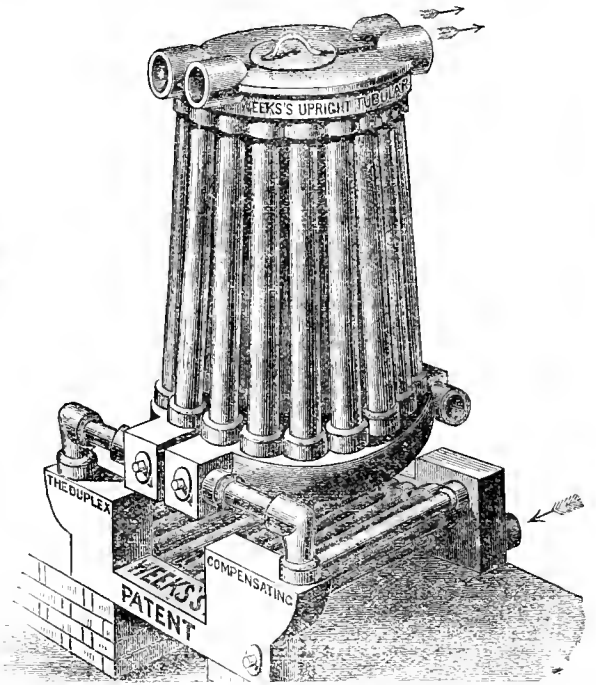
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Cheshunt.

ABSOLUTE CLEARANCE SALE of unusually well-grown **NURSERY STOCK,** in consequence of the expiration of the Lease of this Branch Nursery. By order of Messrs. Paul & Son.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, on the Premises, The Church Fields Nursery, Cheshunt (one mile from Cheshunt Station), on **WEDNESDAY** and **THURSDAY,** October 28 and 29, at 12 o'clock precisely each day, without reserve, about 12 acres of unusually well-grown **NURSERY STOCK,** in the best possible condition for removal, consisting of—

29,000 AVENUE TREES, 10 to 25 feet, with straight stems, carefully transplanted, and

SPECIALY ADAPTED FOR STREET PLANTING.

Including 10,000 LIMES, with good heads,

5000 Spanish and Horse CHESTNUTS, POPLARS, OAKS, and PLANES,

5000 BOX, large quantities of oval-leaved PRIVET, Scotch ROSES,

10,000 BUSHY AUCUBAS, 1 to 5 feet, undoubtedly the best lot in the Trade.

Specimen RHODODENDRONS, ARAUCARIAS, and variegated HOLLIES, Dwarf-trained and Pyramid FRUIT TREES, CURRANTS and STRAWBERRIES, of the best sorts, RASPBERRIES, and NUTS.

THE FINEST COLLECTION OF FLOWERING SHRUBS IN THE COUNTRY.

Including the

New Dwarf Flowering and Double LILACS,

THOUSANDS OF EVERGREENS.

suitable for London and Suburban Gardens; and other Stock.

May be viewed any day (Sunday excepted) prior to the Sale. Catalogues may be had on the Premises, of Messrs. PAUL and SON, The "Old" Nurseries, Cheshunt; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

NOTE.—The opportunity afforded by this Sale to intending purchasers is unique. No Sale has ever been held at these Nurseries, the stock having been prepared without any idea of a public sale, which now arises solely through the expiration of the Lease of this Branch Nursery.

The Auctioneers desire to call the particular attention of Public Companies, Local Authorities, and others to the unrivalled and extensive Stock of Avenue Trees, Aucubas, Evergreens, and Flowering Shrubs.

Havant.

UNRESERVED CLEARANCE SALE of the **FIRST PORTION** of the extensive **NURSERY STOCK** growing on the Leasehold Nursery, by order of Messrs. Ewing & Co., who are relinquishing the Business, and also in consequence of the expiration of Lease.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Sea View Nursery, Havant, on **WEDNESDAY** and **THURSDAY,** October 28 and 29, at 12 o'clock each day, 10,000 Standard, Dwarf, and Pot Roses of the leading kinds, for which these Nurseries are so well known; 10,000 Conifers and Evergreens of the choicest variety; 10,000 Ornamental Trees, Flowering Shrubs and Plants; 10,000 Forest Trees in various sizes; 5000 Apples, Pears, Plums, Cherries, Peaches, Nectarines, &c. (Standard, Dwarf, Trained, and Pyramid Trees); a large quantity of Raspberry Canes, in several sorts, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The **FREEHOLD NURSERY** of about 3 acres, with the **Residence,** is to be **LET** or **SOLD.**

Wednesday Next.

200 AZALEA INDICA and 100 CAMELIAS, selected varieties; and 100 AZALEA MOLLIS, from one of the best growers in England.

MESSRS. PROTHEROE AND MORRIS will include the above consignment of plants in their **SALE** on **WEDNESDAY NEXT.**

On view morning of Sale, and Catalogues had.

Derby.

UNRESERVED CLEARANCE SALE of the whole of the **Outdoor NURSERY STOCK.**

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Mile Ash Nurseries, Derby, about 1 mile from the Derby Station (Mid. Land Railway), on **TUESDAY,** October 27, at 12 o'clock—thousands of CONIFERS and EVERGREENS in the Borders, from 1 to 10 feet; common Laurels, Aucubas, Green Hollies, 100 named Rhododendrons, 24 magnificent Specimen Golden Yews, 5000 Dwarf Roses on the Manetti of the best varieties, also other Roses, 8000 Manetti Stocks, Standard Thorns, Limes, and other Trees, Herbaceous Plants, Carnations, Gooseberries, Currants, Lilies of sorts, and other Stock.

May now be viewed. Catalogues had of Mr. COOLING, on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Leytonstone.

TUESDAY NEXT.—SHORT NOTICE.

ABSOLUTE CLEARANCE SALE.

By order of the

TOTTENHAM and FOREST GATE RAILWAY COMPANY,
The Land being required at once for the Construction of the New Line.

IMPORTANT to the TRADE and OTHER LARGE BUYERS.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The American Nurseries, Leytonstone, E., almost adjoining the Leytonstone Station, on **TUESDAY NEXT,** October 27, at 12 o'clock punctually, without the slightest reserve,

4,000 CLEAN GROWN APPLES.

standards, pyramids, and espaliers, all growing in unbroken quarters: 500 standard, pyramid, and dwarf-trained Pears; 700 Cherries and Plums, standard Mulberries, Medlars, &c.

8,000 STANDARD ROSES.

as grown in unbroken beds, embracing all the leading varieties, lotted specially for the Trade and large buyers.

3,000 AUCUBAS, fit for potting;

300 fine London Planes, 12 to 14 feet; hybrid and ponticum Rhododendrons, Azalia mollis,

3,000 AMERICAN PLANTS.

20,000 double white Narcissus, 1,000 Lilium auratum, 300 Iris Kampeferi, double Paeonies, and other Stock.

May now be viewed. Catalogues had on the Premises, of Messrs. F. C. Mathews and Browne, Solicitors, 151, Cannon Street, E.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

East Dulwich, Wednesday, October 28.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp to **SELL** by AUCTION, on their Premises, The Orchid Nurseries, East Dulwich, London, S.E., on **WEDNESDAY,** October 28, commencing at half-past 12 o'clock precisely, a most varied Collection of Choicest Established and Imported ORCHIDS, the whole of which are in best possible health and condition. Among the most valuable and rarest species and varieties catalogued will be found the following:—

Grammatophyllum Szegei-anum, new	Cattleya Mossie Rembeckiana (sepals and petals pure white)
Sobraha macrantha Kienastiana, pure white macrantha.	Cattleya Gaskelliana nyca (sepals and petals pure white)
First-class Certificate, Royal Horticultural Society	Cattleya Fausta
Lodia Perrini alba (not nyca)	Renanthera Storiei, fine specimen
Cattleya intermedia alba	Angracum grandiflorum
Phalenopsis Sanderiana alba	Coleogyne Meycram, punctate type
Trichopha suavis alba	Masdevalla Schroderae, First-class Certificate, R. H. S.
Lodia anceps alba	Masdevalla Veitchii grandiflora, fine specimen
Coleogyne cristata alba	Eulophia Guineensis
Lodia autumnalis alba	Anaethochilus, the leading species
Lyaoste Skammeri alba	Vanda tricolor cinnamomea
Dendrobium lobale album	Cypripedium, a choice selection, &c. &c.
Ocloglossum nebulosum album	
Zygotetralium Mackayi album	
Sobraha leucocaulis grandiflora (alba)	
Vanda Staueana, grandest specimen in Europe	

The Sale will also include a splendid importation of the marvellous **ODONTOGLOSSUM HASTILARIUM,** just arrived in grand order.

The entire list, with a few exceptions only, will be offered **ENTIRELY WITHOUT RESERVE,** in order to make room for new importations due to arrive soon, this course being necessary, as owing to a short tenure of the Premises, it is not possible to increase the house accommodation.

Plants may be viewed two days prior to day of Sale, and Catalogues obtained on the Premises; also of the Auctioneers, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

The nearest Railway Stations are:—East Dulwich, Denmark Hill, Herne Hill, Lordship Lane, and Peckham Rye.

Plaistow, Essex.

UNRESERVED SALE of the whole of the well-grown **NURSERY STOCK,** by order of Mrs. Holmes, the land having been let for other purposes.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nursery, High Street, Plaistow, Essex, close to Plaistow Station, on **MONDAY,** October 26, at 1 o'clock precisely, without reserve, 300 AUCUBAS, 9 to 24 inches, fine plants for potting; also larger AUCUBAS, 3 feet; 1000 PRIVET; 200 green EUCONYMIUS, IRISH YEWs, good plants in pots, all staked; 1000 VIRGINIAN CREEPERS, and a variety of other stock.

May be viewed one week prior to Sale. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone.

Annual Sale.—Tottenham, N.

Adjoining the Tottenham Hale Station, Great Eastern Main Line, close to the Seven Sisters and Brace Grove Stations, on the Great Eastern; and also South Tottenham Station, on the Tottenham and Humpstead Railways.

IMMENSE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, N., adjoining the Hale Railway Station, G.E.R., on **TUESDAY,** November 3, 1891, at 11 o'clock precisely, in consequence of the unusually large quantity of lots, by order of Mr. Thomas S. Ware, an enormous quantity of **NURSERY STOCK,** comprising:—

30,000 NAMED CARNATIONS AND PICOTEES,

consisting of all the finest varieties, including Germania, the best yellow; Mrs. Reynolds Hole, salmon-apricot; Mrs. Frank Watts, the best white; Redraza, purple-edged picotee; Sir Beauchamp Seymour, orange-buff; Nurse Shee, creamy-bush; Nurse Fin, pure white; Paul Engleheart, crimson-clove; Mary Morris, bright-eye pink; Napoleon III., bright scarlet; and many other varieties. Thousands of Souvenir de la Malmaison Carnations, in the finest possible condition, strong plants in pots; 10,000 Hollyhocks, 10,000 Pyrethrums, strong clumps from ground, all named sorts; thousands of Delphiniums, Pinks, Potentillas, and other useful Stock.

25,000 CLEMATIS.

And others, fine strong stuff, including Jackmanni, Jackmanni alba, Beauty of Worcester, Countess of Lovelace, Anderson Henri, Lady Bovie, and other first-class varieties; also 2500 Ampelopsis Veitchii, 3 to 5 feet; 1000 Ampelopsis heteracea, 1000 Ampelopsis hirsuta ½ to 5 feet; Hogg, 2 feet; hermafrodita, 2 feet; and purpurea, 3 to 4 feet; 500 Escallonia, including Montevideoensis, 3 to 4 feet; macrantha, 1½ to 2½ feet; Ingrami, 1 to 2½ feet; 200 Bignonias, including coccinea Radicans, sanguinea, and Thunbergia, fine strong stuff, 3 to 4 feet; 2000 Hebea canariensis, 6 feet; 1000 Hebea maderiense variegata, 3 to 4 feet; 3000 in variety, including H. digitata, 3 to 4 feet; H. Bonariensis, 3 to 4 feet; H. taurica, 3 to 4 feet; H. Cavendishii, 3 to 6 feet; H. latifolia maculata, 5 feet; H. marginata rubra, 3 to 4 feet; H. marmorata minor, 3 to 4 feet; and many other varieties. Many thousands of Akabia punctata, Cotonera ter Simmondsii, strong; 4 feet; Cydonia japonica and Mantei, fine stuff, 2 feet; Jasminum multiflorum, 3 to 4 feet; Jasminum multiflorum aurum, 3 to 4 feet; Lonicera, in great variety, aurea reticulata, 3 to 4 feet; brachypoda, 2 to 3 feet; flexuosa, 2 to 3 feet; Passiflora corulea and Constantia Elliott, very strong stuff, 3 feet; Tacsonias, of sorts; Wisterias, and many other popular varieties.

5,000 LILIES, &c.

Choice home-grown Lilies, choice named Narcissus, Iris, and many other important families. Among the Lilies will be found extraordinarily fine roots of Lilium colchicum, Browni, chalcidicum, Humboldtii, the new Bloomerianum magnificum from Mexico, Martagon album, pardalinum, dalmaticum, Washingtonianum, the rare Wallichianum superbum, Wallacei, speciosum in great variety, and numbers of other rare and beautiful sorts; 50,000 BERLIN CROWNS LILY OF THE VALLEY. Fine forcing crowns, and all the true German variety; 5,000 SPIRÆA COMPACTA MULTI-FLORA, good forcing clumps; also thousands of the common variety; 3,000 CHRISTMAS ROSES, large forcing clumps, full of flower buds, including all the finest varieties; an immense lot of major, maximus, Madame Fourcade, vernalis, St. Bridget, and others; 100,000 FORCING PLANTS and BULBS, all first-class forcing stuff, including Spiræa palmata, palmata alba, japonica, japonica multiflora compacta, Lily of the Valley Clumps and Crowns, Delytra spectabilis, Narcissus in great variety; Lilies in variety, and numbers of other plants; and bulbs adapted for forcing purposes; 100,000 SPKALÉ and ASPARAGUS, exceedingly fine forcing crowns;

ROSES, ORNAMENTAL TREES, and SHRUBS.

A grand lot of Marechal Niels, in pots, 10 to 12 feet; Gloire de Dijon, 10 to 12 feet; White and Yellow Banksian, Rosa bracteata, Common China, Pomponne de Paris; Standard and Dwarf Roses in variety, including all the popular varieties; 2000 Veronica Traversi, Buxifolia, Carnoula, Epacridae, Cistus of sorts, Florentina laurifolia, Ladamiferus, fine bushy stuff; 500 Olearias in variety; Lombardy Poplars, fine stuff, 8 to 12 feet, well furnished; 500 Black Indian Poplars; a large quantity of large Standard Plums, and many other useful stock. 7000 Standard Limes, Planes, Poplars, &c., 8 to 10 feet in height, and well-leaved; 50,000 PERENNIALS, including thousands of Pampas Grass, Eulalia, Everlasting Peas, Anemone japonica, several varieties; Ham-rocallis, Sunflowers, Gaillardias, Poppies, Centaureas, Doronicums, Lychnis viscaria splendens, Campanulas, Rudbeckias, Yuccas; a grand collection of IRIS, fine strong clumps, including all the best forcing varieties; Pumilla of sorts; Olsienis of sorts; Sibirica of sorts; Florentina, the sweet-scented variety; Germania in great variety; Kampeferi, and many others; Delphiniums, thousands of Hollyhocks, and hundreds of other important families too numerous to mention.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.

A SENSATIONAL EXHIBITION and most important SALE, by order of Messrs. LINDEN, Directors of L'Horticulture Internationale, Brussels.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT October 30, at half-past 12 o'clock precisely.

200 CATTLEYA LABIATA AUTUMNALIS, in Flower; a unique spectacle.

Numerous varieties, in full blossom, surpassing in beauty all hitherto known of this most desirable Or. hid.

A grand lot of New DENDROBES, from New Guinea;

amongst these some distinct-looking, grand species; others in the way, or similar to, DENDROBIUM PHALENOPSIS SCHRADERIANUM.

These plants are in capital condition, semi-established, and finer than those already sold.

Good semi-attached plants of ODONTOGLOSSUM (COCHLIODA) NOZZLIANUM, some in flower.

Also of the most charming MEIOSPINIDIUM VULCANICUM GRANDIFLORUM, some in flower.

Semi-established plants of one of the most astonishing and sensational importations ever made.

ONCIDIUM LEOPOLDI ROLFF, the King of Oncidiums, together with

CYPRIPEDIUM VEXILLARIUM SPENDIDISSIMUM, in flower.

GENANTHUM SUPERBUM, in flower.

ARTHURIANUM, in flower.

All the plants are in wonderful condition.

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTED by WALTER KEMSLEY AND CO., 147, Leadenhall Street, London, E.C.

NEW CYPRIPEDIUM INSIGNE VARIETY.

A full description of this is given by Mr. H. Ridley, of the Botanical Gardens, Singapore, in the Gardeners' Chronicle, July 25, 1891. An extract from his remarks is appended.

"It is very distinct as a variety, both in form and colouring. The leaves are shorter and more crowded, the scape shorter, the flower rather smaller than that of the typical form. The general colouring is similar to that of the Nepal plant, but the white margin of the standard is broader, and runs right down to the base; the purple spots are crowded into the middle of the bright apple-green centre. The chid is different in shape.

"It is decidedly a charming plant of very neat habit, and appears to be floriferous. It will be welcomed by the lovers of Cypripedia."

A drawing taken from a plant in bloom in Singapore will be exhibited at the Sale, and the whole shipment, consisting of about 400 plants in fine condition, will be offered.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE on FRIDAY NEXT, October 30. On view morning of Sale, and Catalogues had.

Wanstead.

About 1 mile from Snaresbrook, Leytonstone, and Forest Gate Stations.

CLEARANCE SALE, without reserve, by order of Mr. Thomas East, who requires the land immediately for Brickmaking. The First Portion of the well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, The Nurseries, Wanstead Flats, Wanstead, E., on FRIDAY, October 30, at 12 o'clock, 3,000 Aneura japonica, 1 to 4 feet, including many hand-ome and bushy plants, Andromeda, English Yews, 1,000 fine Laurels, White and Purple Lilacs, Eucalyptus, Daphne Cneorum, 3,000 Green and Variegated Hollies, selected Fruit Trees, 1000 Roses in choice assortment, a large quantity of Limes, Poplars, and other Ornamental Trees, Scotch and Austrian Pines, and other Stock.

May be viewed one day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, and Leytonstone.

1000 Plants of the Old Labiata.

This is LINDLEY'S CATTLEYA LABIATA, from Swainson's Hunting Grounds.

NOT GARDNER'S LABIATA.

It has no Synonym.

IT IS THE TRUE OLD TYPICAL PLANT.

EVERY PLANT IS TRUE CATTLEYA LABIATA OF LINDLEY, GUARANTEED.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, November 6, at half-past 12 o'clock, a magnificent importation of the true old autumn-flowering CATTLEYA LABIATA, consisting of Upwards of 1000 Plants IN SPLENDID CONDITION.

ALL THE PLANTS ARE GUARANTEED TRUE.

The genus Cattleya was founded upon the species we now offer. Dr. Lindley first described it from Swainson's plant, introduced in the year 1818, and named it in honour of W. Cattley, E.q., of Barnet. This plant, now re-discovered and re-introduced, is absolutely the CATTLEYA LABIATA from Swainson's original hunting ground.

CATTLEYA LABIATA TRUE,

the queen of Cattleyas, and the finest of the genus.

The old labiata is a free-flowering Cattleya, and makes rapid growth, and is unequalled for cut-flower purposes and grandeur of variety.

Cliffe, near Rochester and Gravesend.

Adjoining Cliffe Station, S. E. Railway.

THIRD GREAT ANNUAL TRADE SALE OF FRUIT TREES, by order of Mr. W. Horne.

IMPORTANT to NURSERYMEN, FRUIT GROWERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester, on FRIDAY, November 6, at 11 o'clock, 100,000 FRUIT TREES,

comprising 30,000 Apples, Pears, Plums, and Cherries, including 1000 of the new dessert Apple, Beauty of Bath; 50,000 Baldwin Black Currants, 5,000 Red Currants, 15,000 Gooseberries, Bobs, Lads, and Whinham's, 5,000 Carter's and Norwich Wonder Raspberries, 5,000 John Ruskin Strawberries, new (Rival on Noble), 100,000 Laxton's Noble, and 50,000 Sir Joseph Paxton, 20,000 Connover's Colossal Asparagus, 50,000 Myatt's Cabbage Plants, 50,000 Drumhead, &c. Every lot must be sold to make room for others.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Hampton, Middlesex.—Absolutely without Reserve. THREE DAYS' CLEARANCE SALE, by order of Messrs. Mahood & Son, the ground having to be cleared for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Tingley Park Nursery, Buckingham Estate, Hampton, within a mile of Hampton Station on WEDNESDAY, November 4, and two following days, at 12 o'clock each day, the whole of the exceptionally well-grown and thriving NURSERY STOCK, recently transplanted, and comprising 6000 Standard and Pyramid Apples, Pears, and Plums, trained Peaches, 600 Standard Victoria Plums, fruiting trees, 5000 Maiden Apples, Pears, and Plums, 600 Cupressus lutea, 3 to 4 feet; 2000 Cupressus, 4 to 5 feet; 2000 Standard Roses, and 3000 Dwarf Roses, all leading varieties; 2000 English Yews, 300 Golden Privet, 3000 Common, Portugal, and other Laurels, 2000 yards Rox Edging, 5000 Standard Limes, 10 to 12 feet, splendid trees with straight stems; Thorns in variety, and other Ornamental Trees, a large assortment of Conifers and Evergreens in the borders, 1 1/2 to 3 feet; Weymouth Pines, 5 to 6 feet; large Laurels (recently moved), and other Stock.

May now be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Fulham, S.W.

CLEARANCE SALE OF GREENHOUSE PIPING and STOCK by order of T. Hoollies, Esq., the ground being required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Dorset Cottage, near the "Crab Tree," Fulham Palace Road, S.W., on WEDNESDAY, November 11 at 12 o'clock, AZALIAS, CAMELLIAS, ROSES, a few ORCHIDS, and other STOCK, the erections of 12 GREENHOUSES, HOT-WATER PIPING, BOILERS, UTENSILS IN TRADE, and other items.

May be viewed day prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Notice.—This Day.

HIGHLY IMPORTANT FIVE DAYS' UNRESERVED SALE of beautifully grown NURSERY STOCK, all well-rooted, and carefully prepared for removal, and specially selected for the Sale. By order of Messrs. Isaac Matthews & Son.

MR. JOHN OAKS, Ash, will SELL by AUCTION, on the Premises, at the far-famed Bagnall Tite Oaks and Milton Nurseries, on OCTOBER 21 and FOLLOWING DAYS, without reserve, several Acres of NURSERY STOCK, grown to the highest perfection. The Nurseries are in an extremely cold situation, and all the trees are perfectly hardy, and grown to the highest perfection. Extremely well-rooted and well-furnished Hodgkin's, Common, Madriensis, Silver, and Gold Hollies in variety, 200,000 Rhododendrons various, a large quantity of all leading varieties of Conifers, Evergreens, &c., suitable for Ornamental Planting, Parks, Cemeteries, Pleasure Grounds, &c. Large quantities of Thorn, Quick, Ash, Elm, Alder, Privet, Austrian Pines, Spruce Fir, Chestnuts, Willows. All other trees for Woods and other Plantations.

Catalogues now ready, on application to the Nurseries, Milton, Stoke-on-Trent. Milton is the nearest station, North Staffordshire Railway. All trains met.

Downham Market, Norfolk.

Within One Mile of the Station (Great Eastern Railway).

HIGHLY IMPORTANT UNRESERVED SALE of the ENTIRE VALUABLE NURSERY STOCK of the Lynn Road Nurseries, which—

MR. CHARLES HAWKINS is favoured with instructions from the Executors of the late Mr. James Bird, to SELL by AUCTION, in consequence of the lease having expired, on THURSDAY and FRIDAY, October 29 and 30, 1891, commencing each day at half-past 10 o'clock, including about—

- 2,000 Fruit Trees (Apples, Plums, and Cherries)
- 35,000 English Oak
- 30,000 Spanish Chestnut
- 20,000 Alder
- 140,000 Scotch Larch
- 70,000 Larch
- 200,000 Spruce
- 20,000 Myrobella
- 300,000 White-thorn
- 35,000 Birch
- 22,000 Hazel
- 15,000 Beech
- 35,000 A-sh
- 12,000 Hornbeam
- 8,000 Limes
- 12,000 Laurels
- 1,800 Pic-a-Northerniana

And a large quantity of Privet, Austrian Pines, Holly, Maple, Berberis, Walnuts, Sycamore, Box, &c.

Also, by permission, at the American Nurseries, the property of Messrs. Bird & Vallance, who have taken the Stock at these Nurseries by valuation, and in future will carry on the business as usual, the SURPLUS STOCK of valuable Specimens Ornamental and Evergreen TREES and SHRUBS, FRUIT TREES, STANDARD and DWARF ROSES, &c.

The Stock may be Viewed any time before the Sale, upon application to Mr. Vallance, Bridge Street, Downham Market. Catalogues will be forwarded upon application to the Auctioneer.

Offices—Downham Market, and Bank Chambers, King's Lynn.

Dutch Bulbs. Dutch Bulbs.

SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

In Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half-past 12 o'clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSESS, and other BULBS, arriving Weekly from well-known Farms in Holland. On view mornings of Sale, and Catalogues had.

Wednesday Next.

400 Choice-named Standard and Dwarf ROSES, a Consignment of 500 AZALEA INDICA and MOLLIS, CAMELLIAS, &c., from Ghent, well set with flower-buds, and in splendid condition; 200 fine CARNATIONS, "Malmaison;" 20,000 Berlin LILY OF THE VALLEY Crowns, 5000 AMARYLLIS SPECIES, LILIUM HARRISI, L. CANDIDUM, Home-grown LILIUM AURATUM, FREESIAS; also HARDY ORNAMENTAL SHRUBS, EVERGREENS, CONIFERS, &c.

MR. J. C. STEVENS will include the above in his SALE, by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 23.

On view morning of Sale, and Catalogues had.

Thursday Next.

IMPORTANT TO LARGE BUYERS OF DUTCH BULBS. GREAT TRADE SALE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 24, at half-past 12 o'clock precisely, an extensive consignment of BULBS from Holland, just received, and in splendid condition, and specially lotted for the Trade and other Large Buyers. On view morning of Sale, and Catalogues had.

Lake House, Cheltenham.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises, as above, on THURSDAY, November 5, at half-past 12 o'clock precisely, a COLLECTION of STOVE and GREENHOUSE PLANTS, formed by the late G. Neville Wyatt, Esq., consisting of well-grown specimens of Anthurium Andreanum, A. Scherzerianum, Dracaenas, Stephanotis floribunda, Palms, Gloxinias, Exhibition Specimen and Half-specimen Azaleas, comprising many choice varieties which have won prizes annually at the Cheltenham Shows, &c. On view the day prior and morning of Sale, and Catalogues had on the Premises, and of the Auctioneers, Offices and Rooms, 38, King Street, Covent Garden, W.C.

WANTED, a SMALL NURSERY, plenty of Glass, Midland town. Price low. L. G., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

SMALL NURSERY, or GROUND with SHEDS, or with HOUSE and SHOP. No Stock. Within 10 miles of London. Cheap. SOUTH, Gardeners' Chronicle, 41, Wellington St., Strand, W.C.

TO BE SOLD a Bargain (through death) the LEASE of a Capital MARKET NURSERY, with 11 good Glass-houses, all exceptionally well heated; also 200 good Pit Lights and Fixtures, capital Stabling and Dwelling House, standing on 1 acre. Rent, only £25 per annum. Apply to J. S., 2, Elm Villa, Town Road, Lower Edmonton.

London. West End.

FOR DISPOSAL, the GOODWILL of an established FLORIST BUSINESS, doing a first-class trade. Long Lease. Low rent. Price £550, for Goodwill, Stock, and Fixtures. Apply, PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

FOR SALE, TWO CORNISH TRENTHAM BOILERS, 7 feet long, 3 feet 6 inches diameter, with Check Bridge Ends and three Cross Tubes, with Furnace Fittings. All newly new. Lying in South Yorkshire. Apply, BOILER, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

FOR SALE, very cheap, a pair of EGYPTIAN GEESSE; splendid birds for Ornamental Lakes. J. NORTON, Superintendent, The Park, Great Grimby, Lincs.

J. WEEKS and CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers. King's Road, Chelsea, S.W.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus. Address, SECRETARY, 43, Great Tower Street, E.C.

Landscape Gardening.

ARTHUR M. KETTLEWELL (Author of The Theory and Practice of Landscape Gardening), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons. Address, TITLEY, R.S.O., Herefordshire.

DOBBIE'S CATALOGUE and COMPETITOR'S GUIDE for 1892.—25th Annual Edition, 160 pages, illustrated. Described by one of the greatest authorities in England as "the most useful list published in the trade." Will be ready on January 1, and will be sent gratis then to all who apply for it before Christmas, and enclose 3d. to cover postage.—DOBBIE AND CO., Seed Growers and Florists, Rothsay, Scotland.

FOR ORCHIDS, and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World. 30 minutes from St. Pancras.

ANTHONY WATERER invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted, the girth of the stem is taken at 4 feet from the ground.

- ACACIA BESONIANA, 10 to 14 feet, girth 3 to 4 inches.
- ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
- .. WIERJ LACINIATUM, 10 to 14 feet, girth 3 to 5 inch.
- .. NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
- .. REITENBACHII, 12 to 14 feet, girth 4 to 5 inches.
- .. SCHWEDLERII, 12 to 18 feet, girth 4 to 8 inches.
- .. WORLEYII, 12 to 14 feet, girth 3 to 6 inches.
- ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
- BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
- BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
- CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 4 to 7 inches.
- CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
- .. Double White, 14 to 16 feet, girth 6 to 8 inches.
- .. Scarlet, 12 to 18 feet, girth 4 to 10 inches.
- .. Spanish, 12 to 14 feet, girth 4 to 5 inches.
- ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
- .. Guernsey, 16 to 18 feet, girth 7 to 9 inches.
- LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
- .. EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
- .. Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.
- LIQUIDAMBER, 6 to 10 feet.
- MAPLE, Norway, 12 to 16 feet.
- OAK, English, 12 to 14 feet, girth 4 to 5 inches.
- .. Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
- PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
- POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
- SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
- .. Purple, 14 to 16 feet, girth 6 to 7 inches.
- THORNS, Double Pink, 8 to 10 feet.
- .. Scarlet, 8 to 10 feet.
- .. White, 8 to 10 feet.
- TULIP TREES, 8 to 10 feet.
- WALNUT, Common, 10 to 12 feet.

WEEPING TREES.

- BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
- .. Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
- BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
- .. Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
- ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
- LARCH, Weeping, Pyramids, 8 to 10 feet.
- POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.

Knap Hill Nursery, Woking, Surrey.

TO FRUIT GROWERS.—30 dozen Splendid FRUIT TREES for SALE, by private gentleman, thinning out Orchard. Named Apples, Pears, Plums, and Morello Cherries. All in full bearing, from 6 to 10 feet high, now laden with fruit. 26s. per dozen, on rail; also 2500 fine Raspberries (Carter's Prolific), and 800 Black Currants (Lee's Prolific). Inspection invited.
W. SHARP, Hazelwood, Cranleigh, Surrey.

CHRISTMAS and LENTEN ROSES.—Mr. BROCKBARK, our greatest authority, writing to the Garden, says:—"They are the finest I ever beheld." Good strong clumps full of flower-buds (large major var.), at 9s., 12s., 15s., and 24s. per dozen. Specimen plants, 1½ to 3 feet across. Price on application. Twelve Lenten Roses, in best named varieties, for 10s.
GEO. STAMP, Nurseryman, Bishop's Trington, South Devon.

100 ACRES OF
"EVERGREENS"
TO SELECT FROM.
Regularly Transplanted.
Hardly-Grown.
Lift with balls of earth, so can be conveyed any distance & safely planted.
Inspection invited. Catalogues Free.
— PLANT NOW. —
DICKSONS Nurseries CHESTER
(400 Acres.)

FRUIT TREES.—APPLES,
PEARS, PLUMS, CHERRIES, PEACHES, APRICOTS, NECTARINES. A grand assortment of all the choicest Varieties in fine Standard, Dwarf, and Trained Trees. Also a fine Collection of GOOSEBERRIES, CURRANTS, RASPBERRIES, STRAWBERRY PLANTS, &c.

ROSES.—HYBRID PERPETUALS and TEAS. A very fine Collection.

FLOWER ROOTS—HYACINTHS, NARCISSI, LILIES, TULIPS, &c. A very fine assortment, including all the most beautiful sorts, at moderate prices.
Before planting, send for our beautifully illustrated CATALOGUE of the above, gratis and post-free to all intending purchasers.

DANIELS BROS.,
TOWN CLOSE NURSERIES, NORWICH.

H. LANE & SON

Beq to call the attention of intending Planters to their extensive Stocks of TREES and SHRUBS for immediate effect, extending over 150 acres, including the following, all unimpaired by frost.

EVERGREENS.

AUCUBAS, BERBERIS, BOX, COTONEASTERS, HOLLIES (Green and Variegated), LAURELS, PORTUGAL LAURELS, MAHONIAS, GOLDEN YEW (fine specimens, 6 feet in diameter), and Thousands of smaller Seedling Varieties, in different shades of colour, variety, and form.

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DEUTZIAS, ELDER (Golden and Variegated), GUELDER ROSEN, THORNS in variety, LABURNUMS, LILACS, PHILADELPHUS, RIBES, SPIRÆAS, WEIGELAS, &c.

DECIDUOUS TREES.

MAPLES, SYCAMORES, BEECH, Black NORWEGIAN BIRCH, CHESTNUTS, ELMS, LIMES, PURPLE-LEAVED PLUM, WEEPING TREES, &c.

CONIFERS.

ARIES DOUGLASSI, ARAUCARIAS, CEDRUS DEODARA (splendid Specimens), CUPRESSUS, PICEA NORLIS and NORDMANNIANA, &c., PINUS AUSTRIACA, &c., RETINOSPORA in variety, THUJA LOEBI and others, THUJOPSIS BOREALIS and DOLARARATA (fine Specimens).

RHODODENDRONS, fine named sorts, well set with bloom. Ponticum and Hybrid Seedlings, Azalea Mollis, &c. FOREST TREES, ROSES, AND FRUIT TREES.

CATALOGUE FREE ON APPLICATION.

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DENDROBIUM FORMOSUM GIGANTEUM, IN BUD.

HUGH LOW & CO.

Beq to offer a magnificent lot of the above showy white ORCHID, with splendid growths, well set with buds.

Price 90s. and 126s. per dozen.

CLAPTON NURSERY, LONDON, N.E.

Special Cheap Offer.

ELCOMBE and SON, The Nurseries, Romsey, Hampshire, beg to offer the following for cash:—
AMERICAN ARBOVITTE, 4 to 5 feet, per 100, 30s.; ditto, 5 to 6 feet, per 100, 50s.; ditto, 6 to 7 feet, per 100, 80s.
CUPRESSUS LAWSONII, 2½ to 3 feet, per 100, 25s.; ditto, 3½ to 4 feet, per 100, 40s.; ditto, 5 to 6 feet, per 100, 60s.
THUJA LOEBI, 5 to 6 feet, per dozen, 12s.; ditto, 6 to 7 feet, per dozen 18s.; ditto, 9 to 10 feet, per dozen, 42s.
CUPRESSUS ERRECTA VIRIDIS, 4 feet, per dozen, 18s.
VARIEGATED EUCONYMUS, Golden Broad-leaf, 1 to 1½ feet, per 100, 4s.
The above are all well-grown and finely-rooted.

FERNS! FERNS!! FERNS!!!—Stove and Greenhouse. Great Annual Sale. Surplus Stock; 100,000 in 25 most saleable sorts, at 12s. per 100 in 2½-inch pots; out of pots, 10s. Large Adiantum cuneatum, 50s. per 100, value in fronds. Large Ferns, in variety, 45s. per 100. A. cuneatum for potting, 12s. and 16s. per 100. Palms, 15s. per dozen, in 48s. Packed free for Cash with Order.
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ROSES! ROSES! ROSES!
PLANT NOW.

100 STRONG DWARF H.P. ROSES, for 35/- 100
THE FINEST IN THE TRADE.

Send for Sample Dozen, 5s. Cash with Order.
CATALOGUES, free on Application.

C. H. GORRINGE, Roselands Nursery, EASTBOURNE.

Special Cheap Offer to the Trade and large Planters, **ISAAC MATTHEWS and SON**

have large quantities of the under-mentioned trees to offer cheap:—100,000 RHODODENDRONS, Early, White, Scarlet, Pink, and other varieties, fine plants; and 500,000 Ponticum and Seedling Hybrids, various sizes, from 1 to 1 feet, by the 100 or 1000; 500,000 THORN QUICK, four and six-year old, extra strong; COMMON ASH, 3 to 4 feet and upwards; MOUNTAIN ASH, 6 to 12 feet; BIRCH, 8 to 9, 9 to 10, and 10 to 12 feet; HORSE CHESTNUTS, from 2 to 10 feet; also a large quantity of Horse Chestnuts, 12 to 15 feet, and specimen trees for avenue-planting. ENGLISH YEW, ELMS, and HORNBEAMS, 8 to 10 feet; AUSTRIAN PINES, fine trees, 3 to 8 feet; recently-transplanted POPLARS, varieties, 6 to 12 feet; SPRUCE, for Christmas Trees, also for Forest Planting; AUCUBA, HOLLIES, BOX, CUPRESSUS, IVIES, LAURELS, &c.
CATALOGUES on application.
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EXHIBITIONS.

BRIGHTON and HOVE CHRYSANTHEMUM SHOW.
THE DOME, ROYAL PAVILION,
TUESDAY and WEDNESDAY, Nov. 3 and 4.
Entries close Tuesday, October 27. Schedules may be had of
18, Church Road, Hove. MARK LONGHURST,

KENT COUNTY CHRYSANTHEMUM SOCIETY.
The FOURTH ANNUAL GRAND EXHIBITION will be held in the Rink, Blackheath (opposite S.E.R. Station), on TUESDAY and WEDNESDAY, November 3 and 4. Over £120 in prizes. Schedules, &c., free, of
E. A. SEARLE,
Vale House, Park Road, Forest Hill, S.E.

ASCOT, SUNNINGHILL, SUNNINGDALE, and DISTRICT HORTICULTURAL SOCIETY.
CHRYSANTHEMUM SHOW, WEDNESDAY and THURSDAY, November 4 and 5. For particulars of open Prizes and for Schedules, apply to T. J. PATTON, Hon. Sec., Ascot.

CRYSTAL PALACE, GRAND CHRYSANTHEMUM SHOW,
FRIDAY and SATURDAY, NOVEMBER 6 and 7.
Schedules and Entry Forms on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.
Entries close on Friday, October 30.

NATIONAL CHRYSANTHEMUM SOCIETY, ROYAL AQUARIUM, WESTMINSTER.
GREAT AUTUMN EXHIBITION and FESTIVAL, WEDNESDAY, THURSDAY, and FRIDAY, Nov. 10, 11, & 12. Chrysanthemums, Table Decorations, Fruit, and Vegetables. Many valuable special Prizes of great interest. Schedules of Prizes and all particulars of—
RICHARD DEAN, Secretary and Superintendent,
42, Ranelagh Road, Ealing, London, W.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.
President: G. C. SHERRARD, Esq., J.P.
The FIFTEENTH ANNUAL GRAND EXHIBITION will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 10 and 11, 1891, when, in addition to valuable Money Prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be again competed for. Schedules, and any information, may be had from the Hon. Sec., MR. GEORGE WOODGATE, Warrea House Gardens, Kingston Hill, Surrey. Entries close on November 6.

READING CHRYSANTHEMUM SOCIETY.
FLOWER and FRUIT SHOW, November 11 and 12, 1891.
Prizes, £140. Entries close November 7.
WM. L. WALKER, Secretary,
Dunollie, Bulmershe Road, Reading.

LEEDS PAXTON SOCIETY'S THIRD CHRYSANTHEMUM SHOW will be held in the Town Hall on TUESDAY and WEDNESDAY, November 10 and 11, when upwards of £170 will be offered in Prizes, including Two Valuable Silver Challenge-Cups. Entries close November 3.
ASKET HILL, Roundhay, Leeds. JOSH. SMITH, Hon. Sec.

THE BATH CHRYSANTHEMUM SHOW
— November 11 and 12, 1891. Entries close Nov. 6. For Prize Schedules apply to
R. R. F. PEARSON (Sec.),
2, Northumberland Bldgs., Bath. W. JEFFERY

BIRMINGHAM GREAT CHRYSANTHEMUM AND FRUIT SHOW,
NOVEMBER 11 and 12.
£240 in Prizes.
Entries close November 4. Schedules sent free on application to the Secretary—
J. HUGHES, 140, High Street, Harborne, Birmingham.

SCOTTISH HORTICULTURAL ASSOCIATION.
GRAND CHRYSANTHEMUM EXHIBITION, NOVEMBER 19, 20, and 21.
Schedules and all particulars on application to the Secretary,
ROBERT LAIRD, 17, South Frederick Street, Edinburgh.

WIRRAL and BIRKENHEAD HORTICULTURAL ASSOCIATION.
The Fifth Annual Grand SHOW OF CHRYSANTHEMUMS, PLANTS, and FRUIT, to be held in the Y. M. C. A., George Road, on THURSDAY, November 12, 1891. For Schedules, apply to
S. W. SWAN, Hon. Sec.,
The Oaks, Church Road, Tranmere.
Proposed International Fruit Show in London in 1892.

HORTICULTURISTS and OTHERS
interested in the proposal to hold a GREAT INTERNATIONAL FRUIT SHOW in London, in the autumn of next year, are cordially invited to attend a PUBLIC MEETING at the CANNON STREET HOTEL, E.C., on FRIDAY, October 30. The Chair will be taken at 3 P.M., by ALDERMAN SIR JAMES WHITEHEAD.

DAFFODILS!!!—The Cream in all the sections. Grown in undisturbed Hundred-year-old pasture Loam; and better still, Irish. Can be procured from Hartland's Unique Collection at Cork. Illustrated Price Lists free, and immediate delivery to all parts of the United Kingdom.
WM. BAYLOR HARTLAND, F.R.H.S., Seedsman, Cork.

Over 100 Acres, Nursery Stock.
NOW is the Time to Order.
ROSES—ROSES—ROSES,
FRUIT TREES,
Ornamental Trees and Shrubs,
FOREST TREES,
 And **HEDGE PLANTS.**
 And Other
RHODODENDRONS, AMERICAN
 PLANTS.
CLEMATIS, IVIES, and
HARDY CLIMBING PLANTS.
 NEW ILLUSTRATED CATALOGUE
Of all above, may be had POST-FREE.
WM. CLIBRAN & SON,
 Oldfield Nurseries, Altrincham;
 Also, 10 and 12, MARKET STREET, MANCHESTER.

**CANNELL'S
 TUBEROUS BEGONIAS.**

We are quite certain that all lovers of the Begonia can readily imagine the labour and anxious care that we have bestowed upon it for many years, to bring it to its present indispensable position, and they will also understand how desirous we are to ascertain direct from those who have had them their actual opinion, good, bad, or indifferent. And the same with our Vegetable and Flower Seeds that we have supplied; we shall at all times be further pleased to receive specimens of any really improved kinds of either, from whoever may possess such.

Mr. W. F. MACKENZIE, The Gardens, Thurso Castle, Thurso, N.B., September 28th, 1891.

Gentlemen,—No doubt you will be glad to hear how the Begonias we had from you have succeeded in the extreme north. They have proved far beyond my most sanguine expectations. The brilliancy and profusion of the flowers were marvellous, while some of them measured within a fraction of 6 inches across, and they are the admiration of every one who sees them.

Ashleigh, Inchfield, Wolverhampton, July 18th, 1891.

Dear Sirs,—I cannot refrain from sending you a few lines to say how thoroughly I am satisfied with the Seedling Begonias I had from you this spring. I send you by this post a flower which is a fair sample of the bulk, and certainly there was nothing to compare with them in the show recently held here. The other plants are a so very fine.—I am, dear Sirs,
 Yours faithfully, JNO. H. BIRCH.

H. CANNELL & SONS,
 SWANLEY, KENT.

**FRANK CANT'S
 ROSES,**

*Have been Awarded the Jubilee Champion
 Cup of the National Rose Society,*
 AND THE
FIRST PRIZES in the great 72 CLASSES

AT
HEREFORD, WOLVERHAMPTON, MANCHESTER, and TIBSHELF,
 Besides upwards of 40 other **FIRST PRIZES**
 THIS YEAR.

*Full List of Prizes for Four years, published in my
 ROSE CATALOGUE, post-free.*

BRAISWICK NURSERY,
 COLCHESTER.

**LILIUM WALLICHIANUM
 SUPERBUM.**

HUGH LOW & CO.

Have to offer a large quantity of the above exceedingly fine and rare Lily. The plants are strong and healthy, IN FLOWER AND BUD.

Price 5s, 7s. 6d., and 10s. 6d. each.
 Price to the Trade on application.

CLAPTON NURSERY, LONDON, N.E.



BUYERS SHOULD COME AND VIEW THE STOCK.

**PAUL & SON'S
 GREAT HARDY NURSERY,
 CHESHUNT, N.**

Invite Planters to Inspect and Select from their Stock of

PAUL & SON'S CHESHUNT ROSES.

STANDARDS—Demand large. Early orders necessary.
 DWARFS—Virtually all on the accepted stock—the Briar.
 POT ROSES—The finest lot they ever held; therefore the finest in the world.
 ROSE SPECIES and SINGLE ROSES—A specialty of the Firm.

PAUL & SON'S FINISHED FRUIT TREES.

STANDARDS, more especially APPLES, the very finest in the Trade. From £12 per 100 downwards.
 PYRAMIDS, and all FORMED TREES, vigorous, and yet of best shapes.
 All SMALL FRUITS, to ALPINE STRAWBERRIES, carefully tended.
 Large Planters should see the Stock.

PAUL & SON'S HARDY TREES.

The variety of them is wonderful. By careful selection the smallest garden may be made a varied picture.
 From 1s. per dozen.

PAUL & SON'S HOLLIES & EVERGREENS

Of every description, are moved and do well—notably Hollies, of which there are 8 acres at the Epping Forest Nursery, from 2 to 12 feet, 1s. to 5 guineas each.

PAUL & SON'S AMERICAN PLANTS.

The free-setting RHODODENDRONS and AZALEA MOLLIS—specialty at the High Beech Nurseries.

PAUL & SON'S CONIFERÆ.

The most varied collection in England. Special selections of ROCK GARDEN SHRUBS, and for Villa Gardens.
 ARAUCARIAS in thousands, green and beautiful.

**PAUL & SON'S HERBACEOUS AND
 ALPINE PLANTS.**

For Borders, Rockwork, Cut Flower producing.
 An acre of ROCK PLANTS at the Broxbourne Nursery.
 ESTABLISHED 1807. Eighty-four years' continuous attention and application has made these Hardy Nurseries one of the most complete in Europe. Planters should see for themselves.

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 THE OLD NURSERIES, CHESHUNT.
 (One Mile from Cheshunt Station, G.E.R.)

**DUTCH BULBS,
 FRENCH BULBS, AND
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See our Special Wholesale Catalogue of Bulbs.
 Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.
 Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,
 SEED and BULB MERCHANTS,
 EXETER STREET, STRAND, LONDON, W.C.



For Market and Private Growers.
ORNAMENTAL TREES, SHRUBS, ETC.
Descriptive CATALOGUES Post-free.
J. CHEAL & SONS
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ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.
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 Have an immense Stock of
**ESTABLISHED & SEMI-ESTABLISHED
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And they are constantly receiving Importations from various parts of the world.

DESCRIPTIVE and PRICED CATALOGUES
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THE VINEYARD & NURSERIES,
 GARSTON, near LIVERPOOL.

**THE BULBS AT
 VERY BEST LOWEST
 BEST RATES.**

LARGE & VARIED COLLECTIONS OF
**HYACINTHS, TULIPS,
 CROCUSES, SNOWDROPS,
 NARCISSI, LILLIES, &c.**

All thoroughly ripened and in excellent condition for planting.

Illustrated Descriptive Catalogue, No. 397.
 POST FREE ON APPLICATION.

Seed & Bulb Growers
DICKSONS CHESTER

CARNATIONS.—CARNATIONS.

Per doz.—s. d.	Per doz.—s. d.
Vivid, bright scarlet ... 4 6	Marchioness of London-erry, white... 4 6
Purity, white ... 2 0	Mrs. Reynolds Hole ... 12 0
Bosc, bright purple ... 4 6	Old Crimson Clove ... 8 0
Maid of Athens, white, beautifully marked ... 6 0	Scarlet Clove ... 6 0
with pink ... 6 0	Germania ... 18 0
Raby Castle, deep pink... 8 0	Souvenir de la Malmaison 9 0
The Bride, white... 3 0	Gloire de Nancy ... 9 0
Fine Border Varieties, our selection, 6s., 9s., and 12s. per doz.	
All fine, strong stuff, in 3-inch pots.	
HERBACEOUS PLANTS, a fine collection, our selection, 6s. doz.	
CATALOGUES on application.	
HELD BROS., Victoria & Castle Nurseries, PENRITH.	


A SENSATIONAL SHOW and SALE.

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GRAND EXHIBITION AND SALE BY AUCTION

OF

CATTLEYA LABIATA AUTUMNALIS IN BLOOM.

 A UNIQUE SPECTACLE NEVER BEFORE SEEN in LONDON,
Worthy of being witnessed at any sacrifice of time or outlay.

UPWARDS OF 200 CATTLEYA LABIATA IN BLOOM,
OTHERS IN SHEATH.

Numerous Emergent Varieties in Full Blossom, surpassing in beauty all hitherto known of this most desirable Orchid.


MESSRS. PROTHEROE & MORRIS,

AT THEIR ROOMS, 67 and 68, CHEAPSIDE, LONDON, E.C., will EXHIBIT and OFFER for SALE, on
FRIDAY NEXT, October 30,

A MAGNIFICENT LOT OF REAL, TRUE, CATTLEYA LABIATA,
Plants in bloom, and in sheath, evincing in themselves THEIR AUTHENTICITY (see *Gardeners' Chronicle* of last
week, October 17, ROLFE'S description, page 452).

MESSRS. LINDEN are the FIRST REAL RE-IMPORTERS of the CATTLEYA LABIATA of Lindley,
and were so eighteen months ago.

Amateurs purchasing Messrs. LINDEN'S PLANTS IN BLOOM will have no need to wait till they blossom
before being certain of the VALIDITY OF WHAT THEY ACQUIRE.

 *The opportunity of seeing these extraordinary varieties in bloom (a unique spectacle), will not present itself again
for a long time to come.*

Also the whole Importation of a magnificent NEW FORM of LABIATA,

CATTLEYA MAJESTICA — ONE PLANT IN FLOWER.

Also a GRAND LOT of NEW DENDROBES from NEW GUINEA, semi-established and unflowered in mag-
nificent condition; some QUITE NEW, some supposed to be DENDROBIUM PHALÆNOPSIS SCHRODERIANUM
—PLANTS MUCH FINER than those sold last week; the rare white DENDROBIUM LEUCOLOPHOTUM.

Also COCHLIODA NOTZLIANA and MESOSPINIDIUM VOLCANICUM
GRANDIFLORUM, both in bloom. Two grand things they are!

Also some semi-established plants of the marvellous ONCIDIUM LEOPOLDI, Rolfe.

FRUIT TREES—FRUIT TREES.

HUGH LOW & Co.

Offer, of good quality, and will esteem the favour of Orders:—
APPLES—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.
APRICOTS—Standard, and Standard Trained.
CHERRIES—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.
PEARS—Dwarf Maidens, Dwarf Trained, Pyramids, Standards.
PLUMS—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.
DAMSONS, FARLEIGH PROLIFIC—Dwarf Maidens, Pyramids, Standards.
PEACHES AND NECTARINES—Dwarf Maidens, Dwarf Trained, Standards, Standard Trained.
Quantity Large—Quality Good—Prices Moderate.
 INSPECTION INVITED.
Bush Hill Park Nursery, ENFIELD.

Many Acres of Lilies of the Valley!
T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of Testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 24, 1891.

ORCHID CULTURE IN BELGIUM.

AMONG the multitude of English people who annually pass through Brussels, there are probably not a few who are interested in the cultivation of Orchids. Such persons cannot do better than spare two or three days to see the collections in and near the Belgian capital, at Ghent, and elsewhere within easy reach. Without going so far as to say that the taste for the cultivation of Orchids has become as general in Belgium as it has done with us, the existence there of societies, and of illustrated and other periodicals devoted to these plants, shows that Belgium is not far behind. About the middle of September, I spent two days—not long enough, but all I could spare—in visiting the private collection of M. Warocqué, at the Château de Mariemont; the business establishments of MM. Linden (L'Horticulture Internationale); and of Mr. Peeters, at Brussels; the small private collections of Mr. Van Imshoot and Mr. Hye-Leyssen, and the nurseries of Messrs. Vuylsteke and Vervæet, at Ghent. I was anxious to have seen the nursery of Mr. Vincke, near Bruges, where I was told the cultivation of Odontoglossums had been brought to perfection—but time was wanting.

Before making any observations on what I saw, it should be mentioned that I did not find anywhere general and varied collections of Orchids. The genera cultivated, indeed, the species, were comparatively few, and in great measure confined to the showy and large-flowered forms. No doubt the real test of cultural skill is the ability to keep in health a varied and extensive collection of genera and species, gathered from all parts of the world, and growing in Nature under very varied conditions. At the same time, Nature can play tricks, if I may use the expression, which Art dare not try. I have seen Saccolabiums and Aërides growing where there were night frosts, and in most seasons snow, in the winter; but no one would like to expose such plants to frost and snow in cultivation. So that, however varied the conditions may be under which plants grow in Nature, it is not desirable to do more than follow such indications generally in cultivation.

Except at Messrs. Lindens', the plants cultivated are mostly Cattleyas, Lælias, Odontoglossums, Cypripediums, and Miltonias, and at M. Warocqué's are Vandas. I may say at once that I have never seen Cattleyas and Odontoglossums more healthy and vigorous. September is not the flowering season for Orchids, so I saw but few plants in bloom. But the vigour and strength of the bulbs left little or nothing to be desired

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 238 **HIGH HOLBORN, LONDON**

No doubt both at Mariemont and at Messrs. Lindens' the so-called *Cattleya Warocqueana* was present in large numbers. These plants have not been long in the country, and many people grow newly-imported Orchids well enough, only to see them dwindle away when their native vigour is exhausted. But grand as were the *Cattleya labiata* (for the synonym *Warocqueana* must be discarded), the *C. Mendelii*, *gigas*, *Mossie*, *amethystoglossa*, *Leopoldii*, &c., were nearly, if not quite, as good. Since my return to England, I have discussed the Belgian cultivation of *Cattleyas* and *Odontoglossums* with English growers—men of long and wide experience, and able cultivators. They have seen some of the Belgian collections themselves, and some of them thought the growth and bulbs, especially of the *Odontoglossums*, were soft and sappy, and by no means indicative of lasting health and vigour, or of promise for flower. I cannot agree in their view. I brought a few plants home with me, merely as examples of successful cultivation. The bulbs are broad, hard, and bronzed; the leaves thick, stiff, and sturdy; the plants very firm in their pots, owing to an abundance of roots. If such bulbs do not produce good flowers, my experience has taught me nothing. Surely, in Orchid cultivation, as in every other branch of gardening, if you grow plants well you will generally get good flowers; that has, at all events, been my experience. It is the same with the *Cattleyas* and *Laelias*; the bulbs are clean and strong, nearly every one has a flower-sheath; roots are abundant, and the plants have an unmistakable aspect of general vigour. The new "old *C. labiata*" gives indications of being a plant of remarkable vigour, and of excellent constitution. The double-sheaths, whether green or brown, are so well developed, that there is a V-shaped gap between them at the apex.

No one can fail to be struck with the admirable cleanliness, order, and arrangement which characterise the plant-houses of "L'Horticulture Internationale." It would be possible, and in no way unpleasant, to eat one's dinner off any part of these houses. Here there is, much more than elsewhere, a general collection of Orchids—the only popular genera which are sparsely represented being those of *Phalænopsis*, *Dendrobium*, and *Maderallia*. I may here observe that *Dendrobium*, bulbous *Calanthes*, and other winter or early spring-flowering Orchids do not seem much in favour in Belgium. The "Société Anonyme" maintains several collectors, among them *Bungeroth*; and *Monsieur Linden* (père) has so wide a knowledge of what are still the great botanical hunting-grounds in northern South America, that he is able successfully to direct the collecting staff. I heard of many treasures which had been sent over to the company—new *Cattleyas*, *Odontoglossums*, *Oncidiums*, &c., including a blue *Oncidium* of the *O. macranthum* section. As to these, I say:—

"Segnius irritant animos demissa per aures,
Quam quæ sunt oculis subjecta fidelibus,"

which in the vulgar tongue is tantamount to "seeing is believing." But whatever may be the future treasures in store for us, my "faithful eyes" saw several plants of interest, recently introduced, in flower. Among them was *Cochlioda Noezliana*, a very distinct and pretty plant, a *Mesospidium*, but of a peculiar rosy-vermillion tint. Others were, a pretty little yellow and white *Dendrobium*, with a long flat bulb, shaped like a fish; an *Aganisia*, like *A. coerulea*; a yellow *Trichocentrum*, resembling *Trichopilia Galeottiana*; a pretty *Cirrhopetalum*, like a large *C. Mastersii*; a fine *Mormodes*, a yellow *Catasetum Bungerothii*, a fine *Coryanthes*, &c. There were besides, of course, *Cattleyas*, *Vandas*, *Odontoglossums*, &c., in flower.

The collection at the Château de Mariemont

has been made, I believe, under the direction and guidance of *M. Lucien Linden*. In addition to the *Cattleyas*, *Laelias*, and *Odontoglossums* already referred to, there are some very fine and vigorous *Vandas*, and a few good *Cypripediums*, and other things. *Vanda Lowii* is remarkably well grown; the plants are well-rooted, and carry leaves to the surface of the pot. One plant I saw was fully 8 feet high, with five young growths from the stem; and another, which had unfortunately been killed by frost on its way from a show, had required to have a hole in the ground a metre deep made for it. There is not in this collection any one *Vanda Lowii* equal to the celebrated plant at Ferrières, but the species is admirably grown. I noted also at Mariemont as exceptionally fine, *Oncidium incurvum*, *Odontoglossum Edwardii*, with a spike like a walking-cane, and ten branches; and fine pans of the sweet-scented and lovely *Odontoglossum pulchellum*. The bulb of one *Odontoglossum crispum* was 5 inches high by 3½ broad, and there were many nearly as large. *Odontoglossum grande* was in flower, and very vigorous. *Vanda Batemannii* and *V. Kimballiana* were finely bloomed, the latter with twenty-one brilliant-lipped flowers on its spike. *Vanda Sanderiana* was doing well.

At the nursery of *M. Vuysteke*, at Loo-Christy, near Ghent, *Odontoglossum crispum*, *O. Pescatorei*, and *O. grande*, are largely and successfully cultivated. The bulbs are fine, the foliage dwarf and sturdy, and the spikes, judging from what remains of them, had been grand. I noticed a little mildew on some of the leaves, and the chalky water disfigures them, but the plants, speaking generally, were thoroughly well-grown. The *Cymbidium* in this nursery, especially those of the *C. Lowii* section, were very fine.

At Messrs. *Vervæet et Cie.*, the *Odontoglossums* had been lately divided, repotted, &c. They appeared to have been fine and well cultivated, but require time, of course, to recover from their late treatment. *M. L. Linden* told me that this firm's connection with Orchids began by their purchase of some boxes of *Odontoglossums*, sent over from Bogota by Jesuit priests. Among these, which may possibly have been cultivated by the reverend fathers, a large number of fine and special varieties appeared. The *Cattleyas*, *Laelias*, and *Cypripediums* at *MM. Vervæet's* were very fine, as fine as those at *Mariemont*. The specimens are, many of them, in tubs raised on stands, leaving room for small Palms between them.

The collections at *M. Van Imshoot's* and *M. Hyeleyssens's* are small, but interesting.

It only remains now for me to notice the plants at the nursery of *Mr. Peeters*, *Chaussée de Forest*, Brussels. *Mr. Peeters* himself showed me his plants, which were, I thought, most creditable to his skill as a cultivator. The *Cattleyas*, *Laelias*, and *Odontoglossums* here again looked remarkably healthy and vigorous, especially the *Odontoglossums*, which were equal to any I saw in Belgium. Among the plants were several fine pans of *Miltonia Morelliana*, in vigorous health, and a house full of *Cypripediums* doing well.

The *Miltonia vexillaria* and its allies are certainly not grown in Belgium with the exceptional vigour shown by the cool *Odontoglossums*, nor did I anywhere see a good plant of *Cattleya Skinnerii*. *Phalænopsids* are few and far between. The general impression left on my mind was, that such genera as find favour in Belgium are admirably grown. As the taste for Orchids spreads, and becomes more cultivated, growers will learn to appreciate the beauty, variety, and interest to be found among the many genera and species of comparatively small and modest Orchids. I see no reason why these should not be as well grown in Belgium as are now the bold and showy ones.

The only material differences in practice to be observed in Belgium are the invariable use of the fibrous roots of the *Polypodium vulgare* instead of peat, which is never used, in the potting compost; and the equally invariable employment of the midribs of Tobacco leaves, placed on wire netting over

the pipes and occasionally moistened, to keep down thrips and other insect pests. As to peat, every Orchid-grower has seen plants innumerable of nearly every genus growing luxuriantly in a compost of which it formed a part. The *Polypodium fibre* (*terre fibreuse*) is, however, to all appearance, an excellent potting material, with little waste, and is well worth a trial. The Tobacco-leaf stems diffuse a very perceptible, but not unpleasant, odour in the houses, especially when fresh; and if to them belongs the credit of the absence of insect pests from the houses, as is at least probable, their use is a great help to the cultivator, and saves endless trouble. The collections I saw were all of them remarkably clean and free from insects; but—and it is a large but—Tobacco in this form is both costly and difficult to procure in sufficient quantities in England. It struck me that less artificial heat was used, and more air given, than with us; but the weather was warm. Wooden blinds (*claires*) are nearly always used instead of canvas; they certainly let in more sun, without the risk of burning.

I should not like to conclude these remarks without expressing my obligations to *Monsieur Lucien Linden* for the great courtesy and attention he showed me while at Brussels. Thanks to him, and the arrangements he so kindly made, I was able to see a great deal of what I most wished to see in the limited time at my disposal. I should, however, add that although *Mons. Linden* was an excellent *cicerone*, I did not see with his eyes. The views here expressed are the results of careful observation and unbiassed judgment, and they are shared by my Orchid grower, *Mr. White*, who accompanied me. *T. L.*

NEW OR NOTEWORTHY PLANT.

LILIUM WALLICHIANUM, VAR. SUPERBUM,
*Hort. Low.**

THIS is a very marked variety of *Lilium Wallichianum*, *R. & S.*, if indeed, it should not be regarded as a distinct species. It was introduced about three years ago by Messrs. *H. Low & Co.* from Upper Burma. It differs from the typical *L. Wallichianum*, which is an inhabitant of the Himalayas, of Nepal and Kumaon, by its primrose-yellow flower, suffused on the outside with claret-purple, its brown anthers, and by the presence of large green bulbilla in the axils of the upper leaves. It received a first-class certificate from the Royal Horticultural Society on June 25, 1889, under the name of *L. Wallich superbum*, but the name under which the species was described was *L. Wallichianum*. It was figured and noticed in the *Garden* for April 19, 1890, under the name of *L. nepalense ochroleucum*, but there can be no question that its affinity is with *L. Wallichianum*, not with *L. nepalense*. *L. nepalense*, *D. Don* and *L. ochroleucum*, *Wallich*, are two names for one and the same plant. *Wallich*, whose collectors first gathered the plant in the mountains of Nepal, intended to call it *ochroleucum*. He sent specimens to *Lindley* under this name, and his original drawing, now at Kew, is named *ochroleucum*. But *Don* published the plant as *L. nepalense* in the third volume of the *Transactions of the Wernerian Society*, p. 412, and when *Wallich* published his figure in the third volume of his *Plantæ Asiaticæ Rariores*, tab. 291, he adopted *Don's* name. *General Collett*, who made a large collection of plants in Upper Burma, does not seem to have gathered the present plant, but he got an allied new species of the *Eulirion* group, with erect open funnel-shaped flowers not more than 4 inches long, which, in his paper, written in collaboration with my colleague,

* *Lilium Wallichianum*, var. *superbum*, Hort. Low.— Bulbo magno globoso; caule stricto erecto 6-7 pedali apice cernuo; foliis perpluribus sparsis linearibus viridibus, inferioribus multis brevioribus bulbilla in axillis præditis; perianthio 7-8 pollicari pallide sulphureo extus rubro-purpureo suffuso, tubo late infundibulari, segmentis supra medium falcatis interioribus valde latioribus; staminibus perianthio paulo brevioribus antheris magnis brunneis; stylo curvato antheris superante.

Mr. W. B. Hemsley, and published lately in the *Journal of the Linnean Society*, is described and figured under the name of *Lilium Bakerianum*. This has not yet been introduced into cultivation. My description of *L. Wallichianum superbum* has been made from a fine plant now in full flower at the south end of the new temperate house at Kew, which was presented to the Royal Gardens by Messrs. Low.

Bulb large, globose; stem 6 to 7 feet long, and stiffly erect, cernuous at the apex, green throughout; leaves very numerous, scattered, erectopate, bright green, 3 to 4 inches long, about $\frac{1}{3}$ -inch broad, with only one conspicuous nerve; upper leaves growing gradually shorter, about twenty of them being furnished with large bulbilla in their axils; uppermost leaves lanceolate flowers two or

work of time, requiring an amount of skill and close observation imperfectly understood by those whose experience has been confined to subjects quickly and easily grown, and which may be got from the cutting-stage to full size in the course of one or two years. The position which Mr. Nicholas has maintained at several of the principal exhibitions, including York, Manchester, and others of like character, is evidence of the high cultivation which he has brought to bear on the Upleatham plants.

In the stove department, *Ixoras* were noted as being a strong feature, specimens of *I. Williamsii* and *I. Pilgrimii* are from 4 to 5 feet through, with ample foliage on their vigorous shoots. Of other varieties, including the white *I. alba*, there was a number of thriving young specimens that give a long season of bloom—flowering, as they do, where pro-

of a character such as admits of their being arranged with almost any other description of cut bloom, but from the long continuity of the plants in flower, they fill a place which few other things are capable of doing well.

Franciscea calycina was noted in specimens some 4 feet through, and *Rondeletia speciosa major* of a similar size; both were strong, fully-furnished examples. Of *Anthurium Scherzerianum*, so proverbial for the exuberance of its flowers, there are several large specimens, good forms of this most variable plant. Several large specimens of *Stephanotis* had made excellent growths.

Associated with the above-named plants was a grand plant of *Calanthe veratrifolia*, that in the past spring bore thirty spikes of its long-lasting snowy flowers; *Cypripedium Lawrenceanum*, a fine

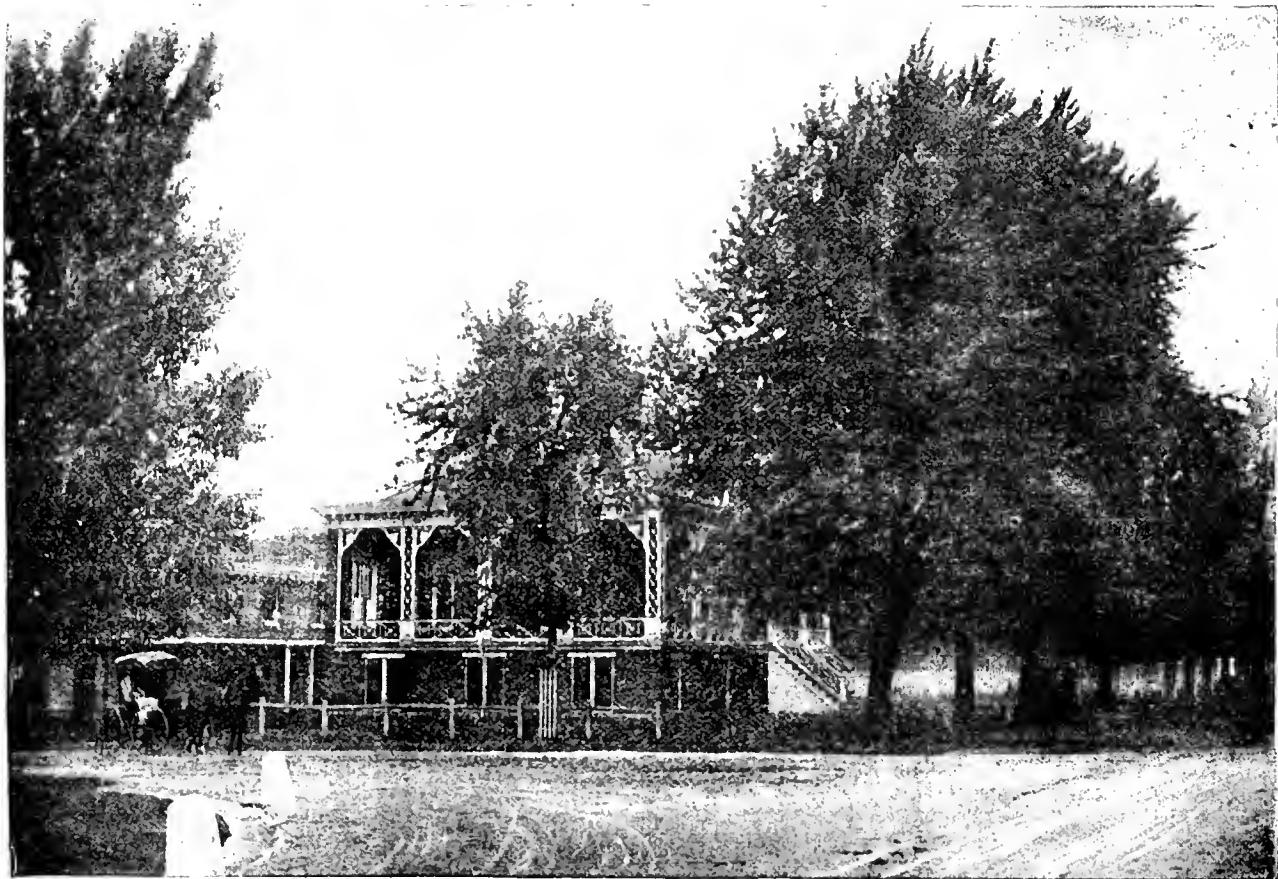


FIG. 62.—LODGE FOR GARDEN PUPILS, MISSOURI SCHOOL OF HORTICULTURE, ST. LOUIS. (SEE P. 489.)

three, pendent on long peduncles, fragrant, pale sulphur-yellow tinged outside with claret-red; perianth about 8 inches long, the segments permanently connivent in a funnel-shaped tube, which is about 5 inches long, and 2 to $2\frac{1}{2}$ inches broad at the top when the flower is fully expanded, falcate about one third of the way down; outer segments little over 1 inch broad; inner nearly 2 inches; stamens $1\frac{1}{2}$ inch shorter than the perianth; anthers above 1 inch long, brown with red-brown pollen, like those of *L. Brownii*; filaments straight, the same colour as the perianth; style curved, the stigma overtopping the anthers. *J. G. Baker.*

NOTES FROM UPLEATHAM.

The cultivation of hard-wooded stove and greenhouse plants up to a size that will admit of their competing successfully at leading exhibitions, is a

perly treated, over the greater portion of the year. Plenty of heat, with a liberal diet in the shape of manure-water afforded almost constantly, is required by these plants whilst growing, and they are scarcely ever allowed to rest. Insects must also be kept down in numbers.

Amongst *Allamandas*, there are specimens of *A. nobilis* and *A. grandiflora*, quite 5 feet in diameter; and *Dipladenias* are represented by fine specimens of *D. amabilis*, *D. Brearleyana*, *D. boliviensis*, and a seedling variety, *D. Thomas Speed*, which is said to be larger in the flowers and deeper-coloured than *D. amabilis*, with the still further merit of retaining its flowers so as to have more of them open at one time on the trusses than is the case with other varieties.

Quite apart from the importance which *Ixoras*, *Dipladenias*, and *Allamandas* hold on the exhibition stage, they are equally indispensable where cut flowers are largely in demand; for not only are they

variety, about $2\frac{1}{2}$ feet through, is unusually strong. In *Crotons*, there are large examples of *C. Queen Victoria*, *C. Johannis*, and *C. angustifolius*, each 6 or 7 feet through, pictures of health and fine colour. Amongst the newer sorts was observed a beautiful example of *C. Thomsonii*, one of the best and highest-coloured varieties.

In the conservatory were some grand Palms and Tree Ferns. Of the former, *Corypha australis* is 15 feet in diameter; *Chamaerops humilis*, 10 feet high, with a beautiful head of healthy leaves; several large *Kentias*, including *K. Belmoreana*, 18 feet high, and proportionate in the spread of its leaves; *Dicksonia squarrosa* has a stem 10 feet high, with a splendidly-furnished head; *D. antarctica*, somewhat less in height, but in fine condition; *Cibotium regale* is 16 feet in the spread of its fronds; *Neottopteris australasica* and *Lomaria zamiaefolia* are both large, and in fine condition; *Davallia fijiensis plumosa* measures 7 feet across; *Pteris acaberula*

and *Leucostegia immersa* are only a little less. *Davallia tenuifolia Veitchiana* is 5 feet through. This is one of the most beautiful species that has ever been introduced; its delicate arched fronds give the plant a peculiar elegance different from all other Ferns. *Gleichenias* are well managed; the kinds grown are *G. Mendelii*, *G. rupestris glaucescens*, *G. spelunca*, and *G. dicarpa longipinnata*. Several of these are 6 or 7 feet through. Amongst greenhouse plants I noticed a good example of *Chilma's* variety of *Aphelaxis macrantha rosea*, a scarce plant, and the best of all the *Aphelaxis*, *A. macrantha purpurea*, *Boronia elatior*, *Darwinia tulipifera*, *Epacris miniata*, *Statiche profusa*, *Leschenaultia biloba*, *Lapageria alba*, and *L. rosea*, with others of like character, varying in size from half to full-sized specimens. There is a nice selection of the best species and varieties of *Ericas*, of which may be mentioned *E. ampullacea*, *E. amula*, *E. Marnockiana*, *E. Cavendishiana*, *E. ventricosa Bothwelliana*, *E. Irbyana*, *E. Fairrieana*, *E. Austiniana*, *E. Turnbullii*, *E. Massoni major*, *E. gemmifera*, *E. elegans*, and *E. depressa*, ranging in size from 3 to 4½ feet in diameter, all in a healthy, thriving state. *T. B.*

ORCHID NOTES AND GLEANINGS.

VANDA HOOKERI AND ODONTOGLOSSUM CORONARIUM.

The rare and beautiful *Vanda Hookeri* was recently flowering freely in the collection of C. W. Lea, Esq., Parkfield, Worcester, in several examples, some of which flowered last May. These plants are grouped in one of the Orchid-houses, and form a rare and beautiful sight, with about two dozen expanded flowers. In the same collection, two well-grown plants of the rare and beautiful *Odontoglossum coronarium* were showing flowers, one having two, and the other three fine spikes. To have flowered this species so well is a credit to Mr. Catt, the Orchid-grower at Parkfield. *A. O.*

CATLEYA LABIATA VAR. AUTUMNALIS *alias* WAROCQUEANA.

This beautiful variety is now in bloom in great profusion in the collection of E. Moon, Esq., Cassio-bridge, Watford. A marked feature in these flowers is the brighter tint of the sepals and petals than is found in most of the other forms of *C. labiata*. The different plants display great variation in growth and flower; one has flowers with blush-white sepals and petals, and a rich velvety-crimson lip; and several are of very dark and rich colours, one especially being superior to any of those forms which have been distinguished by varietal names, and figured in various periodicals.

LEMNA PRESTANS.

A fine compact mass of this handsome dwarf-growing Orchid is suspended in an Orchid-house at Cassio-bridge; it is a grand example of what a good form of this species may become. The plant has thirteen flowers, of about 4 inches across, and of fine form. The colour of the front of the lip, which is broadly developed, is of a rich crimson, and the fact of this plant always sending out several spikes, which bear three flowers each, proves that it is different from the ordinary form of *L. prestans*.

DENDROBIUM AINSWORTHII ×, *Lindenia*, t. 297.

A hybrid between *D. aureum* and *D. nobile*. Flowers white, lip with a purple throat. The plant was raised as long ago as 1867, but did not flower till 1874.

CATASCTUM BARDATUM, *Lindenia*, t. 298.

LELIO-CATLEYA AINOUDIANA ×, *Lindenia*, t. 299.

A hybrid raised by Messrs. Sander between *L. purpurata* fertilised with the pollen of one of the varieties of *Cattleya labiata*. The seed was sown in 1881. Flowers large; sepals and petals pale rose-coloured, lip deep rose, with a yellow blotch in the throat.

RHYNCHOSTYLIS CÆLESTIS, *Lindenia*, t. 300.

The habits of this plant are like those of a *Saccolabium*; the racemes erect, many-flowered; the flowers white, with the front part of the lip deep violet. It is a native of the Malay Archipelago.

CATLEYA LABIATA AND VAR. WAROCQUEANA.

In my former article, at p. 367, I alluded to the type-plant of *Cattleya labiata* var. *Warocqueana* in the Kew collection, which produced a three-flowered raceme in May, 1890, as promising to flower during the present autumn. A few days ago the sheath burst, showing an inflorescence of four flowers, which have just expanded, and prove to be identical with others which have flowered elsewhere, both in this and the previous autumns, though they are a little paler than some forms I have seen. This proves unmistakably that the plant flowering in May was abnormal, it being influenced by the unfavourable conditions under which the plant was placed in transit, and that autumn is its normal season to flower. There can be no possible doubt on this point, for this is the very plant from which the description was originally prepared, though I had also wild dried flowers and coloured drawings, which showed a rather unusual range of variation, and these, of course, were also utilised. The few other plants which flowered in May last year, I am told, have also failed to do so in the present one, but have fallen into line with the others on becoming established. There can be now no doubt that the name *Warocqueana* will have to be cancelled. *R. A. Rolfe.*

JERUSALEM ARTICHOKE.

At this season of the year, with the return to our tables of this valuable esculent, we are reminded of the somewhat singular statements of Canon Ellacombe, under the above heading, in the columns of the *Gardeners' Chronicle*, p. 151 of the issue dated so far back as January 31, 1891, and express our surprise that they should have so long passed without challenge or comment:—"That the Italian *Girasole* is the *Ricinus* or *Palme Christi*, and the Italians had, in the seventeenth century, a plant called *Girasole*, but it was a very different plant from the *Jerusalem Artichoke*." When we couple these remarks with those from the same gentleman (October 6, 1882), "I have never been able to find with certainty that the plant ever was called *Girasole*," we have the key to his remarks, that he has settled the question of nomenclature. Before proceeding to comment upon the Canon's observations, we should like to put the matter of nomenclature before the public, so far as we understand it.

The controversy which has arisen at various times as to the name *Jerusalem Artichoke*, has been caused through a mistaken idea that its original country was Italy, whereas its native country is either Peru or Topinambour, a district in Brazil, and the name is evidently a corruption of its Brazilian name, "*Girasole tuberoso*." Nearly a decade ago (1882), the same gentleman took exception to some remarks in the Editor's leader in the *Gardeners' Chronicle* (October 21, 1882), that "the *Jerusalem Artichoke* had nothing to do with *Jerusalem* or *Artichokes*," which he said was true of the thing, but not of the name, and our ancestors were not likely to take the Italian name, and then immediately corrupt it; further, he had never been able to find with certainty that the plant had ever been called "*Gira sole*." Thereupon ensued a discussion for a few weeks, and the subject dropped, left as ambiguous as ever.

During that discussion, Mr. H. J. Ross stated the Italian name of this plant as "*Tartufi-bianchi*," an appellation also given to the *Piemonte Truffa*. Mr. C. Wolley Dod introduced the *Custard Marrow* into the discussion under the French name of "*Artichaut de Jerusalem*." Canon Ellacombe ended the discussion by asking for evidence of the introduction of the *Jerusalem Artichoke* by way of Italy, or for proof of the name *Girasole* in any

Italian work published prior to 1617; a proceeding quite on a par with bringing into the discussion a similar French name as applied to another vegetable, the plant under discussion coming from America under the Spanish name of *Girasole*, nothing could satisfactorily be proved by Italian books. However, according to Canon Ellacombe, we have now a settlement of the question, an Italian posthumous translation of *Matthioli* and also *Dalechamps' Histoire Générale*, have been referred to, and discussion of the derivation of the name having now been set at rest, the perseverance of the Canon has raised ignorance from despair and established happiness in the paths of science! On carefully perusing the extract from the books already mentioned, we find that in Tuscany *Ricinus* is called *Girasole* and also *Faguolo*, and in Lombardy *Mirasole*; so far *Matthioli's* translator.

Then, *Dalechamp* informs his readers that *Palma Christi* is called by the Italians *Girasole*. By the way, it may be here remarked that the Italians at the present time also use the name "*Fagiolo*" for several species of *Phaseolus* and *Dolichos* as well as *Palma Christi*, but now spelled differently, not *Faguolo*, but *Fagiolo*. Then the writer sums up:—"The Italians had in the seventeenth century a plant called *Girasole*, but it was a very different plant from the *Jerusalem Artichoke*." Perhaps there is no need of apology on my part to ask permission to remark that a very pertinent question has arisen to my mind—was it necessary to search the tomes of these ancient learned men—*Matthioli*, who died in 1577, and *Dalechamp* in 1597—for proof of the well-known fact that *Ricinus communis* is not *Helianthus tuberosus*? To quote an analogy, is it necessary to consult *Theophrastus* to find out the fact that his *Sykomorus* is a different plant from the *Sycamore* grown in Britain? or *Holy Writ*, for the inference that *Amos*, a scratcher of *Wild Figs*, could not use his handicraft upon our *Sycamore*?

To return to our subject. Perhaps, if *Matthioli* had been further consulted, *Palma Christi* would have been found also to be an *Orchis*,* and he could have thrown no light upon the *Jerusalem Artichoke* question, as he probably never knew it. About the time *Dalechamp* was writing his book, the *Jerusalem Artichoke* was known in Italy as *Flos solis Farnesianus*, said to have been introduced from the West Indies; and we also read that about that period it was called *Aster peruvianus tuberosus*, which throws some inference upon its American habitat having originally been more southerly than might be inferred from its Italian name of "*Girasole del Canada*." Whilst another, also Italian, name of "*Girasole Topinambour*," localises it to a district in Brazil called *Topinambour*.

Filippo Re, in *L'Ortolano*, ii., p. 222, informs his readers: "*Girasole*. Il cui nome secondo il puro linguaggio toscano è *Clizia* Appartiene al genere *Helianthus* di *Linneo*, classe xix., ord. iii." And also in vol. i., p. 87, we find "*Girasole. Helianthus annuus*, Significa ancora *Ricino*. *Girasole del Canada* vedi *Topinambour*." And in vol. ii., p. 385: "*Topinambour*. Poir de terre, Fr. Appartiene al genere *Helianthus* di *Linneo*, *Helianthus tuberosus*," &c. Again, *Filippo Re* in *Il Giardinere*, vol. ii., p. 170, "*Helianthus tuberosus Girasole topinambour*."

In *Evelyn's Acetaria*, p. 75, we have also the information that the *Sunflower* "ere it commenced to expand and show its golden face, was dressed as the *Artichoke*, and eaten for a dainty;" but this, even in *Evelyn's* time, he tells us, "had abdicated to foreign countries;" so that *Girasole Artichokes* might have been applied to other members of the *Helianthus* family, as well as, and even prior to, *H. tuberosus*.

Parkinson tells us (A.D. 1625), the history of *Batatas* of *Canada*, and their introduction into England was from *Canada*.

In 1592, *Fabius Columna* calls it *Aster peruvianus tuberosus* and *Flos solis Farnesianus*, having observed it growing in the garden belonging to

* *Orchis conopsea*. Spr. *Palma Christi*, *Matth. Valgr.* 1585 tom ii., p. 935.

Cardinal Farnesius, who had introduced it from the West Indies.

Johnson, in Gerard's *Herbal*, ed. 1633, says:—"One may well perceive by the English name of this plant that those that vulgarly give names to plants have little either judgment or knowledge of them; for this plant hath no similitude in leaf-stalk, root, or manner of growing, with an Artichoke, but only a little likeness of taste in the dressed root; neither came it from Jerusalem or out of Asia, but out of America."

In conclusion, we may ask the question, are there not plenty of anomalies in the horticultural world without adding more? *Stachys tuberifera* is to be called the Chinese Artichoke, and it is not necessary to remark, that it is not an Artichoke, nor has it an origin or anything to do with China. "They are neither of Chinese origin, nor are they Artichokes." [This is partly erroneous. The plant is a native of Northern China as well as of Japan. Ed.] *Hm. Eberington Dixon, Assoc. Bot. Soc., Edinburgh.*

FOREIGN CORRESPONDENCE.

COLOMBIA.

On coming overland from Popayán to this place (Medellin), I made an expedition to a district which I am sure has never been visited before by any botanists, nor perhaps by any other scientist. Judging from the errors made about this district in the best maps of Colombia, not even the "Comision Corografica de Colombia," to which the late Señor José Triana belonged, can have been there. I refer to a series of rather confusing lateral spurs from the western Cordillera, on the borders of the States of Cauca and Antioquia. From a horticultural point of view, my last excursion might be considered of little importance, for no grand new *Cattleya* or fine new variety of *Odontoglossum* was detected; but from a scientific point of view the result was highly important.

Besides a fair number of new and very interesting species of various orders of plants, with which my herbarium has been enriched, I enlarged my knowledge with a great many facts as to the geography of the country, the geographical distribution of species, and the causes upon which their presence or disappearance depends, &c. I can give only a few instances. Some few years back I was amazed to find *Odontoglossum vexillarium*, Rehb. f., in the districts of the Upper Amazonas, far down in the Eastern Andes of South-Eastern Ecuador, a plant always believed to be restricted to a small area of North-Western Colombia, and although the flowers are not much larger than those of a large-sized Pansy, and very dark-coloured, they offer absolutely no reliable structural characters for the creation of a new species. In a similar manner, I was surprised during this last excursion. Commencing at an elevation of from 2800 to 3400 metres on the high Cordilleras of the northern parts of the Province of Loja, in Southern Ecuador, and extending northward through the whole of Ecuador and Southern Colombia as far as the Páramo de Guanacas, near Popayán. I was always of opinion that at this latter locality the beautiful and brightly-coloured *Oncidium Jamesoni*, Lindl., reached its northern limit. Here, again, several hundred miles further to the north, on the western mountains of Antioquia, I found the plant, and just as typical as the most typical specimen from the slopes of the Pichincha volcano, or the Pululagua, near Quito. This gives a distance, in a direction from north to south, of over 700 miles for the two species mentioned. Many similar instances were observed, but the two alluded to should suffice to suggest a warning to modern species-makers in dealing with plants originating from different localities. The time has gone by when, by such characters as the presence of a few warts in one flower, whose presence in another was overlooked, a *Masdevallia acrochordonia* could be separated from *M. Ephippium*; or when, by half a dozen latin words, often of obscure meaning, a new species was supposed to be described.

Neither time nor health permit me to give here an exhaustive description of the country and its physical conditions. I reserve this for another occasion. To-day I limit myself to the notices of a few new acquisitions among Orchids.

TWO NEW CORYANTHES.

The first of these is a second member of a new group of this genus, with stiff upright flower-spikes—if we accept Dr. Lindley's statement that "all *Coryanthes* necessarily possess pendulous flower-spikes." The first, *Coryanthes Wolfii*, named by me in honour of Professor Dr. Wolf, formerly of Guayaquil, now of Dresden. Dr. Wolf will shortly favour the world with a reliable map of the physical phenomena of Ecuador. In his house I had the pleasure of seeing, examining, and sketching the first flowers of this marvellous plant, although it was known to me many years previously as an Ecuadorean species. It grows very sparingly, mostly on Cacao trees, all over the littoral districts of the Guayas, where it flowers in February and March, when these level lands are mostly inundated. During this season, it is beyond the power of man to penetrate the woods there—a circumstance that accounts for the plant not having been seen before. It produces thick upright flower-spikes 40 to 50 cm. high, with three to six large wonderfully-constructed flowers, which are yellow, mottled, and stained with brownish-red.

The second species, *Coryanthes Mastersiana*, which I dedicate to Dr. Maxwell T. Masters, is of Colombian origin, where it grows on trees or woody lianes, not far above the ground, in dense and exuberantly-developed woods at the lower extremity of the valley of the Cauca at an elevation from 800 to 1100 metres. The plants are large, and very floriferous. The bulbs are subcylindric or narrow-oblong, bent, deeply plaited, from 8 to 12 cm. long, two-leaved. Leaves from 30 to 50 cm. long, 4 to 6 cm. broad, oblong, acuminate, plaited. The flower-spike from 40 to 60 cm. high, stiff, upright, two to three flowered (as far as observed up to now), clothed with three to four membranous, obtuse spatheaceous bracts; those surrounding the base of the ovaries 3 cm. long, 1 cm. broad, cucullate sharp-pointed. Sepals membranous, the dorsal one ovate-acuminate, not much longer than the column; the lateral ones angulate, wing-shaped, cuspidate, 9 to 10 cm. long, 4 to 5 cm. wide, reflexed. Petals oblong-ligulate, blunt-pointed, slightly undulated, 2.5 to 3 cm. long. The lip, connected with the column by a short thin arm at a right angle, consists of a thick, deep, bell-shaped hypochil, which is 2.5 cm. in diameter, 2 cm. deep, and with a smooth limb; a thick fleshy, cymbiform gibbose mesochil, which, on its outside, bears three large tooth-shaped callosities, of which the lower one is the largest, and hidden in the hood of the hypochil; and a large bell-shaped epichil, which has a two-lobed margin, and a fleshy deep tridentate apex. The column is 3 cm. long, bent back at a right angle near the apex, thus forming a broad, breast-like, slightly-keeled projection, on either side of which runs a narrow membranous wing. The border of the anther-bed runs up on the side of the stigmatic cavity in two sharp-pointed strongly bent horns. On either side, at the base of the column, is a long fleshy semicircular arm, which stands in a horizontal ring-like manner over the isthmus of the lip. The colour cannot be given with certainty, as the only flowers found were already slightly faded; it appears to be yellow, stained with red, the hypochil of the lip deep glowing red.

Complete botanical material of both *Coryanthes Wolfii* and *C. Mastersiana* will be deposited next year in the herbarium of the British Museum, South Kensington. A few living plants have been sent to the Liverpool Horticultural Company at Garston, near Liverpool.

There are but few plants in the entire vegetable kingdom which are more interesting, and which afford such a varied amount of material for the student of vegetable physiology. Everything relating to *Coryanthes* is curious, and arrests the attention of the observer, even its spontaneous mode

of growth. Wherever a larger mass is found in the tropical forests of South America, numerous ants surround its root-masses. This ant is a small-bodied species of *Myrmica*, possessed of a strong aromatic smell, and which bites very severely, so that it requires some courage to meddle with the plant. These ants seem to be indispensable to the well-being of the plant, for if these animals do not collect around the roots, it appears not to do well. Even in a cultivated state, as well as in the house of my friend, Dr. Wolf, at Guaysquil, as in my own country residence, I have observed the same facts. But nothing surpasses the flowers. The very peculiar organisation of the whole flower, the position each organ assumes in relation to another the secretion of a sweetish fluid always retained in great quantity in the bucket, all is highly interesting, and invites both to study and investigation.

Several other new Orchids of interest were discovered on this expedition, but I must reserve the notice of them for some other occasion. I will only mention here a *Pescatorea* with fine large flowers; but, alas! a very unpleasant smell. The intensity of the latter suggested in the first instance the name of Mephisto. It is the first member of this sub-genus of *Zygopetalum* that has this peculiarity. All the others have either fine fragrant flowers, or they are scentless. The present species is also interesting on account of its growth in an inter-Andean locality the first instance known to me. *F. C. Lehmann, Popayán.*

THE POISON OAKS.

In your issue of September 12, a correspondent asks about *Rhus toxicodendron*. The plant is native here, and is found in great abundance on the edges of most of our native woodland. Many people are poisoned, not only by handling it, but by its exhalations, some persons being much more sensitive to the poison than others, as some can handle it with impunity. The point I wish to make is, how to be sure you are dealing with the right plant. So far as I know, no poison Vine in this country has a leaf that is more than three-parted; all four-parted or five-parted seem to be harmless. We have four or five varieties of the *Rhus* family, and I believe only two are poisonous; and these two have three-parted leaves. Here they are known as "poison Ivy," "poison Oak," "poison Sumac," "poison Vine," &c. The *Rhus toxicodendron* is the most virulent. The disease it causes is erysipelas pure and simple, and should be treated as such. A common and very efficient remedy when the poison is first seen on the skin, is a strong lather of common potash soap, made strong and applied with a shaving brush, layer on layer until the part affected is thoroughly coated. Keep the air out with that, and keep the coating moist, and in twenty-four hours, as a rule, the trouble will disappear. *D. O. C., Chicago, U.S.A.*

THE CULTURE OF ALPINE PLANTS.

(Continued from p. 455.)

Is a book which I am studying, and which may well be recommended to all who grow alpine plants, Herr Max Kolb, the Director of the Botanical Garden at Munich, writes thus:—"It has been proved that the greater number of Primulas bloom better when not exposed to full sun." And a little lower down in the same page, he writes:—"They should face due east, so that the first rays of the sun may fall upon them, and the plants be protected towards midday by some kind of alpine shrub." I submit that stone pockets do away with the necessity for alpine shrubs, and are, indeed, far better for the purpose in view; and I think I am in line with Herr Kolb's injunctions about this matter.

Nor are these pockets of use merely for the protection which they afford from the sun. Plants love to nestle against a stone, to press it hard, and to grow as close to it as it is possible for them to do. I have in my mind's eye now, two or three not very difficult alpine, such as *Saxifraga sancta*, *S. diapen-*

sioides, *S. Burseriana*, and *S. casia major*, which are as happy with me as though they were inhabiting some rocky summit; but in every instance that I speak of, they have been placed in an angle between two stones, and are pressing it hard. They will do elsewhere, it is quite true, but they will not do nearly as well as in a position of this sort, so far as my experience goes. This kind of drawing towards a shelter is by no means peculiar to alpine plants. How often a monthly Rose will hold on in October and November when it finds itself under the cover of a broad and far-reaching eave, or it may be in a recess which two walls of a house at right angles to each other afford! But this simple observation governs the construction of the whole of my rockery. The pockets do give the shelter which plants love so much, and this is all that is asked for. But let me say, it is by no means all that is given. If the above consideration stood alone, it would settle the matter in my eyes; but it does not stand alone. Mr. Boyd said the other day, "I am quite sure that this is the right way for growing alpine plants;" and one reason which he gave for it was the following:—"You cannot water

walls of the pockets, and are proof against the utmost raging of the wind. Let it be remembered before all this is vetoed, and put out of court, that for the most part, we have the pleasure of seeing alpine plants in their own native habitats during the bright season of the year, but it is ever the case that they are left naked and exposed to the keen wintry blasts? Are they not rather most affectionately and carefully covered up? What a deep mantle of snow does so effectually for long months together, my little bit of glass aims at, and also succeeds, more or less in providing—and this is only what Nature would dictate.

Mr. Alfred Bennett has explicitly written, in the four-volume work which he has edited on alpine plants:—"Since we have not in this climate the thick covering of snow which in the higher mountains remains without interruption till late in the spring, this must be replaced by an artificial protection." I do not know what he recommends as being the best expedient for the purpose, but he certainly has arrived at a conclusion which is very much the same as that on which I think so much insistence should be made. I believe, that so far from alpine—I mean, the more trying and difficult sorts—being insensible to cold, they feel it in the highest degree.

To give only one instance in point, which occurs to me on the moment:—I took a glass off *Potentilla nitida atropurpurea* too soon, which had been covered during the winter, and which was doing quite well; an unexpected sharp frost came on the very next night, and it was immediately destroyed. Doubtless it might not have been so sensitive to cold if it had never been covered at all, and very likely a *Potentilla* of this sort would have stood the winter without any protection whatever; but it had enjoyed its shelter for weeks, and the loss of it meant destruction at once. It should also be remembered that it is quite one thing for a little flower to pull through a trying season of frost, and it is another thing for it to do the same thing with ease, and not to have suffered at all. It is this last condition which alpine plants like best by a long way, and which, therefore, I aim at for them.

Let it be remembered that Messrs. Backhouse, who must know a very great deal about this sort of thing, habitually keep a large portion of their stock in frames during the winter months, and it is not exposed to the cold. My glasses are like movable frames, which can be taken away in the spring. *H. E., Ryde.*

(To be continued.)

THE EFFECTS OF GIRDLING A BRANCH OF A FRUIT TREE.

Our illustrations (figs. 63, 61, and 65), show the effect of girdling a part of a tree so that its downward growth and development are checked, and an accumulation of food formed above the tie. The case in question occurred in the garden of Philip Crowley, Esq., a branch of a Jefferson Plum was accidentally girdled in this way, with the result that the fruits produced from the portion above the constriction were very much larger than others on the same tree. Ringing and girdling are very old cultural practices, alluded to in recent times by Mr. Rivers and other cultivators, but withal rarely practised.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

*Gathering, Packing, and Marketing Fruit.**—We are all familiar with the usual instruction in cookery books on how to cook a hare, viz., "First catch your hare," which, if not the most important point, is certainly one indispensable; but having accomplished this, it is desirable to know how to cook it properly and well.

* A paper read by Mr. G. Hammond at the third Conference of the present season, which was held in the Garden Hall, Crystal Palace, Sydenham, on Friday, September 4.

So, perhaps, some will say concerning the subject of this paper, "We want you to tell us how to grow a crop of fruit; anybody can gather it when it is grown." Stay, ye critics, I am not so sure of that. Nay, I go further, and say I am quite sure that comparatively few people know how to gather and pack fruit properly. In a few words, therefore, I will endeavour to tell first how it should not be done, and then also how it should be done.

Perhaps the way which gives least trouble (and this is the way lazy folks look out for) is, to let the fruit hang until ripe (and then to climb the tree, if a large one), and give the branches a good shaking, when nothing will be needed but to pick up the fruit from the ground. Some may feel inclined to laugh at the mention of such a method, but I knew of a case in which this method was adopted with small dessert Pears, ripe and juicy, and from a high tree, with what results I leave you to guess. This is one way of how not to do it. Another way in which it should not be done is suggested by a common expression of "pulling" the fruit, which always seems to me to suggest much too rough usage, both for the fruit to be gathered and for the tree from which it is to be taken. Anyone who has had experience in this matter knows that if you take hold of any kind of fruit, and pull it off anyhow, that you break

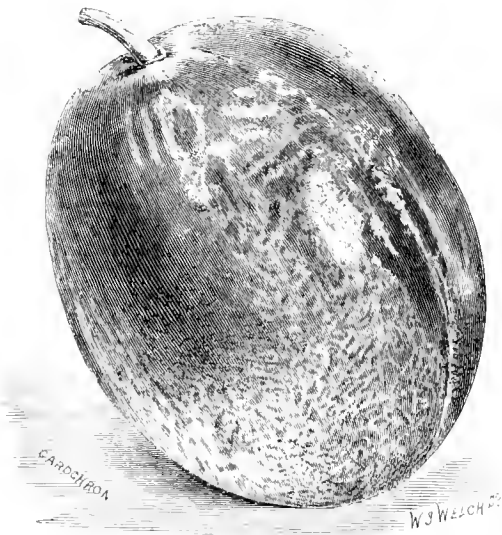


FIG. 63. JEFFERSON PLUM, FROM ABOVE THE CONSTRICTED BRANCH SHOWN IN FIG. 65.

them properly when they are placed on an incline—the water runs off from the rocks." I think this is true, though it had not occurred to me before he so explicitly said it; and I may also add two other benefits which these nearly level pockets afford. I have the strongest belief in a small piece of glass being put over the head of an alpine plant, or at all events of some alpine plants during the winter months. I know that this is an expedient which is very often mocked at by alpine climbers, and also by gardeners. They think it means coddling—it must be uncongential to a plant which has been blown upon by all the winds of heaven, and which has for months looked upwards to the bright blue sky! But is not this going rather too fast, and begging the whole question that is at issue? What alpine plants love dearly is a very equable temperature—great stretches of the same amount of warmth and cold, and what they hate is a drizzle over their heads one day, a bright sun the next, a sharp frost immediately afterwards, and then a glow which seems to say to them, alas! how often is it said too soon, all trouble is over! And I do not know how to "steady" my favourites, those, I mean, about which there is real cause to be anxious—so well, or half so well, as by letting a small bit of glass remain over their heads with the sides open during the trying portion of the year. This can easily be managed in more ways than one; I have wires, which are most effective, and which are bent so ingeniously as to have a good grip of the glass, and also the little panes (which I have cut to measure by the hundred, in London) will lie quite securely against the

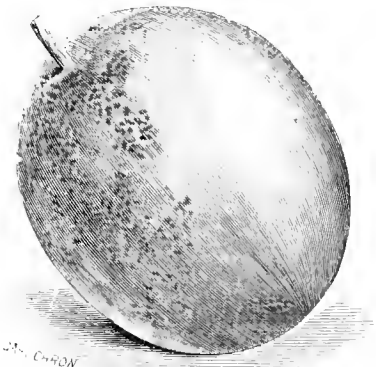


FIG. 61. JEFFERSON PLUM, BELOW THE CONSTRICTED BRANCH SHOWN IN FIG. 65.

some part of the tree with almost every fruit. On examination of a fruit tree it will be observed, that clustered round the present fruit-stalks are numerous fruit-buds, which are next season's fruit in embryo. Now, if by carelessness or ignorance these be destroyed, it is evident that not only has the present crop of fruit been pulled, but with it also a large part of next year's crop as well.

Then, again, when the fruit has been gathered from the tree, it is often allowed to fall from the hand into the basket, thereby causing it to be bruised and unsightly, and of course, to some extent, unsaleable, or at least it looks like what a friend of mine calls "tumble-down Pippins." This should not, and need not, be. As a general principle I may say: Always turn the fruit upwards, putting the thumb against the base of the stalk, when (if the fruit be ready) it will part readily from the tree without breaking a single spur or fruit-bud. This applies especially to Apples and Pears; with Plums it will be generally found that the fruit parts more easily from the stalk than the stalk from the tree, and it is as well in ordinary picking that it should be so, as less damage is done to the tree thereby. Care should be taken in picking Plums not to destroy the beautiful bloom which most kinds have upon them; they should never be touched by hand except to pick them from the tree.

For large trees, I think nothing has yet surpassed the ordinary fruit-gathering ladder—i.e., wide at the bottom, and the usual kind of basket, somewhat smaller at the bottom than the top, with a cross handle and hook attached. For low trees, a pair of steps will be found of very great service. In all cases the ladder should be set as nearly upright as possible, so as to press lightly against the tree, and

keep the basket close to the picker, so that the hand may easily reach the bottom of the basket. The fruit should never be dropped into nor rolled about in the basket, or it will speedily show signs of rough usage. When it is intended to send the fruit direct to market, place it at once into the market sieves from the picker's basket.

Notwithstanding many suggested improvements during the last few years, I think there is nothing so suitable for general use as the ordinary market baskets known as bushels, half-sieves, flats, half-flats, and pecks. These all allow the escape of heat, which is one of the greatest enemies of fruit after it has been gathered. Place the fruit into these carefully, and in doing so it should be properly sorted into large and small, or best and seconds, and of one quality throughout, not small at the bottom and large at the top, which in the end means loss. All packages should have a sheet of paper (blue tissue is generally used) over the top, and may be covered with Fern or straw in any way most convenient, and is then ready to be despatched to the market or elsewhere. In the matter of packing

I need not say much upon the marketing of fruit, but a few hints may be useful. As most of the fruit grown is consigned to salesmen, I would say: Try and discover someone who bears the character of honest dealing, and trust him. Do not dodge about from one to another, which often has led to getting "out of the frying-pan into the fire." Let the fruit be honestly packed, giving good measure, and customers soon discover this, and inquire for the goods, with the result that full market price is obtained with little difficulty. I find it to be a good plan, as a rule, to have a continuous supply of the same kind of fruit. In sending, say, 100 bushels of Apples of one kind to market, I would not send them all at once; but commence, say, with 15 to 20 bushels, increasing the quantity as the customers seemed to appreciate them. On the other hand, do not send a small quantity of a large number of sorts, which is very bewildering to the salesman, who finds such consignments a great nuisance.

Lastly, let all fruit be in marketable condition when sent, or it will probably be left for days or weeks before finding a purchaser, and then only at a

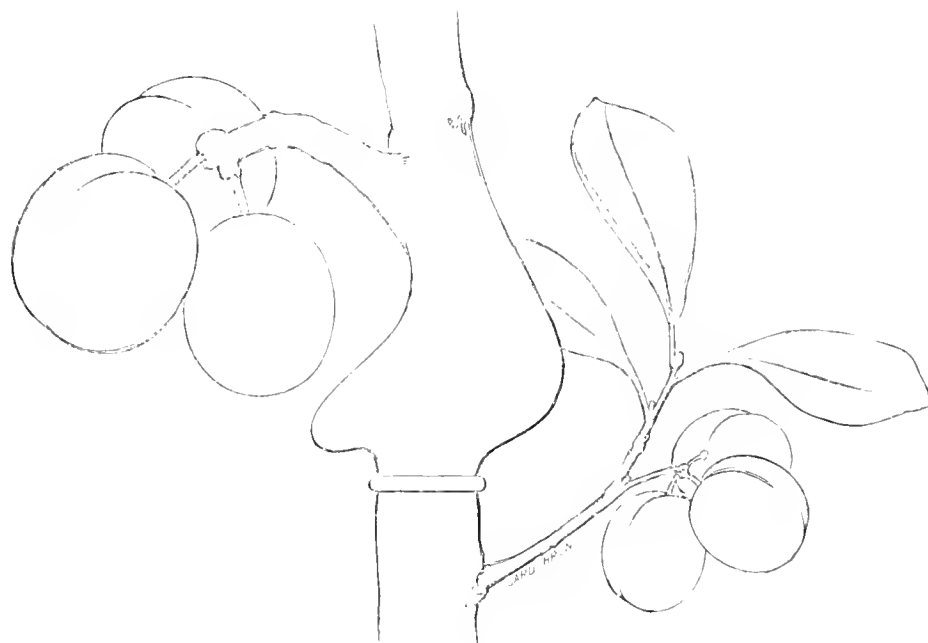


FIG. 65.—GIRDLED BRANCH OF JEFFERSON PLUM, SHOWING THE EFFECT OF CONSTRICTION (SEE FIGS. 63 AND 64).

fruit we have much to learn from our neighbours across the channel, who do more in grading the fruit and putting it into small baskets or boxes than we do. As a rule, it may be said that the smaller the packages into which the best fruits are placed, the better, especially in a scarce season.

As to the time of picking, everything depends upon what is intended to be done with the fruit when gathered. If it is to be sent direct to market, in the case of Apples they may be gathered as soon as they have attained a saleable size, and will part fairly easily from the tree; but if they are to be stored for winter use, they must be allowed to hang until fully developed, and, if possible, until they are well ripened, and the pips turned brown. Fruit to be stored should only be picked when quite dry, and must also be handled with great care; but if for immediate use, it is not necessary to be quite so particular. Plums for ordinary kitchen use, may be gathered when only slightly coloured and still hard, but if of the best dessert kinds, they must be allowed to ripen first. Most Pears require to be kept for a time after being gathered, to become ripe and fit for use. Care must be taken not to gather too early, which causes them to shrivel; nor to let them hang so long as to have most of the crop blown down by a moderate wind,

low price, alike unsatisfactory to the salesman and the grower. I have this year seen Damsons upon the market while still quite green, and absolutely unsaleable. How can salesmen be reasonably expected to give satisfaction under such circumstances? One great advantage of the fruit from abroad is this—"that when placed upon the market it is fit for immediate use," which seems to suit the circumstances of most buyers, who say, "We do not want fruit to keep, we want it to sell." We must, therefore, try and supply not only the article they want, but supply it also in the condition in which they require it.

FLORISTS' FLOWERS.

CHANGEABLENESS IN THE CHRYSANTHEMUM.

In his interesting and instructive *Short History of the Chrysanthemum*, Mr. C. Harman Payne has a chapter on sports, and he there informs us that from what can be learned, "nearly all the early imported varieties from China were much more inclined to sport than the majority of those raised from seed; the old purple, the expanded light purple, the quilled

light purple, the curled lilac, and the buff seem to have been those most sportive in the olden time." He tells us that the first sport noticed and fixed in this country originated from the old purple, the plant first introduced in 1790, in the garden of the Bishop of London at Fulham. Cuttings were at once taken of the sport, which was called *The Changeable White*; in very rare cases something more than a change of colour occurs, there is a change of shape, and this characteristic is maintained when the sport is propagated.

The cause of sportiveness in some flowers is one of those secrets the vegetable kingdom keeps in a large measure to itself: it is hidden away in the silent mystery of the flower's nature. Mr. Gordon, when superintendent of the ornamental department in the Horticultural Society's Garden at Chiswick, made a statement to the effect that "the mutability of colours in the *Chrysanthemum* flower is of old date, and was observed to occur many years ago, when it was, no doubt, more common than it is now, and probably was owing to some differences caused by the change of climate on the plants being first introduced, for the more common cases happened in plants first propagated from the original stock shortly after they were imported from China." This was written half a century ago, and had Mr. Gordon been living in our day, and could have witnessed the frequent occurrence of sports from seedling plants, and also from varieties that were obtained as sports from others, he would doubtless have modified his opinion. Mr. Sabine, in a paper read before the Horticultural Society of London so far back as 1820, stated that "the old changeable white, or Lee's white, as it was sometimes called, was obtained from a sport of the old quilled purple, and that the variations in its colours were great. Sometimes the florets were pure white, especially in cold seasons; sometimes the backs of the inner florets and the whole of the outer ones were pale purple. Sometimes each floret was striped white and purple, and on which account it has been called the *magpie Chrysanthemum*; while, in a warm situation, and in a fine autumn, the centre florets would become purple, and the outer ones white—and at other times, though but rarely, one side of the whole flower would be purple, and the remainder white—and in a very warm season the flowers would become entirely deep purple like the original." Probably some of these changes were not really sports, but simply changes caused through the varying age of the flower. It is well known that remarkable changes occur, and not infrequently a flower of a well-known variety is sent as representing a sport from it, whereas it is simply a matter of development and age.

Queen of England, a popular incurved flower sent out by John Salter in 1847, has proved most prolific of sports. I think I am correct in stating, that it has thrown at least six, *viz.*, *Alfred Salter*, *Empress of India*, *Emily Dale*, *Golden Queen of England*, *Bronze Queen*, and *John Doughty*. *Emily Dale*, and *Golden Queen of England*, if not quite the same in general characteristics, come so near to each other, that it is not expedient to exhibit both in the same stand; and *John Lambert* is of much the same character, and is a sport from *Lord Alcester*, which in its turn originated as a sport from *Empress of India*, a white sport from the rosy-blush *Queen of England*; so in addition to the sports which broke direct from it, some of these have sported in their turn. *John Doughty* is considered the best of this colour. *Alfred Salter* stands alone, and has not, so far as I am aware, sported in its turn. In addition to *Lord Alcester*, *Empress of India* threw another sport, known as *Golden Empress*. *Bronze Queen of England* and *John Doughty* also approach very near to each other, and cannot safely be exhibited on the same stand.

Next to *Queen of England*, the variety most prolific of sports appears to be *Princess of Wales*, a rosy-blush incurved variety, which has been in cultivation nearly thirty years. Its first sport was *Mrs. Heale* a white variety—this occurred in 1867; then, in 1888,

Miss Violet Tomlin occurred, a deservedly favourite variety, of a bright violet-purple colour when caught at its best, but becoming paler with age. The following year appeared Mrs. S. Coleman, bright rose, shaded with yellow in the centre, and like the foregoing, a flower of fine quality when in good condition; Mrs. Heale has sported in its turn. Princess of Teck appears also to have thrown three sports, viz., Hero of Stoke Newington, rosy-pink; Lord Eversley, pure white; and about the same time, Mrs. Norman Davis, rich golden-yellow, sometimes shaded with bronze in the centre.

(Of our leading incurved *Chrysanthemums*, something like thirty have originated as sports, and among them we find not a few of the most popular exhibition varieties. *R. D.*)

CYCLAMENS AT ISLEWORTH.

Cyclamen, that is *Cyclamen persicum* and its innumerable varieties, are now beginning to lend a cheerful aspect to the shelves and stages of the cool greenhouse, by means of their large and attractive flowers, the colour of which varies from the purest white to the deepest purple. In the nursery of Mr. J. Taylor, Twickenham Road, Isleworth, a few thousands of plants are grown, and present ample evidence of successful cultivation, if one may judge by the sturdy habit of the plants, their fine foliage, and large blooms. The seeds are sown at different periods, so as to ensure a succession of flowers during the winter months. At the present time even, arrangements are being made in regard to next season. Numerous seedlings are being shifted from the store pots into tubs, from which in due course, they will again be removed into larger pots according to their vigour, and will be ready to produce flowers early next season. As a rule, old corms are not kept, it being found that the best blooms are generally to be obtained from the young ones. Mr. Taylor's houses are low, and although somewhat detrimental to the headgear of a tall visitor, are well adapted for the culture of *Cyclamen*, inasmuch as the plants being tolerably near to the glass, are enabled to obtain an abundance of light, which is most beneficial to them. Owing to the very wet season of this year, the only danger to be apprehended is damping, but this may in a measure be successfully overcome by giving plenty of air (without causing draughts) from the top and side lights. *Mitza.*

PLANT NOTES.

NEW HYBRIDS OF STREPTOCARPUS.

The new race of hybrids of *Streptocarpus*, which originated at Kew, and have been hybridised and selected by Messrs. Veitch, will probably become as popular as the Chinese *Primula*. They are easily grown, and succeed well in an intermediate-house, greenhouse, or conservatory. Seed sown in February or March will produce plants which will flower with ordinary culture from July to November. From a packet of seed sown in March, I have had a fine lot of bloom since the end of August, and to all appearance the plants will go on flowering till November. There are many shades of colour, ranging from pure white, with purple and blue stripes in the throat, to pale lilac, deep lilac, lavender, mauve, violet, and rosy-purple. The first year the plants usually show from two to five blooms on a stem, and from fifteen to twenty-five spikes, and as the plants get older and stronger the flowers are much more freely produced, fifty to seventy flowers in various stages of development being of frequent occurrence on a single plant.

Now that the *Streptocarpus* has been taken in hand, we may expect before long to have the most telling colours for decoration in separate strains, as in the case of the Chinese *Primula*. A good bright crimson would be an acquisition. White, blue, purple, and crimson *Streptocarpus* will be a boon to gardeners for the decoration of the conservatory or greenhouse during the dull months of September and October, and the Messrs. Veitch are to be congratulated on introducing to the gardening world such a useful decorative race of plants as the new hybrids of *Streptocarpus* originated by Mr. Watson. "*Sans Peur.*"

THE BULB GARDEN.

NARCISSUS ITALICUS.

The bulbs of *Narcissus italicus*, flowers of which I send for your inspection, came here from Italy three years ago, and have been grown in the open border (south), in front of a plant-stove. Last year it bloomed here (Trinity College, Dublin) for the first time on October 10, only bearing one scape; but this year there are several other scapes to follow. It is very like *N. papyraceus* or "Paper-white," but as you will see, the cup is pale primrose-yellow, and not pure-white. We have a very similar plant from Hyères, but it will not bloom until November or December in the same position.

We have now here a collection of wild collected *Narcissi*, which will flower from this date until the middle of June, or a period of at least eight months of the year.

N. italicus is a variable variety, but these early-blooming forms would prove preferable to "Double Roman" and "Paper-white," whenever early flowers of *Narcissi* are desired. *F. W. Burbidge, October 5.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

THE CATTLEYA-HOUSE.—*Cattleya Bowringiana*, a beautiful Orchid, is now opening its first flowers. It is a plant that is free in growth and very floriferous, and may be grown either in a basket or pot in a compost consisting of three parts brown fibrous peat and one of sphagnum moss. When growing, the plant requires to be kept rather moist, and at all times in rather more heat than most other *Cattleyas* need. *Laelia Perrinii*, now in flower, is a very beautiful Orchid for the autumn. As this species of *Laelia* displays so many varieties of comparative worthlessness from a gardener's point of view, the present is a good time at which to select plants from the growers. The typical *C. Hardyana*, truly a very fine *Cattleya*, is also in flower, as it is regularly with us at this season. The true autumn-flowering *C. labiata* and *C. Warocqueana* are flowering side by side here, and the flowers of the latter have the flower segments rather narrow, thus differing in those respects from *C. labiata*. It is, however, a very useful addition to the autumn-flowering *Cattleyas*, and seems to be a plant very easy to cultivate. Great care must now be taken in damping the *Cattleya*-house, the lack of sunshine during the summer and autumn having left the growths soft and immature, and a gentle warmth in the hotwater pipes, and as free a circulation of air as can be afforded with safety, will assist to ripen the growths. "Spot," which at one time was found more or less prevalent in collections, has now almost disappeared, and some plants, which were considered "miffy" then, are now grown without trouble. This change for the better has been brought about by freer ventilation, and by that alone. It is a penny wise and pound foolish policy to shut up the house close merely to save fuel, although there are times when it becomes necessary to shut up all the ventilators—when fumigating, for instance, but they should be opened as soon as the smoke has dispersed. If this is done, the objectionable smell of tobacco-smoke in the house is avoided.

Oncoglossum coronarium is now in flower, and of our two plants one has three and the other two spikes of flowers. These plants are grown in peat and sphagnum moss in boat-shaped baskets, and for the last four years they have been hung up close to the roof in the Masdevallia-house. Has any reader ever seen more than three spikes on any one plant of *O. coronarium*? We bloom every year *O. brevifolium* and *O. chiriguense* under the same conditions. I should perhaps mention that these plants have never been allowed to become dry at the root. *A. G. Catt, Parkfield, Worcester.*

THE FLOWER GARDEN.

PREPARING THE GROUND, AND PLANTING ROSES.—The Rose, as of yore, retains her own in public

esteem against all new comers, as with each succeeding year additional interest is evinced in its culture, and fresh recruits admitted to her ranks.

SOIL AND SITUATION.—The soil most suitable for Rose-growing is a rich deep loam, inclining to be heavy, and resting on gravel, and if the situation slope to the south-east or south-west all the better. Should the natural soil be of a light description, some clay should be well mixed with it. On the other hand, should it be unduly stiff leaf-soil, then road-sand, coal-ashes, burnt earth, and manure should be incorporated whilst trenching it. I may remark that good wheat-land will produce good Roses—their cultural requirements being attended to.

PLANTING.—Although Roses may be planted any time from the beginning of November to the end of February (weather permitting), the sooner the work is done in November the better. If the Roses are to be planted in rows by the sides of walks, holes about 18 inches deep and wide should be dug out, putting if necessary a layer a few inches deep of hard materials as drainage. If the excavated soil is unsuitable, replace it with a compost consisting of three-parts good loam, and one of rotted manure. This being well mixed, plant the Rose bushes, trees, or standards, in the centre of each hole, and at about the same depth in the soil as they stood before, treading the soil well about them. Cut off in planting any damaged or unduly long roots with a knife, and this done, put a stout stake at the further side of each plant for its support, securing them with tarred string, and afterwards laying over the roots a thin mulch of half-rotted manure. Choose a fine day for planting, and rather than plant when the ground is very wet, lay in the plant, and wait for fine weather. Roses growing in beds, as well as those freshly planted therein, should now have a surface-dressing of manure.

ROSES ON THEIR OWN ROOTS.—For planting in beds, I prefer plants on their own roots, giving them a space of from 3 to 4 feet between good strong plants, pegging the shoots out over the beds the end of the following March, or early in April, according as the season and situation are early or late. Thus treated, the shoots send out flower-bearing growths nearly over their entire length, and the suckers, which annually push from the roots, are duly pegged down between the older shoots, which ultimately, *i.e.*, when the allotted space has been properly covered, they will replace, the old growths being cut out each year as soon as the bloom is over. In this way, fresh vigour, and consequential floriferousness, and long life are yearly imparted to the plants.

VARIETIES.—Although the varieties of the Rose are legion, new ones crop up from time to time to swell the already long list, however, the following brief selections include some of the best of the respective kinds, and may be increased or decreased according to circumstances. [A list of varieties will be given in our next. Ed.] *H. W. Ward, Longford Castle, Salisbury.*

THE HARDY FRUIT GARDEN.

TREE-LIFTING AND ROOT-PRUNING—These operations, so essential to success in fruit-growing, should now be commenced, and continued during fine weather until stopped by frost. Peaches and Nectarines are trees usually taken first, and in their case, lifting is preferable to merely cutting back the stronger roots. In doing it, dig out a deep trench at 4 to 6 feet from the stem, according to the stretch of the branches, and then, with a digging-fork, loosen the soil from the roots, preserving all of them as far as possible; and after this is done, and the tree is lifted bodily, make the drainage good, and refill the holes with a partly fresh compost, consisting of fresh loam if procurable, burnt earth, old mortar, and a small quantity of crushed bones, and make it firm by treading before replanting. The roots—that is, the strongest and longest—should be shortened a little, and badly-bruised roots cut off above the injured part, and all of them spread out at various depths, and covered up with the compost. Some temporary loose fastenings will be required to keep the branches in place; and over the roots place a mulch of stable-dung several inches thick.

APRICOTS growing with too much vigour may be lifted and replanted like the first-named fruits, but giving them rather more depth of soil, and plenty of lime rubble. Manure is not needed, except where the soil is of poor quality, when a mild kind, like a Mushroom-bed, or old-root-bed materials, may be made use of.

PEARS AND APPLES.—Root-pruning, if needed by any of the trees, may be undertaken as soon as the fruit is gathered, and in the case of large old trees, it should be done in part—only at one time. All descending roots must be severed or bent upwards, for if any of these are left untouched, the work will be spoiled. Make use of some fresh soil, and make firm by treading. If this operation is carried out with thoroughness, finer and better-coloured fruit will result. All fruits, with the exception of the latest ripening Pears, should now be stored. Fruit trees required to form a reserve, or for filling walls and fences, should be ordered from the nursery. If the trees should arrive with the roots much dried, steep them overhead in water for a few hours, and lay them in on single lines in wet soil, if they must be left unplanted for a time. *H. Markham, Mercworth Castle, Maidstone.*

THE KITCHEN GARDEN.

FRENCH BEANS.—Those in pots and frames now coming into bloom should have a rather higher temperature afforded them, and all the sowings for succession now standing in cool frames should be removed to heated pits or houses, and placed near the glass. A temperature of 65° at night should be maintained and afforded when the weather is mild, but carefully avoiding cold draughts. Occasional syringings both before and after flowering will tend to keep them clean, and doses of warm liquid manure should be afforded to encourage growth, but only when the soil has got filled with roots.

RHUBARB.—The leaves remain long on these plants this year, and in taking up roots for forcing, none with unripened crowns should be chosen. It will assist them if a trench be cut round the stools; and these be taken up ten days afterwards. Place the roots close together on a hot bed of tree-leaves, filling in between them with light soil or leaf-mould, and syringe the bed daily with tepid water. By maintaining a bottom-heat of 70° to 75°, and an atmospheric warmth of 55°, Rhubarb may be well grown in an ordinary cellar, but it cannot be forced in such places. Rhubarb should be lifted at intervals of three or four weeks, so as to maintain a regular supply of the vegetable, the roots being laid aside in a dry cool place for a period of ten days before being put into the forcing-house.

ASPARAGUS.—The beds should be hand-weeded, and all the stems of Asparagus with seeds on them removed from the beds before the seeds fall, otherwise much trouble will be incurred next year in destroying the seedlings. Asparagus roots may now be lifted and forced, and of all kinds of forced vegetables, this one is the most accommodating. A good way of forcing it is to make a mild hotbed of stable litter and fresh tree leaves, of sufficient size to receive a two or three-light frame, the bed being made 3 feet longer and wider than the frame that will be put on it. Put the material firmly together, so as to secure a lasting and regular warmth, and prevent unequal subsidence of the frame. If the warmth is likely to exceed 80°, a layer of turves should first be placed over the materials, and then a layer of mould and leaf-soil, mixed, about 4 inches thick. Lift the plants with all the soil that will adhere to them, when the bed is quite ready for them, and plant without exposing the roots to the damp influences of the air. Place them close together on the bed, and fill the spaces with light soil, covering the crowns 6 inches deep. Forced Asparagus is most liked when it is green, as when bleached it is stringy, and but little of it is eatable. As soon as the shoots push forth, afford all the light possible, and a fair amount of air when the weather is mild.

GENERAL WORK.—remove the remains of crops, and mix them with lime, soil, and garden rubbish. Turn manure heaps, and manure vacant quarters needing it, and get them ready for digging or trenching. Ground turned up at this season of the year is best left in a rough state, and stiff soils should be ridged when digging them. Remove dead leaves from Brussels Sprouts, Broccoli, &c. *C. J. Waite, Glenhurst, Esher.*

FRUITS UNDER GLASS.

EARLY VINES.—The wood of all Vines should now be thoroughly ripe, if forcing is to commence next month; and not only should the shoots be mature, but the foliage decaying or falling. As previously advised, pot Vines should now be in the

open air, at the foot of a sunny wall, the canes being fastened to prevent their twisting. The earliest of the planted-out Vines should be pruned without delay, the loose parts of the bark removed (not scraped with a knife), and dressed with some kind of mixture to destroy insects. Vines in pots, &c., should have the loose soil removed, refilling the space with a rich compost. Let the drainage be well looked to, giving more space for the roots to go through into the plunging materials. The borders in the early vinery should be similarly top-dressed with loam which has been thrown up, with layers of manure at every 6 inches; some bone-meal or Thomson's Vine Manure may also be added to the loam. Young Vines which have been grown in pots for planting or to be cut back next season may be placed against a sunny wall to ripen, if required early next season, some spent Mushroom-bed manure being spread over the roots; or they may be plunged in stable litter. Before starting any Vines in pots, thoroughly cleanse the house in which they are to grow, and, if it can be done, paint the woodwork, than which nothing is better for the destruction of mealy-bug, &c. Materials in which to plunge the pots should be placed in a heap, and turned over frequently till it is in a sweet condition for use.

SUCCESSION-HOUSES, as fast as they are cleared, should be abundantly ventilated night and day; and if doubts exist as to the ripeness of the wood, artificial warmth may be applied. Shorten the shoots of the Vines if they are crowded, and if the borders are unfortunately outside, get them covered with materials which will exclude snow and rain. Vines whose roots are in a bad condition may be lifted, finishing the job this month, for I do not advise the lifting of Vines later than October. In houses where fruit is hanging, much attention will be necessary from this date, going over all the bunches at least once a week, and removing decaying berries, remembering that one bad berry will contaminate three or four others in its neighbourhood. Fire-heat must always be used in small amounts in the day-time to keep damp in check; freely airing the vinery in fine weather. Houses in which Grapes must hang some time longer should not have plants in pots put in them, and everything that breeds dampness should be kept at a distance. Cover the borders to throw off moisture—we use corrugated zinc for the purpose—it is light and easily transported. First we give a thick covering of dry leaves, and then put the zinc cover on the top of the leaves. Care is taken to give the covering a sharp slope to the front of the border. It is well at this date to allow free circulation of air under the covering. *G. Wythes, Sun House, Brentford.*

THE APIARY.

PREPARATIONS FOR WINTER.—Colder weather, with frosts, will soon be upon us, and nothing that requires attention in the apiary should be deferred. Any requeening that may be necessary must be done before the close of the month. Queens will not be obtainable after that time, as owing to their liability to get chilled, they cannot be sent by means of the post with safety. Feeding should have been completed some time ago, but if this has been neglected, it is essential, if syrup is used, that it should be given at once at a temperature of about 100°, and as rapidly as possible. Stocks that are only a few pounds short, it will be better to provide with candy, which can be run into cardboard or wooden boxes to any required weight. It is not a bad plan to place about a pound of candy over the feed-hole of every stock, even if they have sufficient stores, for as soon as the bees take it, they provide themselves with winter passages. Any uniting that is necessary should be done now, and it is better to dust each lot with flour beforehand than to sprinkle with scented syrup. Hive-roofs should be looked to, and any that require making water-tight should be puttied up and painted whilst the weather is still favourable. Quilts, in the shape of several thicknesses of woollen carpet or flannel, must be provided for covering each stock, and if American-cloth comes next the frames, the entrance should be left open all the winter to the extent of 6 inches at least, unless an air-space is provided beneath the frames, when it may be almost closed. If porous quilts are used, the entrance may be contracted to half an inch. Care must be taken to prevent mice from obtaining ingress, as many a stock has been lost from this cause when it has been least suspected. Winter passages can be provided by laying two pieces of wood, about half-an-inch in diameter, on the tops of the frames, underneath the quilt; or a

piece of stout Bamboo, cut in halves, would answer the purpose perhaps better, placed hollow-side down.

FOUL BROOD.—Naphthaline and Naphthol Beta being now the accepted remedies for this disease, it is advisable to use one or both preparations as a preventive in districts where it is known to exist. Pieces of the former, about the size of a nut, can be slipped between the combs, so that they drop on to the floor-board there, taking several weeks to evaporate, whilst the latter is used in place of the old remedy—salicylic acid—for medicating syrup or candy. It requires to be dissolved in alcohol before it is used. Both the remedies can be obtained at a cheap rate, and of the proper strength, with full directions for use, at the office of the *British Bee Journal, Expert.*

PLANTS AND THEIR CULTURE.

THE PLANT STOVES.—The temperature of the warm-r houses will now require to be lowered, and for the present the warmth may range from 65° to 70° at night, rising 10° on cloudy days, and to 85° with sun-heat. Let all the ventilators be closed early in the afternoon, damping at the time of shutting up, the walls, stages, and paths. Shading of all kinds may now for the future be dispensed with, a fine dry day being chosen to take them down. Any inmates of the warm house which may have been employed for furnishing other structures, will be the better for being brought into their winter quarters. The present is a suitable time for the re-arranging of the plants in the stove, clearing the glass of con-ferva and dust, so that there will be no avoidable loss of light during winter, and when re-arranging the plants, care should be taken to place each subject in the position most suitable for it, at the same time having an eye to effect.

FERNS: THEIR TREATMENT DURING THE WINTER.—Those beautiful and interesting plants, the filmy Ferns, delight in a comparatively cool and shady situation, and the case or frame in which they are grown should be placed where there are no cold draughts, and where the sun's rays do not reach them. In such positions, the temperature is usually of a uniform character, both in summer and winter, which is one of the secrets of their successful cultivation. During winter, special attention is needed in the matter of atmospheric moisture, so that no excess in this respect shall occur. Excessive moisture at this season is provocative of the growth of a species of mould fungus, which is very destructive to the plants.

The general collections of Ferns will have completed their growth, and the temperature of the Ferneries should be lowered. The greenhouse kinds, as *Adiantum Williamsii*, *gracillimum*, *assimile*, *cristatum*—the last-named is a crested form of *A. assimile*, and has a very graceful appearance—*Asplenium falcatum*, and *Doodia aspera multifida*, the last is destined to become a great favourite with gardeners, on account of its dwarf habit, nicely arched fronds, the young ones pink tinted; these will winter best in a temperature of 45° or 50° by night. No higher temperature should be afforded greenhouse Ferns, as it has a weakening effect on them, and in some cases encourage the spread of insects.

The warm house or stove species of Ferns should be kept in a temperature from 55° to 60° during the winter, and during severe frost it will be advisable to allow the temperature to fall 5° lower, and make use of a covering over the roof rather than keep the hot-water pipes very hot during the night. The Ferns will require much less water at the roots from now onwards, but care must be taken not to let them get so dry as to cause injury. Atmospheric moisture must also be lessened. In many gardens no structure is entirely devoted to the stove species, and the plants must be grown with the rest of the stove plants, and where the temperature has to be kept rather too high for them. Where such arrangements exist, it is advisable to place the Ferns at the cooler part of the stove.

Cheilanthes chlorophylla, *C. hirta* *Ellisiana*, and *Gymnogramma elegantissima* are very useful plants, and admirably adapted for decorative purposes, hanging in baskets, &c. *Microlepia hirta cristata* and *Pteris aspericaulis* should be kept in the dryer part of the house, as both are impatient of damp. Any Ferns infested with scale or thrips should be cleaned. The fronds being now in a hard state, are not readily injured by the use of insecticides. All kinds of fertilisers should now be dispensed with. *R. Milner, Penrice Castle, Swansea.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, Oct. 27. Royal Horticultural Society, all Committees; and Lecture by H. Veitch, Esq., on "Autumn Tints."

SALES.

MONDAY, Oct. 26. Dutch Bulbs at Protheroe & Morris' Rooms
Nursery Stock at Thomson's Nursery, Wimbledon, by Protheroe & Morris (2 days)
Nursery Stock at Plaistow, Essex, by Protheroe & Morris
Dutch Bulbs at Stevens' Rooms

TUESDAY, Oct. 27. Great clearance of Fruit Trees, Roses, &c. at the American Nurseries, Leytonstone, by Protheroe & Morris
Dutch Bulbs at Protheroe & Morris' Rooms
Clearance of Nursery Stock at the Mile Ash Nurseries, Derby, by Protheroe & Morris
Dutch Bulbs at Stevens' Rooms

WEDNESDAY, Oct. 28. Great clearance of Nursery Stock at Churchfield Nursery, Chesham, by Protheroe & Morris (2 days)
Clearance of the First portion of Nursery Stock at the Sea View Nurseries, Havant, by Protheroe & Morris (2 days)
Plants and Bulbs at Protheroe & Morris' Rooms
Orchids of Mr. C. Van Trop at East Dulwich by Protheroe & Morris
Dutch Bulbs at Stevens' Rooms

THURSDAY, Oct. 29. Dutch Bulbs at Protheroe & Morris' Rooms

FRIDAY, Oct. 30. Orchids at Protheroe & Morris' Rooms
Clearance of Nursery Stock at Bantstead by Protheroe & Morris

SATURDAY, Oct. 31. Dutch Bulbs at Protheroe & Morris' Rooms
Dutch Bulbs at Stevens' Rooms

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—47°.

ONE circumstance that depresses the soul of the journalist arises from the fact, that however fully he may record the results of experiments, however much he may, as he thinks, offer demonstrative proof, even from his own experience, of the desirability of making further trials of this or that procedure, little heed is paid to his admonitions by his readers. We cannot say this of the experiments carried out on so large a scale by Messrs. SUTTON in the case of the employment of sulphate of copper as a remedy against the Potato disease. We have recorded from time to time, and given pictorial illustrations showing in brief the results obtained in France, and the Royal Agricultural Society has called the attention of its members to the desirability of instituting experiments for themselves. Acting on this suggestion, Messrs. SUTTON have instituted, on a scale few persons could emulate, a trial, the results of which, on account of its magnitude, we are bound to give

respectful attention, if not unconditional acceptance. Messrs. SUTTON recently invited a number of representative cultivators and publicists to view the results of their experiments, and this is what they told them:—

"As we annually plant, for trial, many hundreds of samples taken from the bulks with which we deal during the season, as well as new seedlings not in commerce, we this year decided to divide each trial into two equal portions, dressing one-half with the 'Bouillie Bordelaise,' and leaving the other half undressed. The plots, or trials, thus brought under treatment reached a total of 810, of which 278 were separate varieties.

"In the annexed table will be found a complete list of the weights of each half-row, dressed and undressed, showing the loss, or gain, after treatment, and the total loss, or gain, of each separate variety. These results speak for themselves.

"A brief glance at the table, however, will show that in the case of all the earlier sorts of Potatos, which had matured their crop before the disease set in, there is a very decided loss resulting from the dressing. As the first dressing of the 'Bouillie Bordelaise' was applied on June 27, when these Potatos were in vigorous growth, this unsatisfactory result would seem to indicate that the Bouillie is not of any avail as a fertiliser, whatever the effect of the applications might have been in preventing the disease had it appeared as early as is sometimes the case.

"The instances where the dressing seems to have produced the greatest benefit are on such varieties as 'Regents,' 'Victoria,' 'Woodstock Kidney,' and a few others, which are known to be so liable to disease as to be seldom planted.

"It is satisfactory to find, that in the new group of disease-resisting Potatos, represented by 'Sutton's Magnum Bonum,' and 'Sutton's Abundance,' the expense and trouble involved in the application of the dressing is not warranted by the results obtained. Out of 34 rows of 'Magnum Bonum' only 2 showed any gain, 3 were unaffected, whilst 29 were injured by the dressing; the result of the 34 trials showing a total weight of 5 cwt. 2 qr. 24 lb. for the dressed rows, and 7 cwt. 1 qr. 25 lb. for the undressed rows, a difference in favour of the latter of 1 cwt. 3 qr. 1 lb.; 35 rows of 'Abundance' showed a total weight of 8 cwt. 1 qr. 4 lb. for the dressed rows, and 9 cwt. 1 qr. 22 lb. for the undressed rows, a difference in favour of the latter of 1 cwt. 0 qr. 18 lb."

The tables presented in confirmation of Messrs. SUTTON's statements are much too bulky for us to reprint, but we may give the summary as follows:—

	Tons.	cwt.	qr.	lb.
810 rows undressed	5	8	2	5
810 rows dressed... ..	4	17	1	1
Total increase in undressed	0	11	1	1

Now this result of itself is what might have been anticipated. No one supposes the copper sulphate or the copper oxide as it becomes when mixed with the lime to be a fertiliser. It is far more likely to be a caustic. That it should act as a check to vegetation is, therefore, just what one would expect. The real question is, whether the advantages which accrue from the prevention or from the destruction of the fungus mould outweigh the loss which may be expected to result from the application of such a substance as copper oxide to the foliage. The practical man will further ask whether, assuming, as is alleged, that the sulphate is a fungus poisoner, the game is worth the candle; will the results, from a commercial point of view, justify the cost? To this latter question the summary table above given affords for the present a decisive answer. The result of Messrs. SUTTON's experiments, as far as they are narrated, is decidedly adverse to the use of the copper salt.

Messrs. SUTTON have so well earned the thanks of the Potato-growing and Potato-consuming

community, that we can only express our gratitude for the pains they have taken in the matter. As specially familiar with the many circumstances which go to modify any general conclusion, Messrs. SUTTON will, however, we are sure, not demur to the statement that their results, valuable as they are, are by no means conclusive. The tables give us no record of the total weight of produce, and, although it is true the tables say "sound Potatos only," we have no guarantee as to what were sound and what were unsound; nothing beyond assertion from general inspection, only what actual percentage of diseased tubers to the whole really was. In experiments of such a large character, general inspection has to take the place of the more exact information that more accurate scrutiny would afford. This is one of the many cases where the so-called "flower-pot" experiments are more trustworthy than those conducted on a larger scale. In all probability, there was much more disease than appeared on the surface. What Messrs. SUTTON's tables show is, the fact that sulphate or oxide of copper acts as a check to the growth of the haulm; and this is what, if we did not know it before, we might have fully anticipated. We do not see that Messrs. SUTTON's tables bring out, as we hoped they might have done, the precise effect upon the fungus. As it is, the diminution of the crop, as recorded, may be partly attributable to the copper, partly to the effect of the fungus. It must also be noted that Messrs. SUTTON's experiments do not agree as to their results with those of Messrs. R. VEITCH, of Exeter, mention of which is made at p. 490. Sorts, soils, dates of application and other factors must all influence the results, in connection with which circumstances we may mention an interesting observation made by Mr. BARRON at Chiswick. Of two adjoining pieces of ground devoted to the growth of Potatos this season, one was tilled and ridged in the ordinary way, so that it was exposed to the action of the winter's frost, and was friable and workable accordingly; the other from force of circumstances, was left unworked. Both plots when the time came were planted with Potatos of the same variety. When the disease came, it overwhelmed those which were growing on the unworked soil, whilst it was so much less destructive on the same variety growing on the tilled soil that the crop is reported as heavy and sound. We have much to learn yet.

At last we have the very great satisfaction to note a general movement towards that extension of horticultural education, for which we have so often, and for so many years pleaded. Now that the tide has begun to flow, it seems as if it would set in with great force. All the more necessary, therefore, is it that it shall be, as far as possible, controlled and directed into right channels. We are inundated with notes and schemes and reports on the subject, for which even if it were desirable we could not find room, but we may say in general terms that the line of advance seems to be three-fold. There is the elementary education in the rudiments, and which is controlled by the Education Department; there is the system of practical demonstration for the benefit of existing cultivators, and there are the projects, some of which are already in action, to furnish more or less complete schools of horticulture and agriculture. It is evident that all three classes must be worked on a practical as well as on a scientific

Copper Salts and Fungous Mould.

Horticultural Education.

basis, and that to do good they must grow according to the progress of evolution, from small beginnings. They cannot be started at once as complete and faultless schemes of operation, but they must be possessed of such vitality as to be able to bend to circumstances, and be capable of adaptation to the requirements of the case as they present themselves. For our own parts, we look with greater confidence to benefit arising from the education of the coming generation than to attempts to instruct the present race of cottagers and labourers, or even the higher grades for whom horticultural colleges are destined. To effect the most good, we must begin at the very beginning with the alphabet of principles, and the most elementary of practical operations. How much

culture, insects, and fungi, and other general matters. It is especially intended that both principles and operations should be practically demonstrated at every step so far as possible, and in some cases it is thought that, for a suitable fee, qualified gardeners in the various districts would occasionally undertake this task. Where convenient or desirable, the pupils in the third stage could themselves perform the simpler work, under the direction of the teacher, who in the two earlier stages had acted merely as a demonstrator. We cannot find room in this issue for the details of this scheme, but we hope to do so on a future occasion.

The system of education which seems to be preferred by the County Councils is the telling-off competent lecturers to visit the rural dis-

holding of good systems of cultivation and by their denouncement of bad ones. Great advantage will also arise from the practical demonstration of good methods of pruning, or other operations, and by the bringing home to the mind of the cultivator that, as a rule, it is as easy to grow good (that is, suitable) sorts as bad ones—a lesson which greatly needs enforcing.

Turning to the third mode of improving horticulture, we must allude in passing to the horticultural colleges for the education of a higher class of pupils, and for the training of teachers—a most important function. We need say nothing at present of the very few existing institutions in this country, and we designedly omit mention of the strictly agricultural colleges, but we may point to the

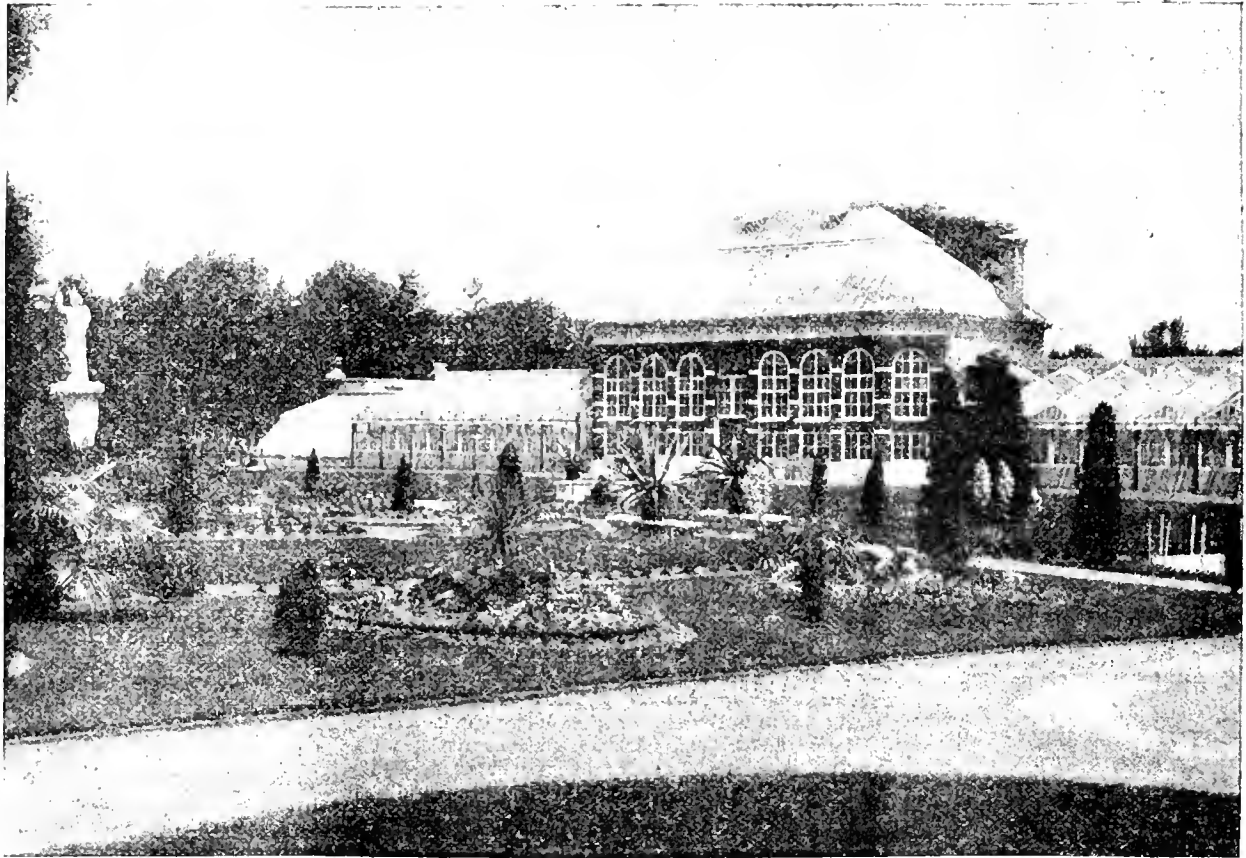


FIG. 66.—THE PARTERRE: MISSOURI SCHOOL OF HORTICULTURE AT ST. LOUIS. (SEE P. 489.)

may not be learned, say, from the growth of Mustard and Cress, in which children delight? In this simple operation there is abundant scope for the clever teacher to drive fast home elementary principles and correct practice.

The British Fruit-growers' Association has prepared a scheme for use in country schools, which has been favourably received by the Education Department. The scheme takes the form of a three years' course, the first stage to be devoted to an elucidation of the principles of plant-life, not only on a botanical basis, but in strict application to cultural requirements. The second stage deals with the elementary operations of gardening, including the description and use of the implements required. The third stage is simply an extension of the second, giving fuller details of the respective operations, and referring briefly to fruit, vegetable, and flower

trials, and to demonstrate matters of primary importance to the cultivator. Thus, Mr. BLANDFORD is lecturing on Entomology at the request of the Kent County Council. Mr. GRANT, Mr. FISH, Mr. WRIGHT, Mr. CASTLE, and others, are admirably qualified to instruct in this practical manner; but, knowing what we do of the average cultivator, we are not very sanguine as to his ability to fully profit by the instruction he will receive. Stolid indifference, scepticism, prejudice are formidable antagonists, and, speaking generally, they are not to be removed from the mind of an adult labourer by lectures, however excellent. It is by beginning with the child, and making his receptive mind grasp principles, that the best chance of future progress is afforded. Nevertheless, no doubt some present good will be done by lecturers and demonstrators of the class we have mentioned, by their constant up-

horticultural and technical schools of Belgium, France, Germany, and the United States, as furnishing models for imitation here. Among the American schools is one in connection with the botanical garden of St. Louis, founded by the late Mr. HENRY SHAW, and now under the direction of Professor TRELEASE. This Institution comprises, in addition to library and a laboratory, an extensive garden, in which garden scholarships have been founded, to which garden pupils have access on special terms, and in which, while the principles are duly enforced in the lecture-room, practical work is carried out systematically and unflinchingly in the garden during a term of six years, the garden pupils in the earlier part of their career having to work nine or ten hours daily in the practical work of the garden. The illustrations we give in the present issue will show

that our statement that the new Missouri Botanical is well equipped for the purpose in view.

We must not overlook either the great number of agricultural stations in Germany and the United States, and even in our colonies, as at the Cape and in Australia, which are the means of diffusing an amount of information which have hitherto been mostly denied to Englishmen at home. Still, we are now not quite destitute of resources of this nature in this country, and a movement is afloat to provide our fellow countrymen with the means of obtaining high-class technical education as good as can be had in Belgium or the United States. A joint committee of the Worshipful Company of Gardeners and of the Royal Horticultural Society is formulating a scheme, of which we subjoin the outline, premising that the scheme in question is still under discussion, and that is mentioned here, not as final, but for the purpose of showing that the Royal Horticultural Society is not behindhand in the consideration of this educational question. The propositions recently agreed to in principle are the following:—

"Name.—The British School of Gardening and Agriculture (?).

"General Objects.—To impart a higher class of education in the principles and practice of fruit, flower, vegetable and tree cultivation than is at present attainable in Great Britain, to (a), Persons wishing to qualify themselves for employment in gardening and garden-farming in this country, (b), Persons who may be desirous to emigrate, or may be already resident in the Colonies.

"It is sought to Educate.—The sons of landed proprietors, farmers, or any others who are interested in gardening and garden-farming, whether born in Great Britain or the Colonies; preference being given to British-born subjects.

"Admission of Students.—No student shall be admitted who does not already possess some practical knowledge or experience of gardening or garden-farming; all students being expected to continue their studies for two years, under ordinary circumstances.

"Employment of Students.—The object being to impart a thoroughly practical education, all students must be prepared to devote themselves to the manual, as well as to the scientific branches of the work.

"Teachers.—Efficient Directors will superintend the instruction in the various branches of cultivation; and lectures, illustrated by practical demonstrations, will be delivered by qualified persons on the scientific aspects of gardening and garden-farming. To attain the object in view, it is proposed that the Worshipful Company of Gardeners, in conjunction with the Royal Horticultural Society of England, secure suitable land within an easy distance of London, where experimental and practical gardening and garden-farming may be carried on, pending which arrangements are being made to utilise the Gardens of the Royal Horticultural Society at Chiswick for the instruction of students in connection with this scheme."

We shall revert to these several means for the advancement of horticulture on another occasion.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Floral, Orchid, and Fruit Committees will be held in the Drill Hall on Tuesday, October 27, when the Society holds its usual display of new and rare plants, &c., and at which special prizes will be offered for cooking and dessert Apples and Pears, as well as for varieties of Grapes. Intending competitors should at once communicate the nature of their intending exhibits to the Superintendent, Royal Horticultural Society's Gardens, Chiswick. In the afternoon, at 3 o'clock, Mr. HARRY J. VEITCH, F.L.S., will read a paper on "Autumn Tints." Specimens of trees, shrubs, or

other plants, or shoots and foliage, will be welcome as illustrations.

THE CONIFER CONFERENCE.—Among the exhibits of living specimens at Chiswick the week before last, some further mention than the mere record of a Vote of Thanks should have been made of the exhibit shown by Messrs. LITTLE & BALLANTYNE, of Carlisle. Those gentlemen showed an interesting collection of some eighty species and varieties, which were not only characteristic, but interesting, as showing what can be grown in the extreme north-western corner of England. The enterprise manifested in the despatch of so large a consignment from so great a distance is particularly noteworthy.

"BOTANICAL MAGAZINE."—The October number contains coloured figures of the following plants:—

Yucca filifera, t. 7197, described as by far the finest of the filiferous Yuccas. A native of North-east Mexico. Professor SARGENT, in *Garden and Forest*, says of it, that its great panicles of white flowers can be seen for miles in the clear atmosphere, and look like gleaming waterfalls pouring out from the ends of the branches. Kew.

Cirrhopetalum Colletti, t. 7198.—A very remarkable species from the Shan States. The flowers are large (in the genus), orange coloured; the dorsal sepal ovate, with a long deeply-fringed terminal appendage, the fringe being of a deep red colour, and very mobile; lateral sepals deflexed linear-lanceolate acuminate, about 4 inches long. The side petals have a terminal appendage like that of the dorsal sepal, but less deeply divided. Kew.

Napoleona Miersii, t. 7199.—A very curious West African shrub, confused with *N. Whitfieldii*, but distinguished, according to Sir JOSEPH HOOKER, by the pale membranous obovate leaves, with faint sunken nerves, and the smaller number of teeth to the corolla, and other points. Kew.

Euryphia Billardieri var. *Millynyi*, t. 7200.—A species like *E. pinnatifolia*, but with entire linear-oblong leaves, and much smaller flowers. It seems uncertain to what order this curious genus should be referred. It has, in fact, no near relatives, and, considering that it is confined to Chili and Australia, it may be regarded as a survival of vegetation different from that now existing, but which flourished when there was direct land communication between Temperate Austral and South America.

Epiphyllum Gaertneri, t. 7201.—A species confused with *E. Russellianum*, but differing in its much larger, broader, and thicker crenulate articulations. The flowers are more brilliantly coloured, with narrower petals and terete (not winged) calyx-tube, and the long spreading stigmas. Kew.

CATTELEYA LABIATA VAR. AUTUMNALIS.—M. LINDEN, of L'Horticulture Internationale, Parc Leopold, Brussels, announces his intention of selling at Messrs. PROTHOR & MORRIS' Auction Rooms, Cheapside, on Friday, October 30, about 200 plants in flower of *Cattleya labiata* var. *autumnalis*. The event should be of much interest to cultivators and collectors of Orchids, affording, as it does, a favourable opportunity of observing the merits or otherwise of different varieties there exhibited in flower.

THE POTATO DISEASE.—In several quarters the question has been asked, whether salts of copper applied to the foliage would leave traces in the tubers in sufficient strength to prove dangerous or unwholesome for table use. This has long since been proved in the negative sense in France, and Messrs. ROBERT VEITCH & SON, of Exeter, whose experiments with the formula given in our columns were most successful, have gone into the matter, and report favourably on the protective influence of the copper. They sent to Mr. BERNARD DYER, the Analyst for the Devon County Agricultural Society two samples of the tubers—one a sample of Potato whose haulm had been dressed with the solution of copper and lime, and the other undressed. They send us Mr. DYER'S report, which we give below,

and which must be regarded as a satisfactory answer to the question raised:—

[COPY.]

"Laboratory, 17, Great Power Street, E.C.

"October 17, 1891.

"Messrs. ROBERT VEITCH & SON, Exeter.

"DEAR SIRS,—I have carefully tested the Potatoes you sent me, for copper. Practically speaking, they are free from copper—that is to say, there is less than 100th of a grain of copper in 1 lb. of the Potatoes. Since I find practically the same quantity in both sets of Potatoes, viz., both in the dressed and in the undressed ones, it appears clear that the small trace that is to be detected must be regarded as normal to Potatoes grown in this field, and not as due to the dressing. But even if it were, the quantity is to be regarded as infinitesimal.

"Yours faithfully (Signed) "BERNARD DYER."

L'ORCHIDÉENNE.—The Brussels Society of amateur orchidists known as the Orchidéenne, held their thirtieth meeting on October 11, in the winter garden of L'Horticulture Internationale. The exhibition was a success in every way, especially so, considering the lateness of the season. In addition to the exhibits enumerated below, the many visitors much admired the fine series of varieties of *Cattleya Warocqueana* (*C. labiata autumnalis*), which clearly demonstrated the excellence of this magnificent species, of which so much is now thought. Among the principal Orchids staged, we must specially mention the following:—The splendid *Cattleya Warocqueana*, *C. maxima* var. *Malonana*, a unique specimen; *Cypripedium Stonei*, *C. Harrisianum*, full of bloom; *C. tonsum*, and *Haynaldianum*; and *Oncidium varicosum* Rogersi, bearing a long raceme of brightly-coloured flowers, sent by M. G. Warocqué. The new *Angraecum du Bayssoni*, a most interesting species, with sweetly-scented blossoms; and the charming *Laelia* × *exoniensis*, from Madame E. Gibeze. Two plants of *Cattleya aurea* of superior height and colour, and *C. aurea* var. *Lansbergeana*, from M. J. De Lansberge. Splendid specimen of *Cypripedium Rothschildianum*, bearing four most beautiful flowers, from M. Dallemagne. The curious and elegant *Briopsis rutidobulbon* and *Cypripedium Roebelinii*, both covered with bloom; *Oncidium splendens* and *Dendrobium Phalaenopsis*, with flowers of a warm shade of reddish-violet, from M. Van Imshoot. A species of *Odontoglossum*, from M. F. Kegeljun. A fine example of *Cattleya Schilleriana*, with large and well-coloured flowers; and *Angraecum falcatum*, from M. A. Wineqz. *Vanda cœrulea*, a magnificent plant, with flowers quite unusual for their size and for their bright bluish colouring, from M. J. Moens. Beautiful examples of *Cattleya aurea*, *Odontoglossum Insleyi* var. *O. Harryanum*, and *O. grande*, *Cypripediums Io*, *Elloradio*, and *vexillarium*, all splendid as to colouring, were sent by M. le Dr. Van Cauwelaert. *Coryanthes leucocorys*, *Mesospindium vulcanicum* var. *grandiflorum*, with large flowers; the curious *Nanodes* (?) sp., *Mormodes baccinator* var. *aureantiacum*, of a beautiful orange yellow; *Trichocentrum triquetrum*, *Eulophia pulchra*, *Cirrhopetalum Brieanum*, *Cypripediums tonsum*, *regale*, *Arthuriannum*, and *cananthum superbum* (bearing about twenty flowers); *Oncidiumis Lancœanum*, *aurosium*, and *Forbesi*; *Vanda cœrulea*, well bloomed; *Burlingtonia granadensis*, *Cochlioda Nützliana*, *Odontoglossums Lucianianum*, *crocidipterum*, and *Andersoni*; *Cattleya aurea*, with a rather spreading lip, and of splendid colouring; and, finally, the magnificent specimens before mentioned of *Cattleya Warocqueana*, showing much diversity and beauty of colouring, sent by M. Linden. The jury awarded the following First-class diplomas: For *Angraecum du Bayssoni* to Madame E. Gibeze; *Coryanthes leucocorys* from M. Linden, *Mesospindium vulcanicum grandiflorum* from M. Linden. Botanical Certificate awarded to *Nanodes* (?) species, from M. Linden. First-class Certificates of Merit were awarded for *Cattleya aurea*, from M. le Dr. Van Cauwelaert, unanimously awarded, *Cypripedium Rothschildianum*, from M. Dallemagne, unanimously awarded, *C. vexillarium*, from M. le Dr. Van Cauwelaert, unanimously awarded, *Dendrobium Phalaenopsis*, from M. Van Imshoot, unanimously awarded, *Odontoglossum Insleyi*, from M. le Dr. Van Cauwelaert. Four Certificates were awarded for four varieties of

Cattleya Warocqueana; two sent from M. Warocqué, two from M. Linden. *Cattleya aurea* var. *Lansbergeana*, from M. J. van Lansberge; *C. maxima* var. *Malonana*, from M. Warocqué, also were awarded First-class Certificates. Second-class Certificates of Merit were allotted for *Cattleya Schilleriana*, from M. A. Wincqz; and *C. aurea* from M. J. van Lansberge. First-class Certificates for cultivation were awarded for *Vanda cœrulea*, from M. J. Moens, unanimously awarded. *Cattleya Warocqueana* (*labiata autumnalis*), from M. Warocqué; and *Cypripedium Roebelinii*, from M. Van Inshoot.

DORYANTHES EXCELSA.—We learn that this noble plant is now flowering for the second time in the Trinity College Botanic Garden, Dublin. Mr. BRIDGE will have to find some other notable plant to celebrate the tercentenary of Trinity College, which will occur next year.

KELWAY MEDALS FOR GLADIOLUS, PÆONIES, AND PYRETHRUMS.—We are reminded by Messrs. KELWAY that five handsome and valuable Kelway Medals may be won by amateurs in 1892, viz., four large Silver Medals, and one large Silver-gilt. They are given to extend the cultivation of improved forms (of British origin) of some of the most beautiful flowers which can be grown in the gardens of the United Kingdom, and are as follows:—Mr. JAMES KELWAY will again present the Kelway Gladiolus Medal (Silver) to the Royal Horticultural Society, to be awarded by them at one of their August meetings for the best exhibit by any amateur of twelve varieties of British-raised Gladiolus—distinct hybrids of *G. Gandavensis*. Mr. WILLIAM KELWAY will present the Kelway Medal (Silver-gilt) to be awarded in the same manner at a June meeting of the same Society for the best exhibit by an amateur of a collection of three single and nine double-flowered varieties of herbaceous Pæonies, three blooms of each variety. Also the Kelway Medal (Silver) at a June meeting for the best exhibit by any amateur, of a collection of flowers of six single and six double varieties of Pyrethrums, three blooms of each variety.

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.—The sale of this handsome plant, which the importers, Messrs. F. SANDER & Co., aptly term the "Elephant Moth Dendrobe," at Messrs. PROBEROE & MORRIS' rooms, 67 and 68, Cheapside, E.C., proved one of the Orchid sensations of the season, as announced in the advertisement of the sale in the *Gardeners' Chronicle*, October 10, p. 419. The event brought together the finest company of buyers which have attended for some years, and the plants of any importance realised from three to six guineas each, and, in a few cases, ten guineas; while one mass fetched twenty, and another twenty-eight guineas. Some of the smaller bits, and unstarted plants not potted up, and with but few leading growths, fetched lower prices, in proportion to their quality, and the whole, including a few lots of true old autumn-flowering *Cattleya labiata*, realised between £2000 and £2100. As is always the case when a good thing is fairly offered, everyone seemed well satisfied both with the plants and the prices.

EALING DISTRICT GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—On Tuesday, the 20th, the above-named Society organised a competition for dinner-table decorations, when the exhibits were staged in Prince's Hall, Ealing, and filled six tables, all provided with a uniform arrangement of vases, and laid in the same way. The decorations shown by Mr. HUDSON, of Gunnersbury, were composed of growing foliaged plants, some variegated, others green; the effect was distinct and unusual, but somewhat sombre. Mr. WHITAKER's table was crowded with many flowers and numbers of small specimen vases; *Pancretium*, *Gloxinas*, *Allamandas*, *Pelargoniums*, *Roses*, *Cyclamens*, and other flowers were arranged with Fern and scraps of Pampas-grass. On Mr. MENDEW's table, tawny and pink flowers predominated; pink *Odontoglossums*, brownish *Cypripediums*, *Dendrochilums*, *Pelargo-*

niums, *Primulas*, and *Chrysanthemums* were chiefly used. Mr. PENNEY crowded his table with many small vases and many and most varied flowers, which were put together with imperfect attention to colouring; *Fuchsias*, *Carnations*, *Hoyas*, *Abutilons*, *Roses*, *Lilies*, *Primulas*, *Canary Creeper*, and many other flowers, were interspersed with coloured and green foliage. Mr. COOPER employed principally *Stephanotis*, *Tuberose*, *Hoyas*, *Allamandas*, *Japanese Anemones*, and *Salvias*; for foliage, *Asparagus*, scarlet leaves; and two varieties of grass. Mr. PREWETT, Swiss Nursery, Hammersmith, was wise in confining himself to red, yellow, and white flowers; *Pelargoniums*, *Allamandas*, *Eucharis*, *Pancretiums*, and *Chrysanthemums*, were arranged in the tall vases, and in several small glass baskets. Altogether, the exhibit was a satisfactory one, and reflects credit on the organisers.

LONDON INTERNATIONAL FRUIT SHOW.—As will be seen from an announcement in another column, it is proposed to organise a great fruit show in London in 1892. A meeting will be held to consider the project, at the Cannon Street Hotel on Friday, October 30, at 3 P.M., when Alderman Sir JAMES WHITEHEAD, Bart., will preside. This is a matter for the Royal Horticultural Society specially to consider, and whether the Society undertakes the matter itself, or in co-operation with other bodies, the Society should, as the national representative body, either take the foremost position or none at all.

THE HARVEIAN ANNIVERSARY.—On Monday, October 19, Dr. W. H. DICKINSON delivered before the Royal College of Physicians the annual Harveian oration. The lecturer reminded his audience of the importance of the famous physician's discovery, and added that "It was not too much to say that the medicine of to-day was scarcely less permeated with the results of HARVEY'S discovery than the human body with the circulation which he discovered." During the afternoon, the President of the College (Sir ANDREW CLARK) presented the Baly Gold Medal for "Researches in Physiology" to Professor FOSTER of Cambridge; and the Moxon Gold Medal for distinction in clinical medicine, especially in connection with "Gout," to Sir ALFRED GARROD. The latter medal had never before been awarded.

FLOWERS AT THE WORLD'S FAIR.—At this much-talked-of exhibition, at Chicago, everything is to be on a vast scale. It is estimated that the total cost of the horticultural department alone will be about £156,250. Ten acres of ground are to be planted, some portions with *Roses*, *Lilies*, *Rhododendrons*, &c.; others with wild flowers. The number of *Roses* used will be about 100,000; there are to be 500,000 *Pansies*, and unlimited numbers of other flowers.

PROFESSOR HELMHOLTZ.—The Emperor WILLIAM has shown his sense of the value of Herr HERMANN VON HELMHOLTZ'S work and discoveries, by appointing him a member of the Privy Council, with the title of Excellency. The compliment is doubly great on account of the friendly way in which the Emperor intimated the news to the Professor, whom he hoped would long live to enjoy his new honours, and benefit "Germany and the whole world."

SEEDLING TACSONIA.—Mr. SMYTH recently forwarded us a flower of a seedling *Tacsonia* raised by him, as he supposes, from *T. manicata*. As the resemblance is very slight, we venture to doubt this origin. It seems to us more likely to be a seedling from *T. mixta*. The leaves are divided half-way down into three lanceolate, finely-toothed lobes, glabrous above, downy beneath. The petiole has about four pairs of sessile glands. The bracts form a cylindrical sheath, 1½ inch long, and slightly downy especially within; the free tips of the bracts are ovate lanceolate. The flower-tube is 3½ inches long, cylindrical, slightly dilated at the base, green, and almost entirely glabrous. The limb of the flower is about 3 inches across, the sepals oblong acute, aris-

tulate, keeled, green, slightly downy; the petals as long as the sepals, rosy-pink. The corona is very small, of two rows of tubercles, the outer lilac, the inner white. Ovary elliptic, downy. The plant was grown in a 10-inch pot, plunged to the rim in a south border against a wall, and flowered very beautifully in that situation. At the approach of winter the pot can be lifted.

FRUIT CONGRESS IN MANCHESTER.—As these lines are passing through the Press, a great Fruit Exhibition and Congress are in progress in Manchester. Some account of this will be found in our present issue, and we shall refer again to the matter in our next number.

SULPHO STEATITE.—This substance, which is a mixture of sulphate of copper and silicate of aluminium and magnesia, has been tried in the School of Horticulture at Ghent this season, in comparison with the Bordeaux Mixture. The result, according to the *Lindenia*, was that the one is as efficacious as the other, and that practically it is a case of the difficulty of selection.

PLANE TREES AT GHENT.—The *Illustration Horticole* states that the Plane trees in the boulevards of that city have lost their leaves prematurely. Red or brown streaks run parallel with the nerves. M. DE NOBLE, of the School of Horticulture, has ascertained that the trouble is due to the occurrence of a fungus—*Glaeosporium nervisequum*. A 3 per cent. solution of sulphate of copper, used in the form of spray, is recommended.

DECORATIVE GROUPS.—We understand that Mr. WILLIAMS, gr. to S. BAERLEIN, Esq., of Didsbury, who has been a very successful exhibitor in competitions of this nature, and who gained the Royal Horticultural Society's Medal at Matlock this year, has expressed his intention not to show in future.

PEACH BLISTER.—M. DE LA BASTIE, President of the Pomological Society of France, is said to have prevented the occurrence of this pest by the use of sulphate of copper.

VANDA SANDERIANA, GOLDSMID'S VAR.—This is by far the finest form of this noble species which we have ever seen. It comes from Sir JULIAN GOLDSMID, Somerhill, Tonbridge, in whose choice collection it has just flowered. It gains at all points over the type, viz., in size, perfect form, brightness of colour, and effective display of the markings. The flower is just 5 inches across at its widest, the sepals 2 inches, and the petals 1½ inch in width. The petals and upper sepal are of a bright rose colour, with some beautiful crimson spotting and veining on the lower halves. Almost the entire surface of the lower sepals is heavily veined with a claret-coloured tracery, various shades of crimson mingled with the tawny-yellow which margins the sepals, and is visible in the lower edges of the petals showing between the lines. It is a common thing for anyone who flowers a fairly good *Vanda Sanderiana* to fall into ecstasies over it, and think there was never one like it before; but Sir JULIAN'S flower will withstand the test of comparison, at all events, it would take an unusually beautiful variety to beat it.

THE CHELTENHAM HORTICULTURAL SOCIETY held its annual dinner on the 7th inst., when Mr. CYPHER proposed success to the Society, coupling the toast with the name of the Mayor as President of the Society.

CHISWICK.—The ill-fortune that, so far as the weather is concerned, attended the exhibition of Conifers at Chiswick was, let us hope, terminated by the destruction of one of the tents in the great gale of October 13. As the accident did not occur till after the close of the exhibition, the results were not so serious as they might otherwise have been. The Sunflowers have set in consequence of the heavy storms to which they have been subjected, but many of the *Asters* are still in full beauty, such as the varieties known as *Harpur Crew*, *bessarabicus*, *vinineus*, *diffusus* and its varieties, *horizontalis*, and

pendulus; the Kew form of *Aster versicolor*, a charming little bush, covered with pink stand whites; the tall *Asters Novæ-Angliæ rubra* and *rosea*, and a very fine sort with large blue flowers, provisionally named *Melpomene*. It is interesting to note, that in spite of the battering rain and hail, the tuberous *Begonias* in the beds are, comparatively speaking, little the worse.

CIERGNON.—The King of the Belgians, whose interest in horticulture is well known, and whose gardens at Laeken, under the superintendence of Mr. KNIGHT, are also well known to many of our readers, has a fine establishment at Ciergnon, in the Ardennes, where his majesty has been his own landscape gardener. In a subsequent issue we shall publish an account of this magnificent establishment, which the great pressure on our space forbids us doing at present.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The fortnightly meeting of the above was held on Wednesday, the 14th inst., when a paper was read by Mr. H. BROWN, on "Exhibition Onions." A discussion followed the reading of the paper.

CAUTION.—Nurserymen should be on their guard against the depredations of members of the Long Firm. One man is well known to the police, but, unfortunately, no one comes forward to prosecute, and consequently, as is stated in a note from the Detective Department before us, the firm "go on getting goods from all parts of the country."

WEDDING.—The only daughter of Mr. OLIVER GOLDSMITH, the respected head gardener to Sir WALTER FARQUHAR, Bart., Polesden, was married on Saturday, October 17, at St. Nicolas Church, Bookham, to Mr. ED. BATES, of that place.

HOME CORRESPONDENCE.

MELON WEBB'S PRESIDENT.—I am very pleased with this new Melon, and, notwithstanding the already long list of varieties being cultivated, I consider it a decided acquisition. It is the result of a cross between *Hero* of Lockinge and *Hendre Seedling*, both handsome, free-bearing, and high quality varieties. The fruit attains to a good size under ordinary cultivation, is oval in shape, of a deep yellow colour, well netted, and of fine flavour, the flesh being white, firm, and deep. The plant is of good constitution, a good grower, showing bloom and setting its fruit with great freedom. *H. W. Ward.*

CUCUMBER STOURBRIDGE GEM.—This excellent Cucumber was sent out a few years ago by Messrs. Webb & Sons. It was secured by fertilising the flowers of *Telegraph* with those of the *Prince of Wales*, and it partakes largely of the qualities of the former well-known and highly reliable variety. It is a vigorous grower and very prolific, bearing straight, handsome, clean, and symmetrical fruit, from 18 inches to 24 inches in length, the flesh being very white, crisp, and of good flavour. *Stourbridge Gem* is quite as suitable for winter cultivation as it is for summer. *H. W. W.*

VINES AND PEACHES IN ONE HOUSE.—It is often asserted that Vines and Peaches cannot be successfully cultivated in the same house, and that many attempts to do so have ended in failure. This is too broad an assertion to make. In a long span-roofed vinery, which runs east and west, and which is divided by a partition in the centre, in the gardens at Barham House, near Newbury, there is the best example of this kind of cultivation which I have yet seen. The Vines, late varieties, are *Lady Downes*, *Gros Colmar*, and *Black Alicante*, and they are grown on the south side of the house; the bunches, although not quite up to exhibition form, are useful table samples, and had the appearance of being capable of keeping for a long period of time. The Peaches were *Walburton's Admirable*, and others, the former bearing a capital crop at the time of my visit; the fruits of *Pine-apple* and *Lord Napier Nectarines* were excellent. The trees showed by their healthy appearance, matured wood, and the

deep colour of the leaves, that the treatment they were receiving suited their requirements, and augured well for the future. A free system of training is followed, and the trellis right up to the apex of the roof in the "Paxton" houses was entirely covered by the trees. The method of ventilation adopted in this class of house may have had something to do with the success, air being admitted the whole length of the roof. Anyhow, after seeing these trees, I shall have no hesitation in advising others to follow the plan of combining Vines and Peaches, but I would advise that the trees be planted where only late varieties of grapes are grown, the temperature needed for late Vines in the spring being more agreeable to the Peach and Nectarine trees. *E.*

LILIES IN 1891 AT OAKWOOD.—I send my usual autumnal note on the blooming of my Lilies in the past season. *Lilium Hansonii*, *L. Leichtlinii*, *L. odorum japonicum*, the Lily soid as the new red form of *L. Leichtlinii*, but which seems to me to be the old *L. tigrinum jucundum*, *L. pardalinum* and its varieties, *L. Brownii*, *L. superbum*, *L. giganteum*, *L. cordifolium*, and *L. tigrinum splendens* were all very fine, *L. auratum rubro-vittatum*, and some *L. auratum macranthum*, and especially one coloured like *L. a. pictum*, were especially good. *L. candidum simplex*, only moderate; *L. auratum* suffered a good deal, first from the hail showers bruising the buds, afterwards from the cold heavy showers and high winds; and individual plants had fine flowers, but the most of the plants had enough damaged buds or flowers to disfigure them. This unkindly season gave a good lesson as to the difficulty of growing *L. auratum* in cold damp climates. *L. speciosum* and varieties varied much. Our finest flowers were on plants high up on the "mountain" at Oakwood, where the air about them was dry, and in a sunk tub with the bottom out at the entrance gate at Heatherbank, where they are sheltered by shrubs from the sun, but exposed to much wind; these are still in great beauty. In some damp quite sheltered places at Oakwood these Lilies bloomed well, but in damp exposed places many of the flowers were spoilt. This was our first year of growing *L. odorum japonicum*; it flowered well out-of-doors, and had a sweet scent, the back of the flowers had a dark shade, but not the rich dark colour of *L. Brownii*—those grown in our Lily-house were pure white and the scent delightful. If they stand out of doors as well as *L. Brownii*, and we have planted them in different situations to ascertain this point, I think that they will deserve to be more generally grown. Many experienced gardeners have seen our plan of growing Lilies, when exposed to tree and shrub roots, in such casks with the bottoms out, and approved of it. I had lately a pleasant criticism on Oakwood, a first-class amateur lady gardener owning a beautiful garden, after having carefully looked over our plants, said, "I hardly know what this place should be called—it isn't a garden." I agreed it was not a garden. She then said, "It is a place where plants from all parts of the world grow wild." This is exactly what I am aiming at, and if any success has been scored, it is in great part due to friends in many countries having helped with seeds and plants. *George F. Wilson.*

WALNUT TREE FRUIT FAILURE.—In regard to "F. M.'s" note in last week's issue of the *Gardeners' Chronicle*, respecting the failure of his Walnut tree to ripen its fruits, notwithstanding the healthiness and vigour of its branches and leaves, my opinion of the matter is, that probably this may arise from the lack of phosphoric acid in the soil. We know that this element is an important factor in seed formation, and that Walnuts especially are greatly dependent upon an available supply of this substance in the soil, which, in the case in question, may have become practically exhausted. From some recent investigations which have been made, it seems that as the season of the year advances, there is a retrograde movement of the phosphoric acid of the leaf to other parts of the tree; and as the seed is well known to contain a relatively large quantity of this acid, we may legitimately be allowed to think that the food elaborated in the leaf, when in sufficient available amount, finds its way into the fruit, and thus assists in its development and maturation. Remedy:—As a remedial measure, it might be advisable to apply a dressing of 3 or 4 lb. of superphosphate of lime, and the same weight of kainit salts; or if the soil or subsoil is not of a chalky nature, then 6 or 8 lb. of basic slag may be used instead of the superphosphate, with 3 lb. of kainit salts. This should be sown broadcast around

the tree over an area of about 2 poles of ground, and dug in during the present autumn. *J. J. Willis, Harpenden.*

CONING OF CEDRUS DEODARA.—I am pleased to be able to add to the list you have given in the *Gardeners' Chronicle* of trees of the above-named Conifer coning this year, one which is growing here. This tree, which, without searching, I see is bearing four cones, equal in size to the one figured in your journal of October 10, p. 423. There are also on the same tree scores of male catkins yet unripe, and this same tree bore male catkins thirty years ago, and on several occasions since, but never to my knowledge bore a female cone before. Several trees of this Conifer on the grounds here in less exposed situations, and of the same age, died one after another. They appear to enjoy plenty of air—in fact, this seems necessary for them, if not too much exposed. *Henry Mills, Enys, Penryn, Cornwall.*

FIGS FROM THE OPEN WALL.—I send you three Figs gathered from the open wall, and grown without any protection whatever. The size of the fruits this year is but little more than half what is usual. Although there is a very heavy crop, I do not expect many more will ripen after this time. Considering the cold, unless, and wet season we have experienced here, it is remarkable; during July alone we had a rainfall of 6.50 inches, and August was but very little less. It may interest some of your readers to know what can be grown in the far north within a mile of the Moray Firth, and only 100 feet above the sea-level. Peaches, as a rule, do well outside, but this season the blossom had a very trying time to come through, as the weather in the month of March was very severe here this year; the biting wind at that season is our worst part of the year. *J. F. Smith, Cullin House Gardens, N.B.* [The Figs were wonderfully fine examples to be grown on the open wall so far north. We doubt if they would have ripened so well in the neighbourhood of London. Ed.]

JOHN DOWNIE CRAB.—I was pleased to see a notice, in your issue of the 10th inst., of a description of the ornamental Crab, John Downie. This is a variety of Crab which deserves to be better known than it is at present, and it undoubtedly will become a great favourite with planters. Five years ago I obtained six healthy, well-grown trees from Mr. Downie's nursery, in Edinburgh, and planted them in the orchard among the Apple trees, and they bore a very heavy crop of yellow-skinned fruit. I took the trees from the orchard, and planted them as ornamental specimens, and they were this season perfect pictures in the spring and autumn. It is a tree that grows vigorously and flowers profusely. It is, like most of the Crabs, not particular as to soil, situation, or aspect, but it certainly dislikes the too great use of the knife; a careful thinning out each winter, where the young shoots crowd each other, and balancing the growth, are all that is needed. The fruit makes a good preserve. *M.*

SUBJECTS OF STUDY FOR GARDENERS.—The correspondence on this subject is a promising sign. There have been similar signs before, but after the appearance of some letters in the gardening Press the subject has lapsed, and no definite steps have been taken. It ought not to be too much to hope that something, however small, should result from the present discussion, and an earnest endeavour made to satisfy a need which undoubtedly exists. As Mr. F. W. Burbidge points out in his letter, "it would be a fine opportunity for the Royal Horticultural Society for promoting a forward movement in gardening, and fostering unity amongst the craft, which would realise splendid results; the Society receiving the gratitude of gardeners." There is now, as ever, need for improvement, so that the younger generation may keep abreast of the times, and the higher the standard is fixed the better for them; and if horticulture is to advance, the leading workers must add largely to their knowledge. It rests with young gardeners of the present what the future of horticulture in this country shall be—the outlook is not discouraging. The subjects for thought are many. Essentials, such as good writing, grammar, and conversation are worthy of acquirement; and a knowledge of the structure of plants, and the chemistry of soils would be of great advantage to all. Other subjects are a knowledge of the French or German languages, and shorthand; and not to ignore the artistic side of life, drawing and music should be included. But the desire to acquire knowledge often exists where the facilities for learning are wanting, and in the remote localities this is commonly the case, and as a con-

sequence interest in higher attainments gradually dies out finally. We owe much to the gardening Press of this country, but it does not provide in a satisfactory manner for the needs of the younger gardeners. If a page were set apart for contributions by them, and articles inserted regularly on a variety of topics by the best writers, it would be received with delight. Will editors do this? The idea is worthy of serious consideration. *Fred. R. Swan, Enville Gardens, near Stourbridge.* [Our young friend's letter, like others that we have received on the same subject, exhibits the common shortcomings of the school teaching of this country, and points to the need that exists for a better and clearer knowledge of the English language, and for clear thinking and intelligible composition, before any of those other subjects which he deems necessary to complete a gardener's education are tackled. Ed.]

— I felt very much interested lately in the note by "W. L.," p. 432, of this journal, and should like to find in every number of any horticultural paper an article on botany, for I think that the horticultural papers ought to be interesting, not only for the older gardeners, but for the younger men. As for Mr. Burbidge's note in last week's issue, I fail to see how his advice can be termed practical as regards the majority of us young gardeners. As a rule, young gardeners have not much money at their disposal, and where there is no other source than the wages they get, there is a very poor chance for them of possessing many scientific works. Nor has their profession much encouragement to offer, even should they be able to scrape the necessary sum of money together. What is to become of them after all? I have amongst my acquaintances here young gardeners employed, much against their will, as Cucumber growers. They have served an apprenticeship in really good establishments, but are obliged to follow this branch of our trade for the want of something more interesting or better. Suppose, now, the gardener, possessed of all this scientific knowledge, has to slave, for the sake of a living, from 6 A.M. till 8 P.M. in Cucumber or Tomato-houses; or, perhaps, chances to be engaged as a single-handed gardener, if he is married and without encumbrance, provided he can milk a cow, and does not object to a little house-work, would it not make those men feel their poor condition and prospects much keener if they had studied the books mentioned by Mr. Burbidge? *J. J. C., Ponder's End.*

THE JAMES GRIEVE APPLE.—In your issue of October 17, I note that the Scottish Horticultural Association has awarded this (in my opinion) grand new Apple a Certificate. We had from the raisers, the Messrs. Dickson & Co., of Edinburgh, two young bushes three years ago, and I have been so pleased with them, that I wish that many more had been planted. It is a free grower, and has borne excellent crops for two years running. By same post I send you a couple of fruits for your opinion. *J. Jeffrey, Caversham Park.* [An autumn fruit, of good appearance, and first-rate quality for cooking purposes; height 2½ inches; width, 3 inches; colour, yellow, with crimson flush and streaks on the sunny side. Ed.]

HARDY PERENNIALS.—The present question is not botanical—it is purely horticultural. By that, I mean, I look at it from a gardening point of view; so, I am afraid, I cannot accept your answers to my questions. Now, as regards bulbs, one of our oldest and most respected judges, Mr. T. Baines (I hope he will pardon me for introducing his name into this discussion), has, I am informed, expressed his opinion that what is not excluded from a schedule, is included. This opinion I have heard endorsed by several other good judges, and I am quite prepared to accept it. Now, nothing was said about bulbs in the Royal Horticultural Society's schedule; it was only stipulated that Sunflowers and Asters were to be represented. Consequently, I maintain that I was quite within my rights in showing cut blooms from a bulbous plant; and let me ask if the society's judges propose to make it a rule to exclude bulbous plants, why were the prizes awarded at the July meeting? We nearly all showed Lilliums, and nothing was said about it. Again, looking at local shows, nearly every other box exhibited by cottagers contains spikes of that grand old Lily, *L. candidum*, of which one can hardly say too much, especially as a cottager's plant. I think you will admit that this is hardy, and as it throws up its glorious spikes of flower year after year, I fail to see how, from a gardening point of view, it must

not be considered perennial, and there will be endless trouble if they are to be disqualified at our smaller exhibitions. Now, as regards Pentstemons: you refer me to Nicholson's *Dictionary*. I accept it. Kindly look at p. 71, at the end of paragraph 2, you will find—"The best plan is to insert cuttings annually, and preserve stocks in a cold frame. If any old plants are to be kept outside, they should be covered with ashes." You were kind enough to say that I am qualified to frame a definition of a hardy perennial; a plant of this description is, in my opinion, a long way from it. I am quite aware that there are hardy species of Pentstemons, but we are now considering the named varieties usually grown in gardens, most of which, I believe, originate in France. I have informed my gardener that I consider he fairly won his prize, and shall pay him his prize-money, and as I consider the matter ought to be definitely settled, I propose to bring it before the Council of the Royal Horticultural Society. *W. Marshall.* [There is so much to be said on either side of the question, and judges of equal standing and competence offer such conflicting opinions, that we are glad our correspondent intends to bring the matter before the Council of the Royal Horticultural Society. Awaiting their decision, we hold that it is not expedient as a matter of horticultural procedure, entirely apart from botanical considerations, to mix up bulbs with hardy perennials. Ed.]

THE TEDWORTH GLASS-HOUSE.—I was very much interested with the account given in the *Gardeners' Chronicle*, October 17, of the great glass-house of Tedworth Park, which was afterwards removed to Southbourne-on-Sea near Bournemouth. The estate forming this new district was purchased by T. A. Compton, Esq., includes nearly one mile of foreshore, and is very pleasantly situated, having good views of the Isle of Wight and the Needles. The above great conservatory, with large pleasure grounds formed around, was afterwards called the Winter Gardens, Southbourne-on-Sea. I was manager there for four years; while there I remodelled the heating of this large house, taking out the four old saddle-boilers which did the work very badly, and using instead one of Week's large Duplex Tubular Boilers which did the work in a very satisfactory manner, heating eight rows of 4-inch piping, altogether about 2584 feet. I also brought the heating of all the smaller plant houses under one boiler instead of three as before. While at Southbourne I had what, I suppose, has never been attempted since, a Chrysanthemum show consisting of 5000 plants, all grown at the Winter Gardens. I herewith send a photograph of the conservatory as it appeared in winter; its length, as erected at Southbourne-on-Sea, was 323 feet, or nearly 108 yards, and a width of 40 feet. *W. Bailey, Superintendent, Southwark Park, S.E.*

SCOTLAND.

SPLITTING OF PEACHES AND NECTARINES.

The causes of splitting and decaying of stones in Peaches and Nectarines is often attributed to over-watering; but, judging from many instances, where the evil has shown itself in its worst form, it may be fairly said that injudicious application of water is productive of the evil, especially to gross-growing trees, when the fruit is ripening; and on well-trained borders, too, there is no exception. Often, at stoning-time, trees under glass are allowed to get dry (outside, the roots have to take what the elements supply), and when the crop is considered safe, and about to swell into the ripening stage, a good soaking of water is given to the roots, and the syringe is freely applied when the house is shut up with strong heat. The sudden reaction is more than the elasticity of the fruit can stand (many varieties, at least), and it is bound to give way at the stone or in the flesh. Dryness at the roots of Melons, Grapes, and other fruits, which causes the skin to become brittle, succeeded by a moist atmosphere, is sure to be running a risk of having cracked fruit.

It is well known how liable to crack the Stanwick and Victoria Nectarines are; but if kept in good healthy action at the roots till stoning is completed, and a dry bracing atmosphere, night and day, during the ripening period, little difficulty need be feared from cracking or stone-splitting. Stone fruits gene-

rally suffer more from lack of moisture at the roots (especially on thoroughly-drained borders) than from too much water. *T. C. H.*

THE HORTICULTURE CLASS, HERIOT-WATT COLLEGE, EDINBURGH.

The class for tuition in the technology of horticulture, which was opened in 1888 in connection with the Heriot-Watt College, Edinburgh, and was continued the following year, but lapsed for lack of interest, is again re-opened under, we hope, more favourable circumstances. The introductory lecture for the session 1891-2 was delivered by the lecturer, Dr. J. H. Wilson, on the 16th inst., the subject being, "A Gardener's Training."

The lecturer held, that the education of a gardener in these days should be, like that of others, as good, full, and thorough as it is possible to be. In order to advance his own position, or contribute to the advancement of his profession, he must be superior in education. In general, the definition of a gardener's education might be put into two propositions—(1) mental training, to be derived from books, lectures, classes, mutual improvement societies, and the like; and (2) manual training, to be derived from the practice of his professional duties. The lecturer then described in detail the various subjects in the prosecution of mental training which gardeners should give their attention to. The array of subjects was apt to perplex and dishearten the beginner; but if he would bear in mind that the "world of books" contains in the main the same facts, more or less differently expressed by different authors, he would cease to despair. After a thorough grounding in the three "R's," the gardener-student was recommended to give his attention to pen-and-pencil sketching, free-hand geometrical drawing, and botanical drawing; a systematic study of the mother-tongue, particularly with regard to acquiring an easy and clear style of expression by the study of masters of composition, rather than the hard and fast rules of grammar; Latin sufficient, at least, to enable the student to appreciate the meaning of plant names. Botany and horticulture being indissolubly connected, the gardener-student should inquire particularly into the structure and physiology of plants, and all that relates to the fertilisation of flowers, improvement of crops, &c. In short, a very thorough curriculum was laid out for the gardener-student; and the syllabus of the class for the session just opened will aid all who attend in acquiring a knowledge of some of the subjects indicated in the lecture. The following is the syllabus for the session:—Good and Bad Soils: the plants which grow on them naturally; the effects of cultivation on the soil and on the plant. The Introduction and "Acclimatisation" of Exotics. Vegetables, Fruits, and Flowers: the history, uses and peculiarities of varieties usually grown. A Flowering Plant: its structure and life history; conditions conducive to healthy growth; natural and artificial regeneration of soil; diseases of garden crops; methods of prevention and cure; choice of site for a garden. The Physiography and Climatology of the Garden. Landscape Gardening: its various schools. Land Surveying. The Application of Geometry, Mensuration, and Levelling in the Laying-out of Grounds. Hothouses: their design, construction, and uses; heating and ventilating. Culture of Culinary Vegetables: growing for market. Culture of Fruits: pruning, thinning, and training. Culture of Herbaceous and Pot Plants: principle of propagation; cuttings, layers, and grafts; sports. The Fertilisation of Flowers. The Reproduction of Ferns and Selaginellas. The Improvement of Plants by Hybridisation and Selection. A Review of the Progress of Horticulture. Horticulture as a Recreation. Town Gardens. School Gardens.

CHRYSANTHEMUMS ABOUT LONDON.

THE PARKS.—The London County Council have ample cause to be proud of the remarkably fine exhibitions of Chrysanthemums of the best varie-

ties which the various park superintendents have provided for the delectation of the masses this autumn. As evidence of the interest which the people take in these displays, it is worthy of mention that in the respective parks in which the shows were ready—Battersea and Southwark, especially—the houses were literally crammed during Sunday last, several thousands of persons visiting each place. Higher reward for the County Council, or those whose skill has furnished these charming exhibitions, could hardly be conceived. How truly in flower-love do we find that one touch of Nature which makes the whole world kin.

Finsbury Park.—Visitors to this northern lung of the metropolis, alighting at the railway station, will do well to take a tram to the upper gates, as the Chrysanthemum-house is near that inlet. This is a structure of 100 feet in length, and 18 feet broad, has boarded sides, and a glass roof. The plants are ranged in double-fronted fashion right down the centre, with a narrow footway on either side. Due, perhaps, to the greater elevation of Finsbury Park, Mr. Mardlin's flowers are rather earlier than elsewhere, and some few show the effects of the recent damp weather. Here the show will be at its best about the 30th. All the plants are in fine foliage, and very neatly arranged, and can hardly be less than 1500 in number. A quantity of Pompons face the slopes, and thus hide what otherwise would be unsightly pots and stems. Japanese forms are, of course, chiefly grown. These are the favourite flowers of the public, whilst there are some good incurved also. Of these the new M. A. Brahaut is finely shown, and there are also Mr. Bunn, Prince of Wales, White and Golden Beverley, Jeanne d'Arc, G. Glenny, and others. Of Japanese very good are Elaine, Avalanche, Stanstead White, Thunberg, Gorgeous, Criterion, Princess Beatrice, Mons. H. Jacotot, Mr. W. Holmes, very beautiful; James Salter, Macaulay, Eynsford White, Margot, Madame B. Pigny, Comte de Germiny, Stanstead Surprise, Mons. Tarin, generally excellent; Phœbus, Madame De Levin, Viviani Morel, M. Bredemeier, and the large Etoile de Lyon. That charming early Pompon, Madame Elise Dordan, is also exceedingly beautiful.

Victoria Park.—Here the Chrysanthemum-house is fully a mile and a half from the station of this name, and is much nearer to the Cambridge Heath Station of the Great Eastern Railway. The house is again a span 100 feet long, but fully 25 feet wide, making a fine expanse. Then the foot-way in this case runs down the centre, a straight line being of necessity kept because somewhat foolishly the heating pipes are laid low beneath the iron grating, and might almost as well for the drying of the air of the house, not be there at all. Here Mr. Gibson's able grower, Mr. Large, has marshalled, in rich array, some 2000 well-grown plants, these banks also being fronted with dwarf Pompons. In about ten days this house will make a glorious show, probably by far the best of its kind in London, for the banks of flowers slope fully 10 feet on either side. Here again the "fops," as they are tersely termed, are in the ascendant, and includes both the hirsute varieties, Mrs. Alpheus Hardy, very good, but much better still is Louis Boehmer, the pink variety, which is so much more robust. Also Etoile de Lyon, E. Molyneux, Mons. H. Jacotot, very fine, Elaine, Avalanche, Criterion, Mr. W. Holmes, Mons. Tarin, Lady Selborne, Jeanne Marty (Anemone), Joseph Mahood, Grandiflorum, Hamlet, Madame de Sévin, Stanstead Surprise, Lady Lawrence, Glorie de Bocher, rich chestnut; E. Audiguier, and Bouquet Fait. Of incurved, the best are Prince of Wales, Prince Alfred, very fine; White and Golden Beverley, Mr. Cobay, St. Patrick, Queen of England, Novelty, Lord Wolsley, and Miss Hope. Madame Elise Dordan is also very prominent here. Later, very many more fine varieties will be in bloom. The show was open only on the morning of our visit, October 20, and will keep gay for about six weeks.

Southwark Park is best reached from Deptford Road Station of the District Railway, which is about

half a mile from the site of the Chrysanthemum house. The structure is about 60 feet by 25 feet, a broad span, which enables Mr. Franshaw, who grows for Mr. Bush, the park superintendent, to group his plants in the centre and sides; so that the arrangement differs from the other park displays. Then he has also furnished some elevations and undulations in his grouping, which is in that respect also the most artistic. Generally the plants, as elsewhere, are wonderfully well leaved, and country growers, who make so much of their cultivation, would be surprised to note how, under conditions of atmosphere of the most trying kind, these London growers turn out such capital plants and blooms. Here, of Japanese varieties, Mr. W. Holmes was abundant, and very beautiful. No finer memorial to the former secretary of the National Chrysanthemum Society could have been created than is this remarkably fine variety; also good are E. Molyneux, M. Planchenau, Phœbus, Orientale, Bertier Rendatler, Mrs. J. Wright, Ada Spaulding, Telephone, Florence Piercey, Avalanche, La Triompbante, Fair Maid of Guernsey, Lady Selborne, and a rich dark variety, Mrs. C. Wheeler. Of incurved forms, excellent are Mr. Cobay, Golden Beverley, Prince of Wales, H. Shoemith, Princess of Wales, Mr. Bunn, Golden George Glenny, and Refulgens. The collection will be at its best in a week or ten days.

Battersea Park.—Somewhat less than one mile from the Battersea Park Station of the London and Brighton Railway, and located in one of the large glass-houses of the reserve garden, is the display of Chrysanthemums. The house is 120 feet long and 10 feet wide, presenting a single bank of remarkably bright-coloured flowers, though not yet at their best. The superintendent and grower have done their work well, and large numbers of visitors will see the show during the next few weeks. Although numerous announcements as to the locale of the show, and its existence, are sadly needed about the park—and are, indeed, wanting in all the parks. Here, of incurved varieties, not many yet were in bloom, the best being Mr. Bunn, Jeanne d'Arc, Mr. Cobay, Prince of Wales, and Queen of England. Of Japanese forms, Mr. W. Holmes was again very prominent, for, beyond being a beautiful flower, it is an October bloomer, also Mlle. Melanie Fabre, President Hyde, Sarah Owen, John Salter, Flamme de Punch, Mlle. Lacroix, Grandiflorum, Duke of Berwick, Ilver Fleuri, Phœbus, J. R. Pearson, M. H. Jacotot, Avalanche, and Dormillon are a few of the best fully open. Amongst Pompons, Madame Elise Dordan is here, as elsewhere, very prominent. Possibly in the grouping of so large a mass of plants, some stiffness or formality is unavoidable. It would much enhance the beauty of the collection could some variations of arrangement be introduced. Some more complete system of naming is generally desirable also, as it is evident that myriads of the working-class visitors take the keenest interest in the varieties, and like to learn their appellations.

The Inner Temple.—This year visitors to the gardens of the Inner Temple will find the autumn flower nicely accommodated in a house worthy of herself, and in which there is plenty of light—such, indeed, as is vouchsafed us at this season—and where, while we admire the beauties inside the house, the outside moisture does not trickle down the nape of our neck from innumerable crevices in the roof, as of yore. There is one improvement more which we may hope for, and that is, a stage of three or four steps, commencing at, say, 6 inches from the ground, where Mr. Newton could arrange his plants in bank-like form, if he so choose, without the need there is now of putting 8-foot high stilts on his back-row plants, and nicely-graded lower ones on the others. We may live yet to see his plants of more moderate height, and furnished with nice green leaves down to the rim of the pots. It would really not be too much to hope for now that he is our "only Chrysanthemum grower" about the Temple. The collection is rich in good novelties, of the Japanese forms chiefly; indeed,

the space at command does not admit of the presence of inferior varieties. We noted flowers of the rich chestnut-crimson coloured Edwin Molyneux, a good mid-season moderately dwarf variety; the rosy-carmine Madame J. Laing, with florets just a little twisted and inclined to incurve, it is also a dwarfish variety; Mr. W. Walter, of rich purplish-chocolate, also twisted in its florets, and with an inward inclination; the American acquisition, Ada Spaulding, lower half rose shading off to white, the upper side of the florets silvery-white—a large striking flower, it would be classed as a Japanese incurved; the silvery-rose Exposition de Troyes; Madame de Sévin, a rosy-purple reflexed Japanese; Robert Cannell, a crimson and yellow incurved flower; Condor, Mons. W. Holmes, rich chestnut-red inclining to crimson, with yellow tips to the florets—a beautiful early flower; and Jeanne Marty, Japanese Anemone. Others of merit were Louis Boehmer, Marsa, Sarah Owen, Alberic Lunden, W. Stevens, Stanstead Surprise, and Mlle. Elise Dordan, an exquisitely quilled pink Pompon which everyone should possess.

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

Floral Committee.

OCTOBER 14.—At a meeting held at the Royal Aquarium on the above date, a large number of new flowers was staged, blooms of the fine new incurved variety, M. A. Brahaut, being numerous. The Floral Committee award but one Certificate to a variety, and they select the blooms which show the highest state of development. On this occasion this fine variety was submitted by about one dozen growers, and the best blooms being those sent by Mr. H. Shoemith, Shirley, Croydon, the Certificate was awarded to him. This novelty is of the Queen type, large, full, broad-petalled, and finely incurved; the surface colour bright crimson-chestnut, with a silvery salmon-lilac on the reverse side.

Mr. William Wells, nurseryman, Earlswood, sent Kate Wells, dull red, tipped with gold, like a small reflexed bloom, and promising to make an acceptable decorative variety. Mr. C. Buck, gr. to M. R. Smith, Esq., The Warren, Hayes Common, sent a sport from the Japanese Carew Underwood, which the committee did not think to be sufficiently distinct from that variety. Mr. C. Cox, The Grange, Beckendon, Hertford, sent Japanese Jules Toussaint, reddish orange-brown, with silvery reverse, in the way of Madame C. Audiguier; and Japanese Secrétaire Général Cassagneau, a large blush variety—pretty, but inclined to be a flower a little coarse. From Mr. E. Rowbottom came the new American Japanese W. Tricker, delicate rose—a large, full, well-incurved flower, of great beauty, a kind of pale Mons. Freeman, yet quite distinct (First-class Certificate). Mr. P. Blair, The Gardens, Trentham, Staffordshire, sent six very fine and beautifully-finished blooms of Bouquet de Dame, a large and full flower in the way of Avalanche, but distinct from that variety, and of a pure white (First-class Certificate).

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, sent a number of new varieties, including Hetty Dean, a white sport from President Hyde, and resembling a white Cullingfordii; Japanese Madame de Croisilles, orange-cerise and crimson; M. J. Moulins, bright rosy-red—very pretty in colour, thread-like petals, distinct, very free (Commended as a decorative variety); Pompon M. A. Herlant, small, orange-brown—very compact; M. Ulrich Brunner, a bright claret-coloured Japanese, flushed with crimson, Commended for its colour, being very bright and effective; and Madame Greame, a small white Japanese.

Messrs. H. Cannell & Sons, nurserymen, Swanley, had M. R. Bahaunt, W. Tricker, M. Harry Laing (Japanese), lilac-pink, very bright, compact flowers; Rose Laing, wine-crimson, tipped with gold; Miss Stevens, a bluish-pink Japanese, Certificated some time ago; Elliott F. Shephard, Japanese, a very fine broad-petalled yellow, commended for its colour; and Madame Mezdard, a fine delicate blush Japanese—Commended.

Mr. C. Beckett, The Gardens, Aldenham House, Elstree, sent two very fine and distinct Japanese, viz., Edwin Beckett, a very fine deep yellow variety,

of great substance and finish; and Miss E. Beckett, a very fine, pure white flower, broad in the petal, and of handsome shape; both awarded First-class Certificates.

From Mr. N. Davis, Lilford Road Nursery, Camberwell, came Pompon Souvenir de Leonie Ferie, deep golden-buff, very handsome (First-class Certificate); and Pompon Vicomte Cliquot, which opens orange-red, and turns to a bright golden-buff, very handsome (First-class Certificate). Mr. R. Owen, Floral Nursery, Maidenhead, also had this variety in fine condition, and was awarded a First-class Certificate also. Mr. Owen, in addition, staged a number of new varieties, including reflexed Superbum, a golden Madame Desgranges, Japanese G. C. Schwabe, in the way of Bertier Rendatler; J. A. Nicholson, a promising cerise-coloured variety, which the Committee requested to see again, as well as Australia, deep gold, broad petalled; and Goldmine, apricot gold, which was a decorative variety, the Committee wished to see a plant of this again.

Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, had double Begonias, Laing's Picotee, white, with a Picotee edge of bright carmine; and Mrs. R. Dean, deep rose, both awarded First-class Certificates; and the same award was made to Mr. M. Pritchard, Riverslea Nursery, Southbourne, Hants, for *Shortia galacifolia*, with very handsome claret-coloured foliage; and *Veronica cypripodioides*, a small compact growing hardy evergreen species, well adapted for rockwork.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE Fifth Anniversary Dinner of this society took place at the Cannon Street Hotel on the 15th inst., H. J. Veitch, Esq., presiding, in the unavoidable absence of Mr. George Dickson, who was prevented from being present through domestic affliction. Among the principal guests were Messrs. N. Sherwood, W. H. Protheroe, Ryder, A. Veitch, J. Laing, T. Maunings, H. Turner, Firze, J. Cheal, Baker, &c. In proposing the toast of the evening, "The United Horticultural Provident and Benefit Society," the chairman alluded to the death of Mr. E. R. Cutler, the last chairman, and also of the appointed chairman, Mr. Cavendish, and he was sure the sympathy of all present would go out to Mr. George Dickson under the affliction he was experiencing. He stated that the society was founded in 1865, Messrs. Rhodes, Heale, and Baker being the founders. Mr. Cole, who was very early associated with the society, was present that evening, and Messrs. Joseph Wheeler and James George, two of the trustees; and though associated so long with the society, not one of them had ever received anything from its funds. The progress of the society had been quiet, but it had done good and select work. In 1885, the annual dinner was instituted, and that was the means of calling attention to the society, and gaining accessions of members. In 1883 there were scarcely 100 members, and a very few honorary members; in 1887 there were 213 ordinary and 12 honorary members; and at the present time they had 410 members and 53 honorary ones. As many as 69 had joined during the present year; the largest number that had ever joined in one year. Members were admitted between the ages of 18 and 25; there were two scales of subscriptions—one of 3*d.* per week, 16*s.* per week being allowed in sickness; and 6*d.* per week, the sum of 10*s.* 6*d.* being the allowance in sickness. Sick members received full pay for a period of 26 weeks, and half-pay for the same time if they continued ill. To show the value of the Benevolent Fund, he might say that the Committee had voted the sum of £20 to a member who had been ill a year, to start him in a small business. After enlarging upon the benefits members received from being connected with the Society, the chairman said its business was transacted at a cost of only £50 annually, and this included £20 paid to the secretary. He thought it to be the most economically administered society of its kind. The chairman brought his speech to a close by announcing that Mr. Geo. Dickson had sent a donation of £10 10*s.* from his firm, and would become a honorary member; also that Messrs. W. H. Protheroe, Ryder, and H. J. Cutbush would become honorary members also; Mr. Nathan Cole replied on behalf of the Society. In proposing the honorary and life members, Mr. J. Hudson, the treasurer, gave some interesting details, showing the prosperous condition of the Society.

In proposing the health of the chairman, Mr. N. Sherwood, after paying a high tribute to the interest shown by Mr. Veitch and his firm in the charitable

societies connected with gardeners, alluded to the convalescent fund for providing a convalescent home at some sea-side place, said he would subscribe a sum of £15 to the fund, and make three members of his family annual subscribers of 1 guinea each per annum.

The Chairman had a most gratifying reception when he rose to respond to the toast of his health, and said that what he was, was owing entirely to the admirable training he received under his grandfather and father. He would follow the example of Mr. Sherwood, and subscribe the sum of £25 to the Convalescent Fund, having no children of his own to make members.

The toast of "the kindred societies," proposed by Mr. R. Dean, was responded to by Mr. G. J. Ingram, the Secretary of the Gardeners' Royal Benevolent Institution. The tables were charmingly decorated by Mr. J. R. Chard, and an excellent dessert was provided by members of the Society and others.

MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL.

OCT. 20.—Manchester has done well in providing in her magnificent Town Hall a show of hardy fruits worthy of her best horticultural traditions. It does seem as if a great portion of the kingdom had been laid under contribution in order to provide illustrations for the Fruit Conference to be held to-day and to-morrow.

There were Apples and Pears from North Yorkshire, Durham, Lancashire, Cheshire, and Derbyshire; from Herefordshire, Worcestershire, Somersetshire, Sussex, Berks, Middlesex, Bucks, and, not least, Kent, and so the Manchester folk were able to see fruit from all the best fruit-growing districts of the kingdom. The Queen was also represented, by Mr. Thomas sending from Frogmore 250 dishes of superb Apples and Pears, including some seedlings. A like number of dishes were sent by Messrs. James Veitch & Sons, of Chelsea, from their nurseries at Slough and Fulham; and these, with a collection of some eighty dishes from Dicksons, Limited, Chester, filled the spacious reception-room. In the ante-room were collections from Messrs. Caldwell & Sons, nurserymen, Knutsford, and Mr. Watkins, Pomona Farm, Withington, Hereford, who sent a collection of Cider Apples.

Across the corridor is the Town Hall, and here were set forth the competitive classes. Broad stages running down the centre, and lining the sides, were laden with Apples, Pears, and Grapes; in front of the orchestra Mr. Samuel Barlow, Stakehill, had a line of small bush Apples on the Paradise stock, such as one could easily carry in their hand, but all bearing fruit from three or four to seven and eight; and in front of these was a line of superb Grapes, with plates of Tomatos forming a front line.

Messrs. R. Smith & Co., Worcester, had a large collection of Apples and Pears, and Mr. W. Crump, Madresfield Court, sent some very fine Pears and Apples, the latter richly coloured. Mr. J. Clarke, Albion Nursery, Farnham, Surrey, had a collection of well coloured Grapes grown under glass without fire-heat. Alicante, Lady Downes, Muscat of Alexandria, Gros Maroc, &c., for these an extra prize was awarded the exhibitor.

The best collection of eighty dishes was from Messrs. G. Bunyard & Co., Maidstone. They were splendid, the best collection we have seen set up this season. Mr. J. Watkins took the 2nd prize with a very good collection also, and Messrs. J. Cheal & Son, Nurserymen, Crawley, the 3rd.

Mr. J. Watkins took the 1st prize with fifty dishes of Pears, and had the following in fine character, Doyenné Boussoch, Conseiller de la Cour, Pitmaston Duchess, Flemish Beauty, Clapp's Favourite, Beurré Baltet père, Beurré Diel, Marie Louise d'Uccle, Beurré d'Ézée, said by some to be the same as Brockworth Park. Vicar of Winkfield Duchesse d'Angoulême, Beurré Bosc, Louise Bonne of Jersey, Fovelle, Jersey Gratioli, Autumn Bergamot, &c. Mr. J. H. Goodacre, The Gardens, Elvaston Castle, Derby, was 2nd with a highly meritorious collection, he had a very fine dish of Williams' Bon Chrétien, Beurré Hardy, Easter Beurré, Glou Morceau, Souvenir du Congrès, General Todleben, Van Mons' Leon la Clere, Marie Louise, &c. Messrs. Geo. Bunyard & Co. were 3rd.

The only collection in the open class for eighty dishes of Apples and Pears grown under glass, a very interesting one, came from Messrs. J. Cheal & Son, They staged fifty dishes of Pears and thirty of Apples.

In the amateur classes there was a remarkably good competition. The class for thirty-six dishes of Apples brought seven collections, and Mr. G. Reynolds, gr. to Messrs. De Rothschild, Gunnersbury Park, Acton, was 1st, with a perfect lot of Apples, in fine condition, and exceedingly bright, though a little more colour would have added effectiveness; he had splendid fruit of Mère de Mönage, Lord Derby, Hollandbury, Stirling Castle, Emperor Alexander, Tower of Glamis, Blenheim Orange, Warner's King, Annie Elizabeth, Dumelow's Seedling, Frogmore Prolific, Waltham Abbey Seedling, Lane's Prince Albert, Gravenstein, Scarlet Nonpareil, &c. Mr. J. H. Goodacre was 2nd, with a fine collection of much the same sorts; and Mr. S. T. Wright, gr. to C. L. Campbell, Esq., Glewston Court, Hereford, was 3rd.

Mr. Wright came in 1st with eighteen dishes, having some of the finest kinds for which Glewston Court is famous, and Mr. T. Parker, gr. to Mr. Evans, Moreton Court, Hereford, was 2nd. In the class for twelve dishes of Pears, in which there were eight entries, Mr. G. Goldsmith, gr. to Sir E. G. Loder, Leonardslee, Horsham, was 1st with Catillac, Pitmaston Duchess, General Todleben, Doyenné du Comice, Doyenné Boussoch, Marie Louise, Beurré Bachelier, Duchesse d'Angoulême, Beurré Diel, Marie Louise d'Uccle, &c. Mr. W. H. Bannister, gr. to W. Vincent Ames, Esq., Westbury-on-Trym, was 2nd also with very fine fruit.

In the class for thirty-six dishes of Apples and Pears grown under glass, Mr. J. Hunter, gr. to the Earl of Durham, Lambton Castle, was 1st with a fine collection, but some of the fruit so changed in character that it is difficult to recognise the varieties; Mr. J. McIndoe, gr. to Sir J. W. Pease, Bart., M.P., Hutton Hall, Guisborough, was 2nd; and Mr. Samuel Barlow, 3rd.

Three classes for Apples and Pears grown in the open, within 20 miles of Manchester, had a certain amount of interest for local planters, though the radius appeared to be a wide one. Mr. A. W. Jones, Marbury Hall Gardens, Cheshire, had the best twenty-four dishes; Mr. H. W. Browne, gr. to C. Sherwin, Esq., Ashley Hall, Altrincham, the best twelve dishes of Apples; while Mr. A. W. Jones came in with twelve Pears. Some good fruit was shown in these classes, but many are quite green, showing how the incidence of the season had retarded ripening.

Grapes were a very fine feature, and Mr. J. H. Goodacre took the 1st prize with ten bunches; he had superbly finished bunches of Muscat of Alexandria, two of Gros Colmar, grandly coloured; one each of Alwick Seedling and Muscat Hamburgh, and two of very fine black Alicantes. Mr. Geo. Reynolds took the 2nd prize with a good collection, he had Muscat of Alexandria, Gros Maroc, Alicante, Black Hamburgh, and Chasselas Napoleon, which looked like a late Buckland Sweetwater. Mr. Wright had the best three bunches of black, staging fine Alicante; Mr. J. Read, gr. to the Earl of Carnarvon, Bretby, Burton-on-Trent, came 2nd with Gros Colmar.

Tomatos were well shown in a class for six dishes. Mr. McIndoe showed some varieties of Citron and Plums; and Mr. A. J. Harwood, Colchester, had fruiting sprays of the Colchester Black Bullace, a valuable late variety, to which a Certificate of Merit was awarded.

FRUIT CONFERENCE.

The Fruit Conference was held in the Mayor's parlour, and was well attended by horticulturists generally, and by some of the more influential citizens of Manchester. The Mayor opened the proceedings by introducing, in a few well-chosen sentences, the Right Hon. the Earl of Derby. Lord Derby, in the course of his opening remarks, referred to the great social and economical importance the fruit industry had. He looked upon it as giving some little help to the depressed state of agriculture. It was everybody's interest, and the landlord's particularly, to give all such schemes, which were not of an Utopian character, a helping hand. Thousands of acres of land were unsaleable in England, and even on many lands that were rented at exceptionally low rates, the farmer had more difficulty in paying than on land of higher value more favourably situated. This state of things arose from four causes—(1), the increased facilities given to foreign nations to compete with our home produce; (2), the demand of the worker of the soil for a higher rate of wages; (3), the growing impatience of farmers and other commercial men for larger returns, and the desire to speculate in other commodities; (4), the tendency growing slowly, but surely, of the moneyed people to invest in less risky

things to yield them an adequate return. It might be asked, he said, why Manchester had been selected as the centre of a great movement, when all round about it the land was so unsuitable for yielding fruit crops. Many other counties of England grew better crops of Apples, and Pears, and Plums, and consequently it could only be because of its central position, and mainly because of the energy of the Botanical Society, who left no stone unturned to press fruit-growing as a commercial speculation before all interested people. Moreover, the demand for fruit was largely on the increase, particularly in all large towns. As to the prices realised, there was a considerable difference of opinion. Soil and climate must exercise their influence, and those who had orchards in the more favourite spots of England profited the most. In quoting from what his lordship said had been told him by one of the largest fruit farmers in Kent, he instanced Strawberries as realising a gross return of £27 per acre, or a nett profit of between £6 and £7; Currants realised £30 per acre gross, with a profit of £10 per acre; and Apples and Pears realised £25 per acre, with a nett profit of £5 per acre. But here, as his lordship pointed out, there was no return for five years after planting, which reduced the nett profits to a very small margin. Before, therefore, the fruit farmer could count upon his profits, he had to discount bad years, and bad sales when the market was glutted. He had been told that in Kent, even this season, the Plums did not realise the price of gathering and sending to market. He did not think that any landowner would throw obstacles in the way of fruit culture now—it was a little different twenty-five years ago, when land brought a much higher price, and was eagerly taken by tenants. As to the size of holdings much must depend upon the fruit tenants themselves what they have to spend upon, then it ought to be spent judiciously, and a full knowledge obtained of the best trees for the district, and how to cultivate and look after them. He rather thought the larger-sized holdings would come best out of the experiment, as they would be going on wholesale lines and have a competent staff to make the most of things. The smaller growers who grew for profit would, he feared, be in a measure handicapped, because he must pay the day labourers their hire, but they could not count upon a money-yielding crop. The great vicissitudes caused by weather, insects, and other troubles, many a time reduced the prospective income, and there could only be one end to the long continuance of such adverse circumstances. He looked with fear on borrowed money in an investment of this kind, because the rent had not only to be paid but the mortgages as well. It appeared to him where landlords were able to do it, it would be much the best plan for them to stock the orchards, charging a minimum rate of interest to likely tenants. He did not see there was need for much other legislation on the subject, as the bill that was passed, and looked into with severe scrutiny by both Houses of Parliament gave ample provision for the tenant to secure a fair remuneration for any improvements in the soil, or in any way about the tenancy. He counselled a definite understanding between parties when any lease was entered into, as the best of all means of keeping down heartburnings and dissatisfaction. Good fruit was wanted everywhere, and although these Conferences, and the papers read at them, would do an immense amount of good, there was nothing to beat hard-and-fast practice, and if practical schools were formed in the principal districts over the country, and intending fruit cultivators were to take adequate advantage of them, we should soon see something like a profitable outcome from it, because the scholars would be taught the value of soils and climate, and make their selection from the best working and most profitable Apples and Pears in commerce.

His Lordship then introduced Mr. Baillie, of Chester, who read a paper on the "Present Day Features and Prospects of the Fruit Growing Movement."

Mr. Baillie, after a few introductory remarks, said that he would deal principally with the distribution question. He said that the demand for fruit was largely on the increase, and yet it had not come within the daily food of the million. He attributed the obstruction in the way of cheaper Apples to the intervention of the middleman, the high railway rates, and so on. But he could not shut his eyes to the inferior quality of many parcels of fruit that were sent by fruit-growers to the market. It was neither picked, or cleaned, or carefully packed, and hence people at large would not buy. Their money went for foreign produce, and

therefore millions were lost to the country. He thought that a Government grant should be given to be used for fruit-gardens, either through Local Boards or County Councils, and that an inspector should be appointed to visit all infected districts, such as exists in Tasmania. He thought, also, that fruit farmers should sell by sample in the various marts, and deliver the goods as a farmer does his cereals. He also counselled the reduction of sorts; he would rather have eight good sorts than eighty, and he would recommend a succession from August to August.

Mr. Baillie agreed with Mr. Gladstone that a great commercial void was too apparent, and that something was needed of an educative character to press the matter before the general public. Under the new Technical Instruction Act he would have lectures in various places on such subjects as—how plants are fed; choice of site and preparation of the soil; kinds of fruit for different districts; pointing out the pests and parasites that are the bane of culture, and how to get them under. He recommended the leaflet issued by the Royal Horticultural Society as one that all interested in fruit farming should read.

Mr. Bruce Findlay made some observations bearing upon the paper just read. He particularly animadverted on the spent trees which were grown in many localities which were not cultivated at all, and pointed out that until growers were fully alive to the finer fruit needed, no success could be achieved.

Mr. Crump Madresfield then read his paper on "The mode of Budding and Grafting and Growing general Fruit trees for Estate plantation and for small holdings." It was only some twelve years ago since he began this sort of work, encouraged by his employer, Earl Beauchamp, and the amount of fruit grown by the industrious people on the estate was something to be proud of. He gave a thoroughly practical essay on how to manage Apples, Pears, and Plums, scouted the idea of root pruning, would have all young trees with their tap roots taken up, and instead of cross-cutting them would lay them flat in a horizontal position. In this way the trees grew better. He would not root-prune any tree at all. What he would do, by way of checking growth, was to raise the trees, and replant them, particularly those in stiff clayey soils. He looked upon the crab seedling as the best sort to graft upon; he thought that these dwarfing stocks, such as Paradise, was like working with a cripple. He grew a lot of dwarf standards as being the best to plant in the grass, and he recommended planting dwarf ones among the Hops. There is no doubt that when noblemen take up this nursery rearing of fruit trees, they are doing a vast amount of good, and, as Mr. Crump said, it did not interfere with the ordinary business of the trade, as many people seeing how the labourers managed, took to the culture as a pastime, and had their reward in good eatable fruit.

Mr. J. F. Rivers read a paper on "Orchard House Culture," dealing mainly with the growth of Peaches in pots. He had his paper illustrated with several photos, showing how plants of the kind grew under the treatment which they received. It was something, he held out, to have good Peaches in succession from 1st July to the end of October. He also touched upon other fruits, such as Pears and Cherries, and said they were beautiful objects to look upon—so much so in fact as to entice tom-tits to play havoc among them unless they were protected with netting.

Lord Derby spoke to the value of the papers that had been read, although he was not practical enough to express an opinion upon them. He said that it had been clearly established that (1) there was an increasing demand for hardy fruits, (2) that much that had in past years been imported might be grown at home, (3) that quality versus quantity should be the order of the day, and (4) that unfruitful trees of too great age and of inferior quality should be cut down and fresh plantations made.

SALE OF THE LAKE HOUSE ORCHIDS, & C—The collection of G. NEVILLE WYATT, Esq., at Cheltenham, most of the rare specimens in which were so admirably grown by Mr. SIMCOE, passed under the hammer at Mr. J. C. STEVENS' Sale Rooms, 38, King Street, Covent Garden, on Wednesday and Thursday, October 21 and 22, and realised good prices. The highest price on Wednesday—50 guineas was paid for a healthy plant of *Oncidium orthorhynchum album*. The plant was purchased from Messrs. B. S. WILLIAMS & SON, for 25 guineas, and so it stands in evidence that a good and rare plant if properly treated does not lose in value. Other prices realised

were 10 guineas for *Oncidium incurvum album*, *Cymbidium affine*, 8 guineas; *C. eburneum*, 4½ guineas; *Anthurium Scherzerianum*, Lake House, var., 9 guineas; *Lycaste Skinnerii alba*, £5 10s.; *Angulosa Ruckerii sanguinea*, £9 and £5; *Odoatoglossum Uro-Skinnerii*, £9 10s.; *O. ramosissimum*, £6; several *O. Alexandrae* at £4 to £5 each; *O. luteo-purpureum crispatum*, £5; *Laelia Wyattiana*, £3 10s.; *L. Pilcheri*, £3; *Cattleya Exoniensis*, 15 guineas. Of the books sold on the same occasion, WILLIAMS' *Orchid Album*, 9 vols., realised £11 10s.; the *Reichenbachia* up to date, £8 10s.; WARNER'S *Select Orchidaceous Plants*, 2 vols., 5 guineas; *A Monograph of the Genus Lilium*, 7 parts, 5 guineas.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.				
	ACCUMULATED.				Inches.	Total fall since Jan. 4, 1891.	Percentage of possible duration for the Week.	Percentage of possible duration since Jan. 4, 1891.			
	Above (+) or below (−) the Mean for the week ending October 17.	Above 42° for the Week.	Below 42° for the Week.	Day-deg.					Day-deg.		
1	+	35	0	+ 222	+ 64	7	132	11.0	21	27	
2	0	aver	37	4	− 25	+ 91	5	143	23.7	33	31
3	+	49	0	− 60	+ 86	3	138	18.8	30	29	
4	+	66	0	− 61	+ 116	3	145	19.7	40	34	
5	0	aver	48	2	− 87	+ 99	9	145	22.7	32	32
6	+	77	0	− 78	+ 13	13	141	23.9	36	37	
7	+	18	0	+ 124	+ 3	10	157	33.9	29	33	
8	0	aver	18	0	+ 64	+ 30	10	141	27.0	27	10
9	−	57	0	− 89	+ 113	17	149	32.1	33	38	
10	−	34	3	+ 73	+ 28	2	154	24.3	30	31	
11	−	41	0	+ 21	+ 27	14	156	29.5	35	34	
12	+	90	0	+ 6	+ 40	9	148	26.6	19	45	

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.; 7, Principal Grazing, &c., District—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending October 17, is furnished from the Meteorological Office:—

"The weather has been extremely stormy and unsettled in all parts of the Kingdom, with heavy falls of rain in nearly all districts, and occasional thunder and lightning. Towards the end of the week the conditions improved somewhat, and some fine clear intervals were experienced.

"The temperature has been a little below the mean over Ireland and the south-west of England; but, about equal to the normal, or rather above it elsewhere; in England, S. there has been an excess of 3°. The highest of the maxima, which were registered on irregular dates, ranged from 64° in 'Scotland, W.' and 'England, S.W.', to 57° in 'Ireland, N.' The lowest of the minima were generally recorded either on the 13th or 17th, and ranged from 32° in 'Scotland, E.', 'England S.W.', and 'Ireland, N.', to 39° in 'England, S. and N.W.', and to 46° in the 'Channel Islands.'

"The rainfall has been more than the mean in all districts. In most instances the fall has been about twice as much as the normal, while in 'England, S.' it has amounted to nearly three times as much.

"The bright sunshine has been rather more than the mean in most districts. The percentage of the possible amount of duration varied from 49 in the 'Channel Islands,' and 40 in 'England, E.', to between 27 and 30 in most of the northern and north-western districts, and to 21 in 'Scotland, N.'

MARKETS.

COVENT GARDEN, October 22.

TRADE slow, with shorter supplies. James Webber, Wholesale Apple Market.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table listing various cut flowers such as Asters, Carnations, Chrysanthemums, and their prices per bunch or dozen.

ORCHID-BLOOM IN VARIETY.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing various plants in pots like Adiantums, Aralias, Aspidistra, and their prices per dozen.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table listing various fruits like Apples, Grapes, Kent Cobs, and their prices per case or sieve.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing various vegetables like Artichokes, Beans, Beet, Carrots, and their prices per bunch or lb.

POTATOS.

In consequence of heavy rains and gales the supply continues short of the demand, and consequently best samples command advance in prices.

NOTICES TO CORRESPONDENTS.

BOOKS: Chemistry of Soils. Sir H. Roscoe's Books, the elementary and the larger work are both excellent ones.

BOUNDARY FENCE: Boundary. The outer edge of your neighbour's ditch marks probably the line dividing the properties.

CORRECTION: CRYSTAL PALACE FRUIT SHOW, Oct. 8, 9, and 10. We are requested to state that the winner of the Bunyard Prize for 3 dishes of Pears, was Mr. R. Silk, gr. to Jas. Abernethy, Esq., Margate, not Mr. W. A. Cook, Compton.

INSECTS: W. R. J. S. The small grubs sent, which, in July, attacked your seedling Sweetbriars, completely destroying the whole crop, just below the surface of the earth, and eating round the tap-root, and also causing the loss of about half a million of one-year seedling Scotch Firs, are the immature larvae of one of the small species of Cock-chaffers (Melolonthidæ).

MUSCAT OF ALEXANDRIA ON A TREBBIANO STOCK: Subscriber. The union of the two varieties would answer in so far as the one would grow well on the other, but the flavour of the Muscat might possibly be unfavourably affected in a slight degree.

NAMES OF FRUITS: Bywater. 1, Duchesse d'Angoulême; 2, Baronne de Mell; 3, Beurré de Capiaumont; 4, Maréchal de la Cour; 5, Louise Bonne of Jersey; 6, Alexandre Lambre.—S. Pick. Not Red Hawthornden; not quite sure of name.—An Old Subscriber. 1, Bellissime d'Hiver; 2, not recognised.—W. W. J. and S. Your Apple is quite unknown to us.—C. K. 1, New Hawthornden; Maréchal de la Cour.—Notts. New Northern Greening.—J. B. Leiston.—1, Beurré Diel; 2, not recognised; 3, Duchesse d'Angoulême; 4, Bedfordshire Foundling; 5, Sturmer Pippin; 6, Dumelow's Seedling.—F. M. 1, Marie Louise; 2, Bergamote d'Espéren; 3, 4, Louise Bonne of Jersey; 5, Hambledon Deux-aus; 6, Cellini.—W. T. 1, Columbia; 2, not known; 3, Bergamote d'Espéren; 4, Huyshéa Victoria; 5, Knight's Monarch. Plum quite decayed.—J. Stocks. 1, Cellini; 2, Shepherd's Newington; 3, Rymer; 4, Yorkshire Beauty; 5, Rymer; 6, not known.—B. G. 1, Swan's Egg; 3, New Hawthornden; 4, Old English Codlin; 5, Court of Wick; Beurré Hardy.—Pontypool. Urbaniste.—M. J. 1, Jalousie de Fontenay; 2, Emille d'Heyst; 3, General Todtleben; 4, Comte de Lamy; 5, Comte de Flandres; 6, Beurré Sterckmans.—H. T. 1, Red Winter Calville; 2, Souvenir du Congrès; 3, Old Russet; 4, Maréchal de la Cour; 5, Beurré Clairgeau; 6, Duchesse d'Angoulême.—Stranger. Apple highly coloured, left at our office, Emperor Alexander.

NAMES OF PLANTS: Chelsea. Physalis Alkekengi, the bladder Cherry. A hardy herbaceous perennial.—L. & G. 1 and 3, varieties of Oncidium micropogon; 2, Oncidium ornithorhynchum; a white form of which has just been sold at an auction sale at Stevens' for 50 guineas.—A. A. Next week.—N. T. 1, Asplenium bifforme; 2, Cheilanthes ledegeria; 3, Athyrium filix-femina; 4, Polystichum angulare var. proliferum; 5, Pteris longifolia; 6, Microlepia hirsuta var. cristata.—A. M. 1, Statice, probably latifolia; 2, Cassia corymbosa.—C. E. F. Cyclamen Coum.—Request. 1, missing; 2, Dracaena hybrida; 3, Nephrodium molle; 4, Dracaena marginata; 5, Xylophylla angustifolia.—P. B. Your fungi arrived in a rotten condition, with the labels detached; 5, is a Clavaria.—Rock. Viburnum opulus.—Berried Shrub (no name of sender) Viburnum opulus, Wild Guedres Rose.—J. S. Lilium nepalense, see figure in Gardeners' Chronicle, October 13, 1888.—J. H. 1, Pyrus japonica; 2, Phygellus capensis; 3, Escallonia rubra.—W. F. 1 and 2 forms of Pyrethrum frutescens; 3, Pyrethrum Soleil d'Or.—G. P. Coccoleba platycladon.—Paddy from Cork. 1, Cupressus Lawsoniana; 2, Bignonia radicans; 3, Desfontainia spinosa; 4, Adamia cyanea; 5, Leycesteria formosa; 6, Sedum spectabile.—E. P. A Ceropogia, or allied plant, which we will endeavour to name by next week.

PRIMULA JAPONICA: J. H. The grubs are those of a weevil, which is very destructive. Scatter some brewers grains about or some slices of Carrot, and so trap them; but it is rather a hopeless task.

WALNUTS: E. E. Risien, Sans Saba, Texas. The writer of the article in question resides at 16, Whittingstall Road, Fulham, London, S.W.

WORMS ON A LAWN: A. L. Mix water and quicklime together in the proportion of 3 gals. of the former to 1 lb. of the latter. After letting it stand for two days, pour off the clear water and apply it to your lawn, preferable in moist weather. The worms will come to the surface, and must then be swept up. It should be remembered that worms are the natural drainers and manurers of Grass land; and, if they are wholly destroyed, and the soil be of a heavy nature, the lawn will not be so dry on the surface as formerly.

COMMUNICATIONS RECEIVED.—H. E. Sars.—E. & F. Spratt.—H. J. V.—F. M.—M. Godefroy, Paris.—M. Krelage, Haarlem.—J. W.—C. C.—M. L. Maserell, Ghent.—H. C.—J. A.—H. E.—A. Russell (next week).—D. M.—M. E. M.—W. E. D.—Herbert & Co.—W. Roupell, Surveyors' Institute.—J. D.—J. O'B.—J. Masse.—Pioneer.—J. B.—A. Outram.—J. Blagoey.—W. K.—W. N.—A. Douglas.—A. P.—J. S.—J. T. N.—R. T. F.—A. G.—P. R. D.—A. H.—G. J.—O. W. G.—G. S. T.—J. F.—J. Hood, junior (thanks for the account of the meeting; it will probably appear in our next issue).—T. W.—C. P. & Co.—A. G.—F. T.—H. S.—G. J.—Pomona.—Scottie.—J. S.—W. P.—J. B. T.—E. Pearce.—Thomson.—G. S.—G. W.—W. R. G.—A. F.—E. R.—W. C. V. P.—D. F. S.

DIED.—On the 16th inst., at Beddington House, Surrey, ALEXANDER HENRY BRIDGES, Rector of Beddington, and Hon. Canon of Winchester, in his 80th year.

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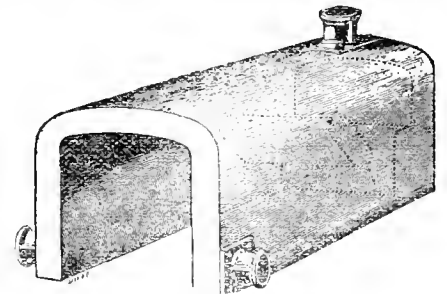
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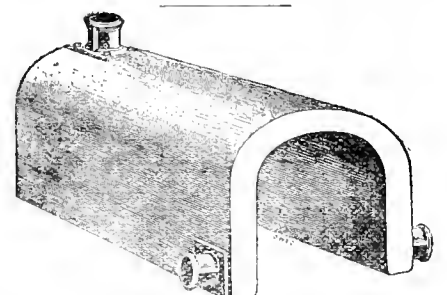
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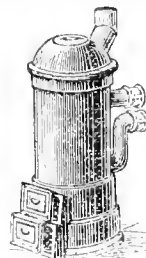
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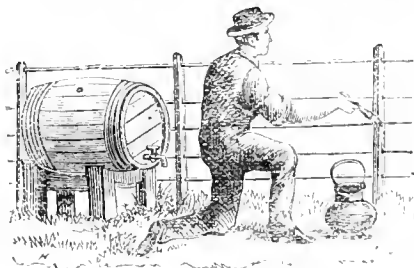
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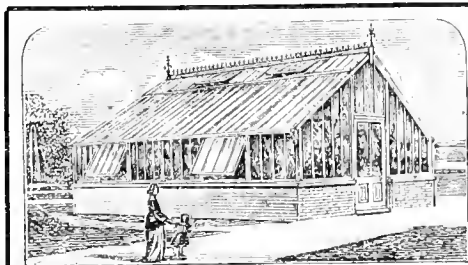
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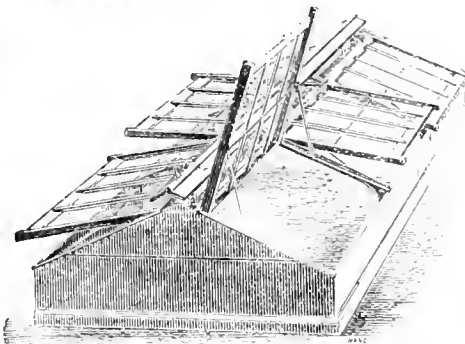
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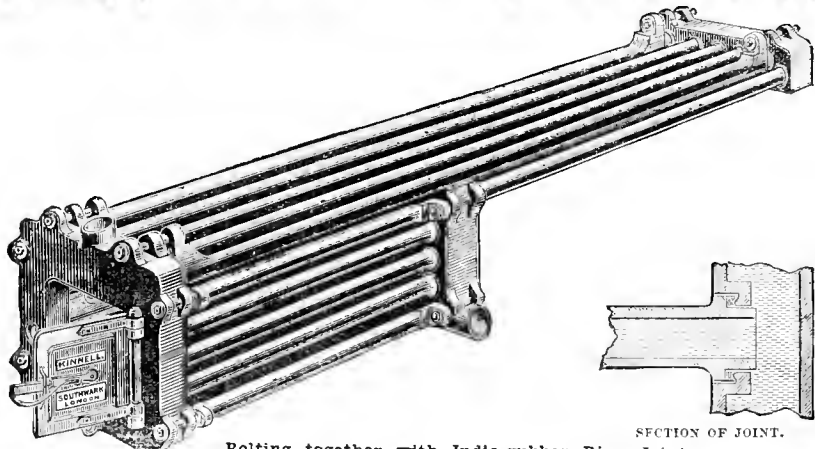
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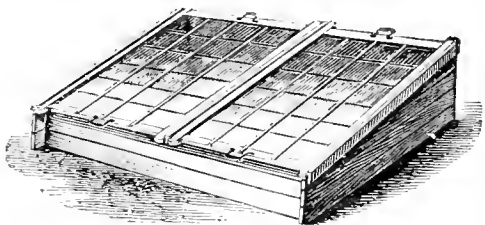
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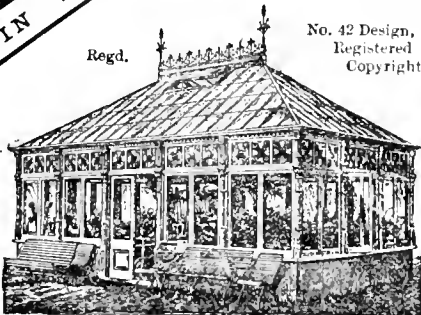
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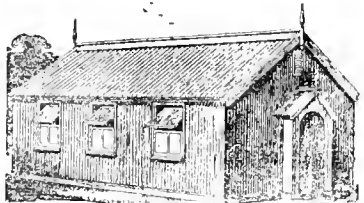
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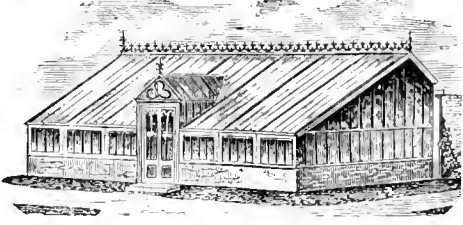
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Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

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AT THE

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GRAMMATOPHYLLUM SEEGERIANUM.

ALSO THE FOLLOWING:—

SOBRALIA MACRANTHA KIENASTIANA, pure white
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LELIA PERRINI ALBA (not NIVEA). First-class Certificate, Royal Horticultural Society.
CATTLEYA INTERMEDIA ALBA.
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TRICHOPILIA SUAVIS ALBA.
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LELIA AUTUMNALIS ALBA.

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ODONTOGLOSSUM NEBULOSUM ALBUM.
ZYGOPETALUM MACKAYI ALBUM.
SOBRALIA LEUCOXANTHA GRANDIFLORA (ALBA).
VANDA STANGIANA, grandest Specimen in Europe.
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The whole, with a few exceptions only, will be offered **ENTIRELY WITHOUT RESERVE**, in order to make room for new importations due to arrive soon, this course being necessary, as owing to a short tenure of the premises, it is not possible to increase the house accommodation.

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The GARDENERS' CHRONICLE

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100 Bulbs, in 12 choice named sorts ... 25s. 6d.
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DICKSON AND ROBINSON'S CATALOGUE, specifies all the best varieties in first-size Bulbs at moderate prices. Post free.
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The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
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To Nurserymen.
WANTED, in or near Hammersmith, ACCOMMODATION for several POT VINES, with attention to same.
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CHINESE FAIRY LILIES.
Special Low Prices for Quantities, on application to the Original Importers—
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RASPBERRY CANES, best varieties, 35s. per 1000; sample 100, 5s., free on Rail. Wisbech P.O.O. with Order to Manager.
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GEO. JACKMAN AND SON, Woking Nursery, Woking. Established 1810. Area, 150 Acres.

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BERLIN LILY OF THE VALLEY for Forcing, best quality only. First importation of half a million in November. Price 35s. per 1000, 4s. per 100. Order early off—
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Cheaper than Ever.
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T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
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FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,
CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Tuesday Next.

TOTTENHAM, N.

The Hale Farm Nurseries, adjoining the Tottenham Hale Station, Great Eastern Railway.

GREAT ANNUAL SALE.

Immense Quantities of NURSERY STOCK, by order of Mr. THOMAS S. WARE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above,

On TUESDAY NEXT, November 3,

At 11 o'clock punctually, in consequence of there being upwards of 1500 lots, immense quantities of exceptionally well grown NURSERY STOCK, as previously advertised. Amongst the principal items, the following may be mentioned:—

- 30,000 Named CARNATIONS and PICOTEES, comprising all the finest varieties.
- 10,000 HOLLYHOCKS, 10,000 PYRETHRUMS, 25,000 CLEMATIS, and others, fine and strong plants.
- 2500 AMPELOPSIS VEITCHII, 6000 HEDERAS, of sorts, 5000 LILIES, &c., including extraordinarily fine home-grown sorts of the best varieties; choice named NARCISSUS, IRIS, and others.
- 50,000 Berlin CROWNS of LILY OF THE VALLEY, fine forcing crowns, all the true German variety.
- 5000 SPIREA COMPACTA, MULTIFLORA. All-o thousands of the common variety.
- 3000 CHRISTMAS ROSES, Large Forcing Clumps, full of flower-buds.
- 10,000 Forcing Plants and Bulbs.
- 100,000 SEAKALE and ASPARAGUS, Exceptionally fine ROSES.

50,000 PERENNIALS

Also ROSES, ORNAMENTAL TREES, and SHRUBS, in great variety.

The attention of the Trade and Private Buyers is particularly invited to this important Annual Sale. The Catalogues are now ready, and will be found to contain one of the most varied and extensive Stocks ever submitted to Public Auction. Copies will be forwarded on application to Mr. T. S. WARE, on the Premises; or to the Auctioneers and Valuers, 67 and 68, Cheap-side, London, E.C.

NOTE.—The Auctioneers will be pleased to purchase any lots for those who cannot attend the Sale, and Mr. Ware will undertake to pack and forward purchases to all parts of the kingdom.

Tuesday next.—Japanese Lilies.

The first consignment this season, consisting of 100 cases, and comprising,

- 4400 LILIUM AURATUM, including about 300 extra large Bulbs;
- 1600 LILIUM SPECIOSUM RUBRUM and ALBUM;
- 1000 LILIUM LONGIFLORUM.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will include the above important consignment of JAPANESE LILIES in their SALE by AUCTION, at the Rooms, 67 and 68, Cheap-side, E.C., on TUESDAY NEXT, November 3, at 11.30 o'clock precisely. On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Great Unreserved Sales.

EVERY MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Rooms, 67 and 68, Cheap-side, London, E.C., FIVE DAYS WEEKLY, as above, at half-past 11 o'clock each day, LARGE CONSIGNMENTS of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from HOLLAND. Lot to suit the Trade and Private Buyers. On view morning of Sale, and Catalogues had.

Wednesday Next.

200 AZALEA INDICA and 100 CAMELLIAS, selected varieties; and 100 AZALEA MOLLIS, from one of the best growers in Belgium.

MESSRS. PROTHEROE AND MORRIS will include the above consignment of plants in their SALE on WEDNESDAY NEXT.

On view morning of Sale, and Catalogues had.

Wednesday Next.

80,000 KENTIA SEEDS in grand condition.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE, on WEDNESDAY NEXT, November 4.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL, on FRIDAY, November 6, by order of Mr. F. Sander,

CYMBIDIUM BICOLOR, a most beautiful

CYMBIDIUM, from Ceylon.

Also a BURLINGTONIA SPECIES, of promising appearance, from a new district.

Also a fine lot of DENDROBIUM MCCARTHLAE.

Also a CYPRIPEDIUM SPECIES, from a new district in Java, long green leaves upwards of 2 feet in length.

And quantities of other ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.

SANDER

Has just received 1000 grand Plants of the

OLD LABIATA,

Among them being 100 enormous specimens.

The masses are truly astonishing and marvellous, some of them over 6 feet in circumference.

ENORMOUS BULBS,

COLLOSAL LEAVES,

TITANIC SHEATHS.

EVERY PLANT IS WARRANTED TRUE.

"THE OLD LABIATA."

Re-discovery of the supposed long-extinguished OLD AUTUMN-FLOWERING TYPICAL CATTLEYA LABIATA.

All the Plants have double sheaths, some green, others red; flower seats, four, five, and six. This is Lindley's original Labiata.

CATTLEYA LABIATA (LINDLEY).

From Swainson's hunting grounds. This Plant was first introduced by Swainson in 1818, and he actually used its stems in packing his Lichens for transport. When first seen in flower by Dr. Lindley it created a sensation, and he named it in honour of Mr. W. Cattley, of Banet, the foremost Orchid amateur of his time.

"It is the Queen of Cattleyas, We guarantee it true."

The Plants are in magnificent order and condition. They could not possibly be finer.

"The easiest Cattleya grown, The freest-flowering Cattleya known, The varieties are endless."

CATTLEYA LABIATA (LINDLEY).

Was discovered by W. Swainson in 1817, and since that year several small consignments have arrived in Europe. In about 1830, Mr. Horsfall, of Liverpool, received some through a captain of one of his ships. Again, in about 1845, some plants came to Europe, and in 1852 Mr. Bartlett, of the Zoological Gardens, London, received a small consignment, and he disposed of it to Mr. R. S. Williams, of Upper Holloway, and two years ago a gentleman in Paris received an importation. The full history of the Plant will shortly appear in the "Reichenbachia." We have succeeded in securing the quantity offered, and the whole in grand health, and just received.

The old Labiata is a free-doing Cattleya, and makes rapid growth, and is unequal for cut flower purposes and grandeur of variety as a selling plant.

The above will be SOLD by AUCTION by

MESSRS. PROTHEROE AND MORRIS at their Central Sale Rooms, 67 and 68, Cheap-side, London, E.C., on FRIDAY NEXT, November 6, 1891, at half-past 12 o'clock, together with other new valuable ORCHIDS. On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL on FRIDAY, November 6, by order of Mr. F. Sander, CAPASETUMS of various kinds from the Rio Pinto Mountains, the home of Swainson's OLD LABIATA.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL on November 6, by order of Mr. F. Sander, EPIDENDRUM WATSONII (provisionally named). A distinct and remarkable plant, another introduction from the home of the old Labiata. The plant is provisionally named in honour of Mr. Watson, of Kew, who was much struck with the appearance of the plants.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL, on FRIDAY, November 6, by order of Mr. F. Sander, A. SCHOMBURGKIA, from the woods of the old Labiata.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL, on FRIDAY, November 6, by order of Mr. F. Sander, A NEW VANDA, VANDA O'BRIENIANA. Preserved flowers of which will be on view.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL, on FRIDAY, November 6, by order of Mr. F. Sander, TWO DISTINCT-LOOKING EPIDENDRUMS from Swainson's hunting ground. One of which greatly resembles in appearance EPIDENDRUM RANDII.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL, on FRIDAY, November 6, by order of Mr. F. Sander, DENDROBIUM RICHARDII, a most beautiful Dendrobe, of stately habit and easy culture. Flowers dark yellow with crimson lip. See dried flowers.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY, November 6, by order of Mr. F. Sander,

VANDA ROBERTSIANA, NEW, flowers white and chocolate, striped and spotted crimson.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL, on FRIDAY, November 6, by order of Mr. F. Sander, A DENDROBIUM, like Lælia anceps Sanderaana; flowers large, pure white, with a crimson lip.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL, on FRIDAY, November 6, by order of Mr. F. Sander, a magnificent importation of a CATTLEYA from the Rio Pinto—found with the OLD LABIATA—the plants are not unlike C. Schobelliana in growth, but the sepals and petals are said to be white, while the lip is crimson. This description Mr. F. Sander believes to be correct.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE, on FRIDAY NEXT, 100 DISA SPATHULATA,

a most extraordinary species, with white, blue, and rose flowers. The lip is a wonderful development, consisting of a long slender stalk, with a tri-lobed blade at the tip, resembling an old-fashioned spear. The tubers are true, having been collected in flower.

100 DISA FLEXUOSA.

An elegant species, never before imported. Sepals pure white, lip and petals rich golden-yellow.

Also DISA POLYGONOIDES, orange-scarlet; D. RACEMOSA, crimson; D. LONGICORNU, the broad-leaved large blue Disa; DISPERIS CAPENSIS, rose to purple, offered for the first time; and various other DISAS, SATYRIUMS, and other CAPE TERRESTRIAL ORCHIDS.

On view morning of Sale, and Catalogues had.

Hampton, Middlesex.—Absolutely without Reserve. THREE DAYS' CLEARANCE SALE, by order of Messrs. Mahood & Son, the ground having to be cleared for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Tangley Park Nursery, Buckingham Estate, Hampton, within a mile of Hampton Station on WEDNESDAY, November 4, and two following days, at 12 o'clock each day, the whole of the exceptionally well-grown and thriving NURSERY STOCK, recently transplanted, and comprising 6000 Standard and Pyramid Apples, Pears, and Plums, 3000 Standard Victoria Plums, fruiting trees, 5000 Maiden Apples, Pears, and Plums, 600 Cupressus lutea, 3 to 4 feet; 2000 Cupressus, 4 to 5 feet; 2000 Standard Roses, and 3000 Dwarf Roses, all leading varieties; 2000 English Yews, 300 Golden Privet, 3000 Common, Portugal, and other Laurels, 2000 yards Box Edging, 5000 Standard Limes, 10 to 12 feet, splendid trees with straight stems; Thorns in variety, and other Ornamental Trees, a large assortment of Conifers and Evergreens in the borders, 1½ to 3 feet; Weymouth Pines, 5 to 6 feet; large Laurels (recently moved), and other Stock.

May now be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Cliffe, near Rochester and Gravesend.

Adjoining Cliffe Station, S.E. Railway. THIRD GREAT ANNUAL TRADE SALE OF FRUIT TREES, by order of Mr. W. Horne.

IMPORTANT to NURSERYMEN, FRUIT GROWERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester, on FRIDAY, November 6, at 11 o'clock, 100,000 FRUIT TREES,

comprising 30,000 Apples, Pears, Plums, and Cherries, including 1000 of the new desert Apple, Beauty of Bath; 50,000 Baldwin Black Currants, 5,000 Red Currants, 15,000 Gooseberries, Bobs, Lads, and Whichams, 5,000 Carter's and Norwich Wonder Raspberries, 5,000 John Ruskin Strawberries, new (Royal on Noble), 100,000 Laxton's Noble, and 50,000 Sir Joseph Paxton, 20,000 Gannover's Colossal Asparagus, 50,000 Myatt's Cabbage Plants, 50,000 Drumhead, &c. Every lot must be sold to make room for others.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheap-side, London, E.C.

Fulham, S.W.

UNRESERVED CLEARANCE SALE OF GLASS ERECTIONS, PIPING, PLANTS, and UTENSILS, by order of T. Hoodless, Esq., the ground being required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Dorset Cottage, near the "Crab Tree," Fulham Palace Road, S.W., on WEDNESDAY, November 11, at 12 o'clock, without reserve, the whole of the well-grown GREENHOUSE PLANTS, including 20 large CAMELLIAS, in pots and boxes; 240 AZALEAS, mostly white; 2000 FERNS, 1000 CHRYSANTHEMUMS, 300 CARNATIONS, 1400 GERANIUMS, 500 ROSES in pots, ORCHIDS for cutting, AZALEA MOLLIS, SHRUBS, the erections of 12 GREENHOUSE BOULERS, 3000 feet of 4-inch HOT-WATER PIPING Brickwork BOULERS, 17 One and Two Light FRAMES, GARDEN TILES, FLOWER-POTS, Slate SLABS, and TANKS, the erections of GROTTOS and large FOUNTAIN, several VASES and PEDESTALS, useful HORSE, SPRING MARKET VAN, and other Effects.

May be viewed day prior to and morning of Sale, Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, E.C.

Dutch Bulbs. Dutch Bulbs. SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half-past 12 o'clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving Weekly from well-known Farms in Holland.

Wednesday Next. 400 Choice-named Standard and Dwarf ROSES, CONIFERS, HARDY EVERGREENS, LILACS, &c. CARNATIONS, PINKS, PICOEES, fine CLIMBING ROSES in pots, 100 pots of ADIANTUM CUNEATUM, DAFFODILS, CYCLAMEN PERSCICA, AZALEA MOLLIS from Ghent, Berlin, LILY OF THE VALLEY Crowns, SPIRÆA JAPONICA, LILIUM HARRISI, L. CANDIDUM, L. AURATUM, AMARYLLIS species, &c.

MR. J. C. STEVENS will include the above in his SALE, by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY next, November 4.

Thursday Next. SPECIAL SALE OF DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 5, at half-past 12 o'clock precisely, a very extensive IMPORTATION of BULBS from HOLLAND, just received in splendid condition, and specially lotted to suit all Buyers.

Thursday Next. LAKE HOUSE, CHELTENHAM.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises, as above, on THURSDAY NEXT, November 5, at half-past 12 o'clock precisely, a COLLECTION of STOVE and GREENHOUSE PLANTS, formed by the late G. Neville Wyatt, Esq., consisting of well-grown specimens of Anthurium Andreanum, A. Scherzerianum, Dracaena, Stephanotis floribunda, Palms, Gloxinias, Exhibition Specimens and Half-specimen Azaleas, comprising very choice varieties which have won prizes annually at the Cheltenham Shows. Also a few choice Orchids, &c.

WANTED, in London suburbs, within 8 miles from the Bank, and in a good locality for trade, a SMALL NURSERY BUSINESS, with about 1 to 2 acres of LAND, position in which Seeds, Cut Flowers, &c., could be done preferred; only offers with full particulars will be noticed. CERES, Gardeners' Chronicle Office, 41, Wellington St., W.C.

WANTED, TO RENT, a SMALL NURSERY, with DWELLING-HOUSE. Good frontage. Provincial town preferred. BRUNSWICK, 58, Quentin Road, Lee, S.E.

WANTED, TO RENT, a SMALL NURSERY.—Four or five Glass-houses. With good frontage to main road. Handy for Town.—E. C. T. Gardeners' Chronicle Office, 41, Wellington St., Strand, W.C.

WANTED TO LEASE, a GLASS NURSERY, for the Cultivation of Fruit, not smaller than 5 Acres.—A. B., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

TO FLORISTS.—Four ACRES of LAND, to LET on LEASE, with option of purchase. No better land could be obtained. Rent £12 per Acre. No tithe. Enfield Highway, about nine miles from London, and near Railway Station.—Apply to Mr. H. MOORE, 59, Bishopsgate Street Within, E.C.

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EXHIBITIONS.

CRYSTAL PALACE, GRAND CHRYSANTHEMUM SHOW, FRIDAY and SATURDAY, NOVEMBER 6 and 7. Schedules and Entry Forms on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

Entries close on Friday, October 30. KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

President: G. C. SHERKARD, Esq., J.P. The FIFTEENTH ANNUAL GRAND EXHIBITION will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 10 and 11, 1891, when, in addition to valuable Money Prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be again competed for. Schedules, and any information, may be had from the Hon. Sec., MR. GEORGE WOODGATE, Warren House Gardens, Kingston Hill, Surrey. Entries close on November 6.

LEEDS PAXTON SOCIETY'S THIRD CHRYSANTHEMUM SHOW will be held in the Town Hall on TUESDAY and WEDNESDAY, November 10 and 11, when upwards of £170 will be offered in Prizes, including Two Valuable Silver Challenge Cups. Entries close November 3. JOSH. SMITH, Hon. Sec. Asket Hill, Roundhay, Leeds.

THE BATH CHRYSANTHEMUM SHOW. —November 11 and 12, 1891. Entries close Nov. 6. For Prize Schedules apply to B. R. F. PEARSON (Secs. 2, Northumberland Bldgs., Bath, W. JEFFERY {Secs.

NATIONAL CHRYSANTHEMUM SOCIETY, ROYAL AQUARIUM, WESTMINSTER. GREAT AUTUMN EXHIBITION and FESTIVAL, TUESDAY, WEDNESDAY, and THURSDAY, Nov. 10, 11, & 12. Chrysanthemums, Table Decorations, Fruit, and Vegetables. Many valuable special Prizes of great interest. Schedules of Prizes and all particulars of—RICHARD DEAN, Secretary and Superintendent, 42, Ranelagh Road, Ealing, London, W.

TIVERTON CHRYSANTHEMUM, FRUIT, and FLOWER SHOW. The NEXT EXHIBITION will be held on THURSDAY, November 12. For Schedules, apply to the Hon. Sec., R. P. COSWAY, Tiverton, Devon.

SHEFFIELD, HALLAMSHIRE, and WEST RIDING UNITED CHRYSANTHEMUM SOCIETY. ANNUAL SHOW, Corn Exchange, Sheffield, Nov. 13 & 14, 1891. Upwards of £200 in Prizes, Medals, &c. Schedules free on application. WM. HOUSLEY, Sec.

YORK CHRYSANTHEMUM SHOW.—The TWELFTH ANNUAL SHOW in the Fine Art Exhibition Building will be held on NOVEMBER 18, 19, and 20, 1891. £150 offered in PRIZES, in liberal proportion, for Plants, Cut Flowers, Fruit and Vegetables. Entries close November 11. Schedules may be had from the Secretary, J. LAZENDY, 13, Feasegate, York.

RUGBY CHRYSANTHEMUM EXHIBITION. NOVEMBER 18 and 19, 1891. Entries close November 11. Schedules from 19, Oliver Street. WILLIAM BRYANT, Sec.

SCOTTISH HORTICULTURAL ASSOCIATION. GRAND CHRYSANTHEMUM EXHIBITION. NOVEMBER 19, 20, and 21. Schedules and all particulars on application to the Secretary, ROBERT LAIRD, 17, South Frederick Street, Edinburgh.

CAUTION.—In the Court of Session, Scotland. SUTTON and SONS v. BAXTER.—NOTICE IS HEREBY GIVEN, that the Court has granted a PERPETUAL INJUNCTION, with costs, against the defendants, Messrs. John Baxter & Sons, Printers and Publishers, Edinburgh, restraining them from infringing the Copyright of Illustrated Catalogues published by Messrs. Sutton & Sons, Seed Merchants, Reading. The defendants allege that they bought the electrotype illustrations from A. Blanc, engraver, of Philadelphia, U.S.A. As numerous infringements of the illustrations in Messrs. Sutton & Sons' several Catalogues have been made, they give Notice to all engravers, printers, seedsmen, and other persons, not to print, publish, or circulate any illustrations copied from their copyright catalogues, and that legal proceedings will be taken against any person infringing their rights. Dated this October 23, 1891. PLUNKETT and LEADER, 60, St. Paul's Churchyard, London, E.C., Solicitors for Messrs. Sutton & Sons.

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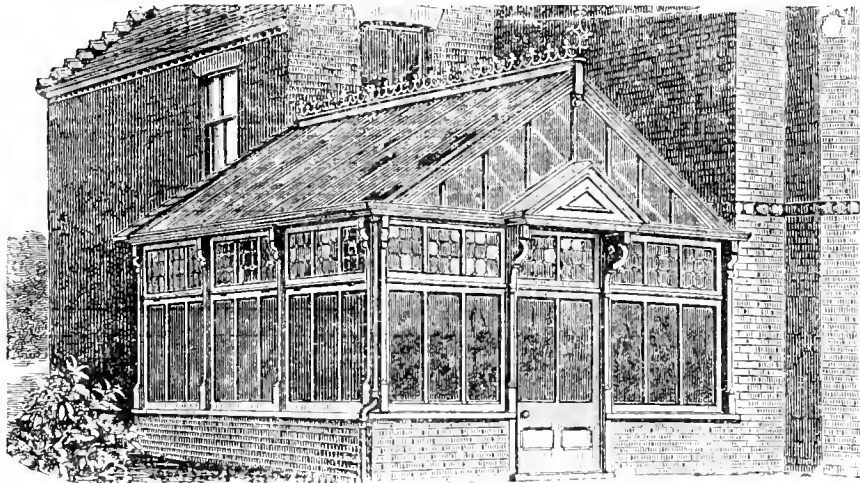
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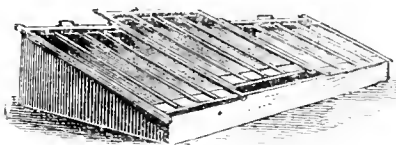
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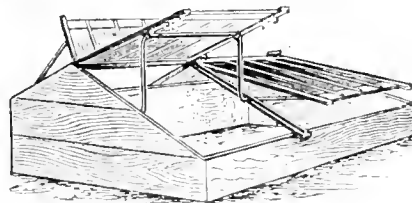
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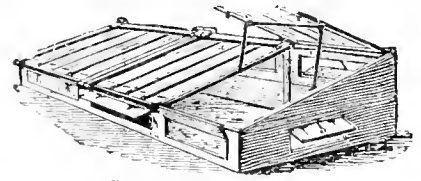
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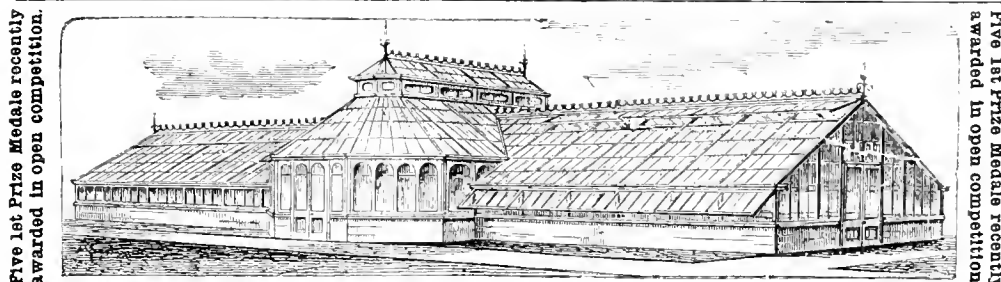
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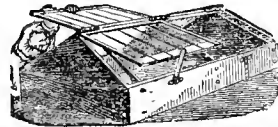
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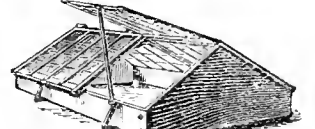


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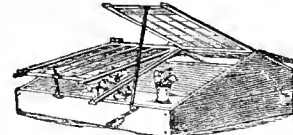
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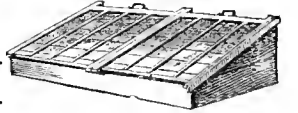


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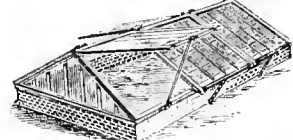


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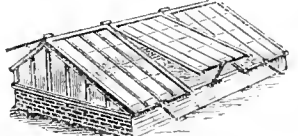


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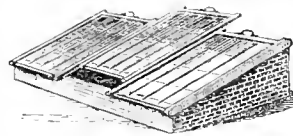
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Four Certificates of Merit, Royal Botanic Society's Exhibition, April 22, 1891.*

JAMES VEITCH & SONS

Beg to direct special attention to this **STERLING NOVELTY** :—

THIS beautiful new race of **STREPTOCARPUS** originated at the Royal Gardens, Kew where Mr. Watson crossed *S. Rexii* and *S. parviflorus* with *S. Dunnii*, and raised several charming new varieties.

From the numerous complimentary letters which reach us respecting the very satisfactory results obtained from the seed distributed last season, and the favourable comments of the Horticultural Press, we feel sure that these hybrids have a splendid future. The results of last year's work upon these has been to give us larger and more expanded flowers, and a considerably increased proportion of the rarer and the brighter colours, particularly among the rose, rosy-purple, reddish, and magenta shades; and from the seed now offered, which has been further hybridised, many entirely new and striking varieties may be confidently expected.

The plant is a greenhouse perennial, of dwarf, neat habit, growing about 9 inches high, with rather long, narrow, arched and recurved stemless leaves.

These new hybrids are remarkable for their abundance of bloom, and the continuous succession in which the flowers are produced for about four months in the summer and early autumn, and also for the long time the individual flowers last in perfection.

The flowers, which are very graceful in form, are trumpet-shaped, widely open, and slightly recurved at the mouth, and measure about 1½ inch in length. They are generally produced in a horizontal or semi-upright position, thus displaying their full beauty.

The variation of colours in these new hybrids is very striking, scarcely two plants being exactly the same, and the colours range from pure white, through pale lavender, lavender-blue, lilac-blue, light mauve, purple, violet, bright rose, and red to rich rosy-purple, with all the intermediate tints, and in all the flowers the throat and three lower segments are more or less marked or splashed with long blotches or spots of various shades of purple, generally shaded and relieved with white, which greatly enhances the effect, and affords a pleasing contrast of colour.

If seed is sown the end of January and February, the plants come into bloom the following June and July, and continue flowering freely until the end of September and October.

Per Packet, 2s. 6d.

PRICE TO THE TRADE ON APPLICATION.



The above illustration is taken from the photograph of a plant growing in our Chelsea Nursery.

ROYAL EXOTIC NURSERY, CHELSEA, LONDON.

ODONTOGLOSSUM CRISPUM ALEXANDRÆ.

BEST (PADRO) VARIETY.

GUILLERMO KALBREYER begs to offer the above well-known and justly-prized Orchid at the following prices, free on board of Royal Mail Company's steamers, at Savanilla :—£40 per 1000 good and healthy pieces.

G. K. also can supply :—

ODONTOGLOSSUM LUTEO-PURPUREUM,
" **CUSPIDATUM PLATIGLOSSUM,**
£36 per 1000.

CATTELYA TRIANÆ. £8 per case.
" **SCHRÆDERII,** £10 per case.
Each case contains about sixty good and strong pieces.

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--- The best time for dispatching Orchids from here are the months—December to April, and July to October.

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AMONG THEM BEING

100 ENORMOUS SPECIMENS.

The masses are truly astonishing and marvellous, some of them over 6 feet in circumference.

ENORMOUS BULBS,

COLOSSAL LEAVES,

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They will be SOLD on FRIDAY NEXT, November 6, at

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An INSPECTION of these IMPORTED PLANTS, and also of some 5000 Plants which arrived some time ago, are now in sheath, and which will flower shortly, is cordially invited at St. Albans previous to the Sale.

EVERY PLANT IS WARRANTED TRUE.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 31, 1891.

ON TREES AND SHRUBS IN
LARGE TOWNS.

THEIR SELECTION AND CULTIVATION.

THE desirability of planting trees, more or less, in and around our large towns is, I think, now universally admitted. The contention that the introduction of trees occupies space already overcrowded, impedes the circulation of the air, and minimises the light of heaven, will not bear the test of examination. No sane person would advocate the planting of every square yard of ground in a town or city, nor would he recommend planting so closely as to shut out the light or impede the circulation of the air. One great fact in favour of the practice is, I think, the influence of active tree life in purifying the air, and rendering it healthier and more suitable for human consumption.

It would seem, then, that the practice can be upheld on the grounds of utility alone, but the sum and substance of human life are not bounded even by that comprehensive word utility; within its just limits, too, there is the shade and shelter to enjoy, the eye to please, and the mind to exercise and soothe, and what is more likely to attain these ends than the introduction of beautiful trees, with their varied leaves and flowers, amid the dingy and monotonous masses of town buildings. It has always seemed to me that the introduction of trees to towns should be regarded by the inhabitants as a forecast of work in the interests of health and enjoyment, and they may be so managed as not to interfere with convenience or comfort either in the present or the future.

The subject seems fairly open to discussion under the following heads:—1, What to plant; 2, The selection of individual trees; and 3, How to plant and cultivate them.

1. With regard to "what to plant," we have but little to guide us beyond the knowledge derived from observation and experience. We know that certain trees flourish in certain towns—take the Plane tree in London as an example—whereas another tree, similar in appearance to the ordinary observer, languishes, and a third quickly dies. I have never yet met with a complete solution of this problem, nor am I prepared to offer one. I can only suggest probable causes. We know that some trees thrive best in a heavy soil, some in a light one; some in a dry soil, some in a moist or wet one; some like a warm climate, some a cold one. We know that trees derive their nourishment partly from the soil through their roots, and partly from the air through their leaves—trees breathe and perspire

through their leaves. The leaves are furnished with numerous pores or openings on both their surfaces, through which the functions of breathing and perspiring are carried on. These openings vary in size and number in different species of trees and plants. This variation may probably account in some measure for certain trees sustaining better than others the effects of living and breathing in an impure atmosphere. Again, it may be that the digestive organs of some are stronger, or less unfavourably influenced than others by bad air. And here I would remark that by bad air I do not mean simply fog and smoke, bad as those are, but air further polluted by the noxious gases constantly streaming into it from various chemical works which exist in most large towns. I witnessed lately a case which illustrates this remark. A row of Aucubas had flourished for years in a large town, despite of smoke and fog, but perished shortly after a manufactory of chemicals was raised near to them.

The Plane tree (*Platanus orientalis* var.) grows well in London and some other large cities and towns in England, where the Chestnut, the Larch, and others are not quite satisfactory, and where the Coniferae, with the exception of the *Pinus austriaca*, and the *Cupressus lawsoniana*, will hardly grow. But the Plane tree does not do well everywhere, which, on generalising from a number of isolated facts, would seem to be due either to soil or climate. However this may be, we cannot, in the present state of our knowledge on this subject, do better than trust to observation and experience by planting in each district those trees and plants which we know do well there.

The least observing cannot fail to have remarked that in smoky districts deciduous trees thrive better than evergreens. This is probably due to the former dropping their leaves every autumn, and renewing them every spring, which the latter do not; their leaves remain on the trees, their pores becoming choked with sediment from the air, and healthy action consequently impeded. Deciduous trees and shrubs should, therefore, abound in all town plantations.

Guided principally by observation and experience over a somewhat extended surface of country, and a lengthened period of time, I have ventured to compile the following list of trees and shrubs suitable for plantations in large towns. For the smaller towns with open surroundings, this list may be considerably extended.

Deciduous Trees exceeding 12 feet in height when full grown.

- | | |
|--|---|
| <i>Acer pseudo-platanus</i> | <i>Liriodendron tulipiferum</i> |
| " <i>purpurea</i> | <i>Ornus europaea</i> |
| " <i>dasycarpum</i> | <i>Platanus occidentalis</i> |
| " <i>macrophyllum</i> | " <i>pyramidalis</i> |
| " <i>platanoides</i> | <i>Populus alba, canadensis nova,</i> |
| <i>Ailanthus glandulosus</i> | <i>fastigiata monilifera</i> (the |
| Alms of sorts | black Italian), and a most |
| <i>Amelanchier botryopium</i> | any other |
| <i>Amygdalus communis</i> | <i>Pyrus aria</i> |
| <i>Betula alba</i> | " <i>auroparia</i> , and many |
| <i>Catalpa syriacifolia</i> | others |
| <i>Carya</i> of sorts | <i>Rhus typhina</i> |
| <i>Crataegus coccinea corallina,</i> | <i>Robonia pseudo-Acacia</i> , and |
| <i>grandiflora</i> — Paul's new | any other (a good town tree |
| double scarlet, fl. pleno (the | in sheltered places, but very |
| double pink), <i>stricta pentagyna</i> , | brittle and easily broken with |
| and almost any | the wind) |
| other free grower | <i>Subserbia adiantifolia</i> |
| <i>Cytisus Laburnum</i> | <i>Salix vitellina babylonica</i> , and |
| <i>Fagus sylvatica</i> | many other Willows |
| " <i>purpurea</i> | <i>Sophora japonica</i> |
| <i>Fraxinus excelsa</i> | <i>Tilia europaea</i> |
| " <i>pendula</i> | <i>Ulmus latifolia, stricta, mon-</i> |
| <i>Gleditsia triacanthos</i> | <i>tana</i> , and its vars <i>glabra,</i> |
| <i>Juglans regia and nigra</i> | <i>pendula</i> , and <i>vegeta</i> |
| <i>Liquidambar styraciflua</i> | |

Deciduous Flowering Shrubs under 12 feet when full-grown.

- | | |
|---|--|
| <i>Azalea</i> , in variety | <i>Philadelphus coronarius</i> , and |
| <i>Berberis vulgaris</i> , fol. <i>pur-</i> | many other varieties |
| <i>pureis</i> , and many others | <i>Rhus Cotinus</i> |
| <i>Coutea arborescens</i> | <i>Ribes sanguineum and aureum,</i> |
| <i>Cornus alba, mas</i> , and many | and many others |
| other varieties | <i>Sambucus aurea nova</i> , and |
| <i>Cydonia japonica</i> | many others |
| <i>Euonymus</i> , in variety | <i>Spiraea</i> , in variety |
| <i>Forsythia viridissima</i> | <i>Symphoricarpos racemosus,</i> |
| <i>Fuchsia Riccartoni</i> | <i>vulgaris foliis variegatis</i> |
| <i>Hibiscus syriacus</i> , in variety | <i>Syringa</i> , the <i>Lalac</i> , in variety |
| <i>Hypericum Kalmianum</i> | <i>Weigela rosea</i> , and many |
| <i>Lycasteria formosa</i> | others |
| <i>Ligustrum vulgare, variegat-</i> | <i>Viburnum opulus sterilis</i> , and |
| <i>tum</i> , and others | many others |
| <i>Louicea Ledebourii</i> | |

- Evergreens.*
- | | |
|---|---|
| <i>Aucuba</i> , in variety | <i>Mahonia japonica</i> and <i>aqui-</i> |
| <i>Berberis dulcis</i> and <i>Darwinii</i> | <i>folia</i> |
| <i>Buxus Handsworthiana</i> , and | <i>Osmanthus ilicifolius</i> , <i>O. varie-</i> |
| one or two other broad- | <i>gatus</i> , <i>O. rotundifolius</i> (good |
| leaved varieties | town plants, but very brittle, |
| <i>Cotoneaster Simonsii</i> , and | and liable to get broken by |
| others | heavy snow) |
| <i>Daphne pontica</i> | <i>Olearia Haastii</i> |
| <i>Euonymus japonicus, radicans</i> | <i>Phillyrea</i> of sorts |
| <i>variegata</i> | <i>Rhamnus Alaternus</i> |
| <i>Hypericum calycinum</i> | <i>Skimmia japonica</i> and <i>oblata</i> |
| <i>Ilex aquifolium</i> (common | <i>Viburnum tinus</i> |
| green and any other smooth- | <i>Vinca elegantissima</i> , and |
| leaved free growers) | others |
| <i>I. a. speciosa</i> (Golden Queen) | <i>Yucca</i> , any variety |
| <i>aurea pumila</i> , and some few | <i>Veronica Traversii</i> |
| others | <i>Kalmia</i> , in variety |
| <i>I. a. Silver</i> , <i>albo marginata</i> - | <i>Taxus baccata</i> , <i>Crowderii,</i> |
| and some few others | <i>elegantissima, fastigiata,</i> |
| <i>Ligustrum ovalifolium, ovali-</i> | and perhaps others |
| <i>folium variegatum</i> | Common <i>Rhododendrons</i> |
| " <i>lucidum</i> and <i>japonicum</i> | <i>Cupressus Lawsoniana</i> |
| | <i>Pinus austriaca</i> |

- Climbing Plants*
- | | |
|--|-------------------------------------|
| <i>Ampelopsis hederacea</i> | <i>Lycium europaeum</i> |
| " <i>Veitchii</i> | <i>Menispermum canadense</i> |
| <i>Clematis flammula</i> , and some | <i>Passiflora corulea</i> |
| others | <i>Periploca graeca</i> |
| <i>Hedera</i> (the Ivy), all the free- | <i>Vitis riparia</i> (sweet-scented |
| growing sorts | Vine) |
| <i>Jasminum officinale</i> | <i>W. Paul, Waltham Cross.</i> |

(To be continued.)



FIG. 67.—THE SEED VESSEL OF ARISTOLOCHIA ELEGANS, WITH SEEDS.

ARISTOLOCHIA ELEGANS.

In 1885 (September 5, p. 301), we had the pleasure of describing for the first time, and of illustrating, a new species of *Aristolochia*, introduced by Mr. Bull, and which is now a general favourite for conservatory decoration, being attractive alike in colour and form and destitute of the offensive odour common to its fellows. In order to render our story complete, we add an illustration of the seed-vessel as sent by Mr. Burbidge. It is of a dark brown colour, and the seeds have a narrow wing. For the rest, the drawing tells its own tale.

TREES AND SHRUBS.

SOPHORA JAPONICA.

This fine species was introduced from China in 1763, and although it has proved itself to be hardy even in the north of England, it is rarely seen in gardens. The *Sophora* forms a large-headed tree of 50 feet high, with wide spreading branches, pinnate

leaves of a rich glossy green, and pea-shaped creamy-white flowers borne very freely in terminal panicles which last three weeks in perfection. It will grow in almost all kinds of soils and position, but preference should be given to open and sunny spots. It is a capital tree for town planting, standing smoke well and retaining its foliage even in very dry weather, although it may not flower quite so freely as in the country. The tree retains its leaves till most others are shed. It is propagated by imported seeds obtained from the warmer parts of France. There are fine specimens at Kew and in the Oxford Botanic Garden, as well as at Fulham Palace.

SOPHORA JAPONICA PENDULA.

This is a handsome weeping half tree or big bush that is seen to the best advantage when worked on stems of *Sophora japonica*, 10 to 14 feet high. Grafting should be done in the month of March in the open air, the scions used being of the last season's growth, and well ripened, which is a very important point. Tongue-grafting will be found to answer well, although wedge-grafting is a useful and simple method, covering the grafts with the usual clay and horse-droppings mixture, or better still, with grafting wax. In three weeks or a month they must be looked over, and those that have grown should have the matting loosened, later on removing it altogether. It is an excellent water-side plant, and delights in full sunshine. H.

THE HIGHLAND AZALEA (A. PROCUMBENS).

This pretty evergreen shrub is indigenous to many of the alpine districts of Europe and North America, and in Scotland I have found it in the Braemar Highlands at an elevation of about 3000 feet above sea-level, where in many cases it grows in company with the Crowberry (*Empetrum nigrum*), Wild Thyme (*Thymus calamintha*), and other hardy mountain plants. By some botanists it is referred to the genus *Loiseleuria*, but is best known as *Azalea procumbens*. It thrives best on dry sandy soil mixed with a small quantity of peat or thoroughly decomposed organic matter; it only attains a few inches in height, and forms a dense carpet-like appearance to the surface of the ground where the plants get established. In early summer it produces its beautiful pink-coloured bell-shaped flowers in great abundance, which make a fine contrast with its bright green-coloured elliptic-shaped leaves. It is a grand plant for the embellishment of rockeries, and other places where space is but of limited extent; and now that the planting season is at hand, amateurs should keep this in view when renovating their small gardens. I need hardly say that thorough drainage is indispensable, and in cases where the soil is of a close adhesive texture, mix a little sand and thoroughly decomposed vegetable matter with the staple to give porosity. This, as well as many other evergreen shrubs, may now be planted out where they are to remain, with perfect success.

With the exception of *Azalea amœna*, most of the oriental evergreen species of this tribe of shrubs are too tender for the climate of Great Britain, and even *A. amœna* in some parts of the country requires protection. I have, however, grown this beautiful species for many years in Ireland without any protection whatever. This species grows in any ordinary texture of soil, providing it is thoroughly drained, well broken-up, and pulverised previous to planting. When well-established, they generally begin to produce their rich rosy-coloured flowers in April, and when the plants are in health they continue to produce, their pretty blossoms for a considerable space of time. The contour of this *Azalea* is that of a round-headed little bush, well furnished with leaves of a dark-green colour, which, in a great measure, render it attractive and ornamental all the year round. When planting groups of hybrid *Rhododendrons* here and there in the park or lawn, *Azalea amœna* may be introduced here and there in the first rank of plants around the margin with the most happy results. Many of the *Rhododendrons* produce their flowers about the same time as the former, and when the plants are well arranged as to size, shape,

and colour of blooms, the effect produced is one of no mean order. This Azalea is by no means a bad town plant, and it has this advantage—that with a little cultural care it can be grown as a pot plant for the embellishment of windows, halls, and greenhouses. When amateurs use the plants for this purpose, they should be careful to plunge the pots containing them into the soil after they have done flowering, where they should be allowed to remain till autumn, when they may then be lifted and placed under glass, to accelerate the formation and production of their flowers. By this mode of treatment, the plants often exhibit a complete mass of flowers by the month of January, and I need hardly say that they are highly attractive and fascinating at that particular season of the year. As a small standard shrub for the embellishment of small gardens, this pretty Azalea is highly suitable, and may be grown as such on the grass-plot, or mixed up with others, to show contrast and variety. *J. B. Webster.*

TROLLIUS—GLOBE-FLOWER.

BELONGING to the extensive natural order of Crowfoots, and being among the best of our spring-flowering perennials, these flowers should have more attention than they are generally accorded. One of the chief useful qualities of the Globe Ranunculus, as this flower is also often called, is the fact of its flowering at a period intermediate with the early spring bulbs and the general show of early summer-flowering plants. The present is the best of all seasons for increasing the stock of this, and therefore these few notes may not be deemed out of place, although the plants are not in flower at the present date. There are two methods of propagating these, either from seed, or division at the roots; both of these are best seen to at once. Seed is slow to germinate, and consequently should be sown as soon as ripe; this is the only satisfactory way of treating such subjects, as when the seed is kept for a few months after becoming well ripened, it is often from eighteen months to two years before it commences to grow. This is the case with many subjects, such as Gentians, &c.

Globe-flowers are best when transplanted into fresh ground about every third or four year, and this operation gives a splendid and seasonable opportunity for propagation by dividing the roots. They may be divided into almost any number, and if done early in autumn, they will do much better as a general rule than when left until spring before being divided or transplanted. A deep and rich soil—not too porous—is the finest compost for these very useful and pretty perennials; they love a fair amount of moisture, and, when in full growth, if the weather is at all dry, they will benefit greatly from a good root-watering. They are hungry-feeding plants, and applications of liquid manure are well repaid. The flowers of Trollius are produced upon spikes about 2 feet high, and are usually of a deep yellow or golden-orange colour. Not only are the flowers very pretty, but the whole combination of the plant is very ornamental, and forms one of the chief beauties of the herbaceous border. They are also suitable for planting-out among mixed shrubberies in the same way as Dahlias, Delphiniums, &c. Unlike the two flowers named, and many others, Globe-flowers do not need any unsightly sticks for their support, and have a far more pleasing appearance on account of this. They are among the most hardy plants we have, free-flowering, and of a vigorous constitution; they are also most useful for cut flowers, as they can be removed from the plant with long stems, a most desirable feature in all decorative work. Seed should be sown in boxes or pans, and placed in a cool frame; a good plan is to lay a shaded sheet of glass over the whole, this will be a great help in preventing evaporation, and as the seed is a long time germinating, it is well to be very careful in keeping the soil of a sufficient moistness without frequent waterings. If treated in a liberal manner, the young plants will commence to bloom during their second year, and will be in perfection during

their third and fourth seasons. There are a great number of named kinds now grown, and many differ very slightly one from another, so much so as to become confusing; in fact, some are no more than the same species under a poorer or richer mode of treatment in different localities. *A. P.*

A MONSTROUS CYPRIPEDIUM.

MESSRS. SANDER of St. Albans, obligingly forwarded us, a short time since, a shoot of a Cypripedium which had apparently tried to be a flower, as the frog tried to be an ox. In any case, the leaf had a white ground, traversed by purple streaks (see fig. 68), as in the dorsal sepal. It is an interesting case showing the essential identity of the parts of the flower and the leaves.

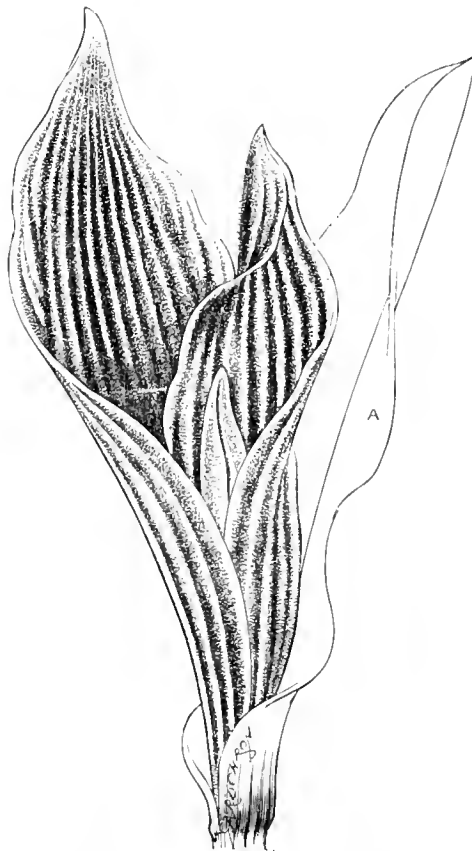


FIG. 68.—A MONSTROUS CYPRIPEDIUM: LEAVES WHITE, STREAKED WITH PURPLE.

ORCHID NOTES AND GLEANINGS.

ORCHIDS IN FLOWER AT HIGHBURY.

A VERY grand display is now to be seen in the flowering Orchid-house at Highbury, near Birmingham, which I had the pleasure of inspecting in company with the Right Hon. J. Chamberlain, the owner. Arrayed artistically with Adiantums and other fine plants, the following species and varieties were observed in bloom; the houses here are fitted with the electric light, and the effect at night is said to be charming:—

Aërides Lawrenceæ, *Barkeria elegans*, *B. spectabilis*, and *B. cyclotella*; *Cælogyne Massagiana*; *Calanthe veatrifolia*, and *C. Textorei*; *Cattleya chrysoxa*, *C. Dowiana*, *C. Dowiana aurea*, *C. maxima*, several well-flowered plants, six flowers on a spike; *C. Gaskelliana*, many distinct forms; *C. Warocqueana*, some grand and extraordinary fine forms; *C. Harriarioniana*, good; also *Cypripedium Sedeni*,

C. Schlimii, and *C. bellatulum*. Many fine and distinct forms of *Dendrobium phalaenopsis*, and *D. Statterianum*, good examples of cultivation, a charming addition to this numerous family, and grand as seen here suspended in baskets, *D. superbiens* was good; it is a species that lasts a long time in good condition. *D. biggibum* was also grand; *D. formosum giganteum*, several fine forms; *D. longicorne* and *rhodostoma*; *Dendrochilum Cobbianum*, or *Platycleris Cobbianum*; *Epidendrum vitellinum majus* (always showy); *Lælia Dayana*, *L. punila*, *L. præstans*, and *L. Perrinii*; *Lycaste nivalis*, *L. Skinneri*; *Masdevallia Davisii*, *M. amabilis*, and the fairy white-flowered *M. tovarensis*; *Mesospinidium volcanicum*, *Miltonia spectabilis*; *Oncidium aurosum*, *O. albo-violaceum*, *O. Forbesii*, grand var.; *O. incurvum*, and others; many *Odontoglossum Alexandræ*, *O. grande*, well-flowered plants, one having eight flowers on a spike, and three and four spikes on a plant—these were examples of good cultivation; *O. cirrhosum*; *O. Insleyii splendens*; *O. Rossii*, many distinct forms; *O. papilio*, and many *O. Pescatorea*, one of the latter showing particularly fine branched spikes; *Phalaenopsis violacea*, and the pretty *P. Esmeralda*, were observed. The *Pleiones* were also charmingly in flower; *Vanda cœrulea* and *V. Kimballiana*, the latter a valuable addition to this fine family, and like *V. Amesiana*, it comes into flower at a late season. All of these enumerated are now in flower, and at a later date a grand treat is in store, the innumerable quantity of sheaths upon the *Cattleyas*, *Calanthes*, *Odontoglossums*, and *Lælias*, promising a very fine display. Upwards of 200 spikes were noted on the fine white *Lælia anceps* and the beautiful white *L. autumnalis*. This collection is, I think, much improved since Mr. Burberry came to Highbury.

While on this subject, I should like to say a word respecting the much-disputed and talked-of *Cattleya Warocqueana*, that it is a grand Orchid, coming on, as it does, at this season of the year, and, like *Dendrobium Phalaenopsis Statterianum*, is a valuable addition to late-blooming species. That *Warocqueana* will vary considerably is certain from what I have seen of the Highbury collection, and of imported plants bought last year. There is in flower at the present time a fine variety of this plant with three large flowers identical in every way with the true old autumn-flowering *Cattleya labiata*, which, hitherto, has been extremely rare. *Alfred Outram, Victoria and Paradise Nurseries, Upper Holloway, London, N.*

LÆLIA PRÆSTANS.

This is a dwarf evergreen plant, which, from growing at considerable elevations, must not be placed in too high a temperature; in fact, we have observed that during the summer months the plant succeeds well in the warm end of the *Odontoglossum*-house, hung up close to the roof-glass, but shaded from the direct rays of the sun during the hottest part of the day. During the growing season, it delights in an abundant supply of water to its roots, but the drainage must be in good working order, so that it may be carried away quickly; and at the same time the atmosphere should be maintained in a moist and growing state. After blooming, water should be withheld to a great extent, but on no account must the plant be so dried as to cause it to suffer from drought, for if this occurs much mischief is done, causing it to shrivel, from which state it is frequently very difficult to get it to start into fresh growth in the following spring. During the winter, the atmosphere must be maintained in a dry state, and the temperature should not be allowed to fall below 55° or 60°. The soil should consist of good peat fibre and some sphagnum moss, adding some nodules of charcoal, but very little soil is necessary, and this should be made firm and sound. A small white scale is very apt to infest this plant, and if not cleaned away in time, it works sad mischief; so look the plant or plants over carefully and frequently, wiping away this or any other insect which may be upon them. *Orchid Album*, vol. x., part 109.

ODONTOGLOSSUM ROSSII ALBENS.

This is a small-growing evergreen plant, the flowers being wholly white, save some transverse markings of soft green. Its blooming season is in the late winter and early spring months, continuing some six weeks in full beauty; the flowers last also a considerable time when cut for personal adornment. This variety, like many of the small-growing species, thrives best when grown in a shallow pan or small basket, which should be suspended near the roof-glass, so that it may get the benefit of all the light possible, but we prefer the shallow earthenware pan before anything for these plants. The drainage should be effectual, and the best soil for the plant, or plants, is a mixture of fibrous peat, having all the finer particles shaken out, with some chopped sphagnum moss added; the whole should be well mixed, and in potting, this must be pressed down firmly. During the summer, which is their growing season, an abundant supply of water is necessary, but during the winter they may be kept comparatively dry. *Orchid Album*, vol. x., part 109.

OUTDOOR PEACHES AND NECTARINES IN SUBURBAN GARDENS.

The culture of Peaches and Nectarines in suburban gardens does not, on the whole, receive that attention which their good qualities deserve. It is very rarely we have to record a failure—in fact, I remember but one total failure since 1870, when I first came within the radius of fog and smoke. Partial crops have occurred, but these even have been few and far between. For several seasons now we have annually taken heavy crops from the trees here (Gunnorsbury), and I see no reason why, with ordinary care and attention, this should not continue to be the case during the average of our seasons. The aspect on which the trees are planted is not of the best, our wall which is devoted to these fruits facing nearly west, consequently we lose the benefit of the sunshine for the earlier part of the day. I calculate that this will make us about one week later than a south wall in ripening. This year we gathered Alexander Peach the first week in August, which was later than usual. This variety was soon followed by Hale's Early, which invariably bears well. As this kind ran out, then Rivers' Early York came into use, one large tree of which was planted in 1874, bearing this season over twenty dozen fruits of good size and colour. I find this Peach requires gathering and using before it is fully ripe, and when thus taken, the flavour is much better. It is a Peach deserving of more notice than it receives; but it is, as in the case of the ordinary Early York, not quite proof against mildew attacks. By the time this variety is over, we have Alexander Noblesse, which possesses the same good qualities as Rivers' Early York in freedom from mildew attacks. This is a handsome Peach, and an improvement upon the old Noblesse which mildews badly here; it succeeds the best in a drier season. I found this year as it ripened that it became susceptible to injury from heavy rains. Following this variety are the two fine maincrop sorts, Dymond and Grosse Mignonne; the first-named is one of the best of all with us for cropping qualities good colour, and fine flavour. Later sorts consist of Sea Eagle and Late Admirable; the first-named invariably carries heavy crops, which usually last to the middle of October in good condition. This year they will probably be later, to all appearance. Our season for Peaches is thus extended to about ten weeks, all the trees being on the west wall. Had I another lot, if but a few trees, upon a south wall, it would not be any difficulty to make it three months from start to finish. This, however, is impossible, under existing circumstances.

With Nectarines the season in our case is not so long; but, nevertheless, the results are very good. Lord Napier is the first to ripen, as a matter of course. I find this kind to do remarkably well. This year heavy crops have been taken from the trees, the fruits of good size, and well-coloured, having finished better this season than usual, which

is rather singular, considering the lack of warm weather. Elruge forms a good succession to the foregoing; this variety is closely followed by Humboldt, which is a splendid all-round Nectarine; it is a heavy cropper, the fruits being also of good size and high-coloured, whilst the flavour is excellent. This variety remains in good condition for a longer time than many kinds, which is of no small importance in prolonging the season; it this year lasted to the end of the first week in October. I have not yet tried Galopin, but I hope to do so, and thus lengthen out the season. When Mr. Rivers puts his new Seedling into commerce, then the time of gathering from outdoor trees will be lengthened out further still, this variety being considerably earlier than Lord Napier.

When the main part of our trees was first planted, I found them to grow rather too strongly, but by lifting them once, this evil was remedied. In doing this I trenched deeply, and brought up to the surface some excellent yellowish loam, which was free to a great extent of manures. The trees have done well in this, but little manure having been added since that time, and this chiefly for other crops taken from the border; the trees, in spite of heavy cropping, are still as vigorous as one could desire. In order to keep down overstrong growth, as well as to afford a little additional protection to the fruit whilst still quite young, I do not practice disbudding as early as some growers do; I find this to answer the purpose intended. Even when disbudding is performed, it is done gradually, and never to such an extent as to encourage gross growth in the remaining shoots. I find another most important point is gained by not disbudding early—it is thus of far greater immunity from attacks of aphid; this I have repeatedly noticed during several years. When a few shoots are attacked, they are removed, simply because we can afford to do without them; if, however, the trees had been thinned down so that the shoots could not be spared, then a more tedious process would have to be resorted to for its destruction. We commence to syringe the trees as early as it is in anywise safe to do so; this is done continuously every afternoon up to the time of the earliest Peaches showing colour, save when the weather is showery, and on Sundays. I consider this frequent syringing to be far better than having to resort to the use of insecticides of any kind, particularly in the earlier stages; that it is beneficial to the trees likewise, goes without saying.

When an extra heavy crop is being borne by any one tree, occasional applications of an artificial manure are given, a stimulant of quick action being decidedly preferred. The border being almost level, the rainfall penetrates to the roots instead of running off to other parts; it very rarely happens, therefore, that additional waterings have to be given, except in the driest of seasons. In a few days' time, all the trees from which the fruits have been gathered will be gone over, and the least promising wood thinned out, whilst there is yet time for that which remains to become more perfectly ripened. As soon as the leaves have nearly all fallen, the ties which hold the trees to the wires are all cut, and the shoots then bunched up together, after which the stems of the trees are slightly pressed away from the wall. This is done to obtain an opposing force when the bunched-up shoots are lightly supported by ties to the wires without touching them. The object in tying the branches is to keep the current season's wood away from the wires, for whenever it touches them the shoot is invariably killed by the contact when sharp frosts ensue. The support given is sufficient to prevent injury during heavy falls of snow. The trees are fastened to the wire just before the first flowers expand, but whilst still, in most instances, showing colour. This retards the bloom somewhat, and the prospects of loss from spring frosts is much lessened. When the tying is completed, or as soon as the first flowers begin to open, the wall is covered with three thicknesses of 1-inch meshed fish netting, which is fixed to the top of the wall, and kept away from the trees in a slanting direction by means of Bamboo stakes about 11 feet

in length. These nets afford ample protection against frosts and snow, and we do not remove them before the trees become quite green with the young shoots. After this, in ten days or a fortnight, the disbudding follows. The foliage of the trees being somewhat dense occasions a little more labour in exposing the fruit; this would not, however, be so necessary were it not that the trees, by reason of the wires not being quite close to the wall, as they should be, stand away from it, hence the fruits are not thrust forward as in the case of trees which are nailed to a wall. Our trees are rarely ever affected with canker. I think this is partly to be accounted for by not having used any excess of animal manures to produce luxuriant growth, but we depend rather on good soil as the mainstay of the trees. Other varieties than those named above would doubtless succeed, but I say, by all means, avoid those which are susceptible to mildew, when others equally good can be grown to give satisfaction. The season of out-door Peaches and Nectarines has, thanks chiefly to the many fine seedlings sent out from the Sawbridgeworth nurseries, been greatly lengthened by early and late kinds; it will pay, therefore, to give out-door Peach culture every attention. *Jas. Hudson.*

INGESTRE GARDENS,
STAFFORD.

It is always a great pleasure to me to inspect any well-kept garden, and the more so when the features of good keeping and beauty are above those of the average English garden, as at Ingestre. About the time of my visit, last August, rain had fallen in torrents for several days, and to see everything in good condition was a great treat to me. I may here remark that the indoor and outdoor departments receive equal attention. The walks were scrupulously clean, the turf like velvet, and the pleasure-grounds and kitchen garden in a state of high cultivation.

The flower garden is not large, and small shrubs are largely used in it, as edgings to beds. These shrubs are cut into suitable shapes. There are shapely Junipers, and variegated *Acer negundo*, in fine specimens, in the flower parterre and other parts of the gardens. Some of the finest Irish Yews in this country stand on an elevated spot; they are nearly 40 feet high, and as much round them. Beech, Limes, and Oaks grow to a fine size at Ingestre; and Conifers are represented by fine specimens of *Sequoia gigantea*, Canadian Spruce, Cedars, Yews, and *Retinosporas*.

Some grand young trees of species of *Pyrus* are also in the grounds, *P. sorbus* and *P. floribunda* being very fine.

The entrance from the houses to the flower garden and kitchen garden is by way of a terrace 400 yards long, on which are borders on each side of the path planted with the choicer herbaceous perennial plants, Irish Yew and creeping plants forming an arch over the path. The effect is very good when viewed from either end.

The end of this walk terminates in a conservatory 100 feet long, which was artistically arranged with fine Palms, *Dracenas*, and others having handsome foliage. In front of this conservatory is a well-kept Rose garden, where the Rose bushes were in splendid condition, Mr. Gilman being a believer in putting plenty of manure to his plants. The long range of fruit houses is close to this part of the garden, and consist of vineries and Peach-houses; the trees in the latter being excellent examples of good culture, very clean, and the wood not too abundant or crowded. The varieties of Peaches grown in the earliest division were Hale's Early, *Violette Hâtive*, and Lord Napier Nectarine, which does grandly. In the next house, in order of ripening, were Barrington, Royal George Peaches, and *Violette Hâtive* Nectarine; and the late house contained some very fine plants of Pine-apple Nectarine, Victoria, and other late varieties of the Peach. There are four vineries. In the early vinery the fruit was cleared off; but the Muscat-house and the late vineries con-

tained good bunches of Black Alicante, Alnwick Seedling, and Lady Downe's. White Tokay and Trebbiano are grown in the second vinery; and these, Madresfield, and Gros Colmar, complete the list of the varieties grown. Figs are well grown, and the trees are in splendid condition. White Marseilles and Brown Turkey are the kinds grown. Pine-apples are grown in small numbers, but Melons largely, and the Melon-houses are very light and well-ventilated structures. Mr. Gilman grows a fine green-fleshed variety, named *Ingestre Hybrid*, and the Countess, with some few others. Cucumbers and Tomatos are grown in large quantity in the same kind of house as the Melons. About 1000 Strawberry plants are forced yearly. Sir Harry and Keen's Seedling are the varieties grown, the former being much liked.

The plant houses contain fine decorative subjects, plants for house decoration being much required. Ferns are largely cultivated, as are Winter Carnations. A house full of very clean Crotons of a useful size and fine colour, and Gardenias, was observed. Palms and flowering plants of the stove were observed in several houses in robust health.

Orchids do not occupy much space at Logestre, but mention should be made of a house full of *Calanthe* and *Dendrobium*, the first-named having very strong growths, and promising well for late autumn bloom; the *Dendrobes* are also grown for decorative purposes, and stood, like the *Calanthes*, in 48-pots.

Begonias and *Bouvardias* have houses to themselves, and are well grown. A large number of *Mimulus* in pots was noticed; it is a very pretty and useful plant in the early autumn. A quantity of *Begonia nitida* and *B. manicata* are grown; and about 1000 *Chrysanthemum* plants are cultivated for the same purpose, and are excellent specimens. Fruit trees in the kitchen garden bore good crops. G. W. S.

FRUIT AT HUTTON HALL.

Those who have seen many of the principal fruit shows, especially those held at the leading places in the north of the kingdom, including Scotland, are, no doubt, well acquainted with the excellence of the fruit that for many years past has been forthcoming from this celebrated garden, and with the high position Mr. McIndoe usually attains to in the competitions. At the recent Caledonian Society's Show, he again secured first honours in the leading class of twelve dishes, for which, in addition to the handsome prize offered by the Society, he was awarded the 10-guinea Cup given by the Turner Memorial Trustees for the best collection of fruit shown in the exhibition.

A sight of the vineries at Hutton Hall a short time after the Edinburgh Exhibition gave ample evidence that they still contained quantities of splendid Grapes, both in regard to the size of their bunches and berries, as well as their general finish. In one of the large houses, which contained a number of varieties, Mrs. Pince was exceptionally fine, the bunches large, full, even in berry, and excellently coloured. Of Lady Downe's, there were large numbers of perfect examples, full-sized, and larger in the berries than this excellent winter Grape often gets. Alnwick Seedling was also in superb condition, and faultless in finish, with larger bunches than usual, and with no defective setting. Gros Guillaume (*Barbarossa*) was represented by beautiful bunches, highly coloured. Trebbiano was also noticeable. In this house there is a new Grape that promises to be a desirable one. It is a cross between Duke of Buccleuch and Gros Guillaume, and perfectly black in colour. The bunches are large, long, and moderately heavy at the shoulder; it is good in flavour, and large in berry.

In another large house, where, as in that already described, there are various sorts grown—Madresfield Court, Gros Colmar, and Black Alicante were exceptionally fine, as likewise were Duke of Buccleuch and Golden Champion. As seen here, the latter is a grand-looking Grape.

In the principal Peach-house, amongst several fine trees, there is an example of Goshawk that fills a space 40 feet by 17; the crop this year numbered 450. Golden Eagle, another Peach that is not met with everywhere, is a favourite here.

In this bleak district little can be done on open walls with the best kinds of Pears and Plums. To meet this difficulty, a selection of the best sorts is grown under glass, with highly satisfactory results both in the size and quality of the fruit, as well as in appearance.

In one of the houses there were two plants of *Lapageria*, one white, the other red-flowered, which were carrying the heaviest crop of flowers for the space which they occupied that I recollect to have seen. The red one fills a space of 12 feet by 9, and had 580 fully-expanded flowers. The white one is smaller, covering 10 feet by 9; it had 400 perfect flowers. Both the plants are fine forms of this beautiful climber. T. B.

J. H. KRELAGE.

We take the opportunity afforded us by the publication of the illustration of the new race of Darwin Tulips, to offer a portrait of one of the foremost horticulturists in Holland, or indeed of any country—of one, moreover, whose disinterested services and



MR. J. H. KRELAGE.

kindness can always be counted on. For our own part, we are glad of the opportunity of expressing our gratitude for the valuable information we have so often received in response to our inquiries.

Jacob Heinrich Krelage was born in November, 1824, at Haarlem. He was the only son of E. H. Krelage, a native of Osnabruck, Hanover, who founded the business at Haarlem in 1811—at first on a very modest scale, but soon extended his operations also to Frankfort, of which city, by marriage with Miss Fresenius, he became a free citizen, and in consequence entitled to carry on business independently of the fairs. In 1830, an eulogistic account of Mr. Krelage's nursery was given in London's *Gardeners' Magazine*, showing the extent to which even then the business was carried. Year after year further extensions were made, and in 1841 J. H. Krelage undertook the management of the Frankfort branch. In 1850 the son entered into partnership with his father, the firm being styled, as it still is, E. H. Krelage & Son. In 1855, the original founder died, leaving the subject of our sketch at the head of the establishment. The subsequent record of the firm is one long succession of extensions, royal visits, and records of successes obtained at various exhibitions in Holland and elsewhere. In 1856 the Frankfort business was given up.

The last among the more notable introductions of the firm are the Darwin Tulips, to which allusion is

made elsewhere. These originated in the collection of M. Lenglard, of Lille, which was purchased by Mr. Krelage. Mr. Krelage's knowledge of the history of bulbous plants is naturally most extensive and varied, and not only is he in personal possession of horticultural lore and experience beyond what is accorded to most people, but his library is the envy of collectors, and the delight of bibliographers.

ROSERY.

LIFTING HYBRID PERPETUAL ROSES.

A FEW practical hints to any who think of growing a few plants in pots of this section of Roses, during the next summer, may not be out of place. There could not possibly be any better time than the present for this operation. For not only are the plants quite ripe enough for lifting, but they invariably do much better when got into their pots as soon as possible after becoming a little more than two-thirds ripe or matured. By lifting them early, and giving them quite cool treatment, until early in the following spring, the plants will be getting steadily settled in the new soil, and will grow on and make fine healthy wood during next summer. When Roses are potted-up early, they commence to make new roots at once; this is not so much the case if left until December or January before being transferred to fresh soil.

Use a good and rich loamy compost, well-drained pots, and above all, do not try to hurry the plants into growth during the coming spring and summer. It is not necessary to have turf, or even turfy loam; almost any good fresh soil will grow Roses well, particularly if it is a little porous, and assisted with thoroughly decayed manure of any kind. Turf and turfy loam are excellent things, but very few are so fortunate as to have plenty of them to use for potting purposes; and, as I said previously, it is not absolutely necessary to have them to grow Roses well.

Plunge the pots in some ashes or Cocoa-nut fibre refuse, keeping the severe frost only from the wood, and prevent the wood or roots becoming dry enough to cause shrivelling. Prune back rather hard early in February, and allow the plants to come on as they like in a temperature of 50° to 55°, rising to 65° with the sun upon a bright day. Frequent syringings with clear soft water, of the same temperature as the house, or a few degrees higher, will help them very much. Do not feed with liquid manure during their first season, as the plants ought to be able to find quite enough nourishment from the fresh soil. After the roots have filled their pots, and the plants are in full growth the second time, is when a few manure waterings will be beneficial.

Hybrid Perpetual Roses lifted at once will make grand stuff for forcing in the winter and early spring of 1893; but it is not good policy to attempt forcing this section until the plants are thoroughly established in their pots; nor should they be forced so severely as those of the Tea-scented and Noisette classes.

A dozen of the very best hybrid perpetuals for this purpose are:—General Jacqueminot, Fisher Holmes, La France, Baroness Rothschild, Mrs. John Laing, Gloire de Margottin, Eclair, Mlle. Gabrielle Luizet, Louis Doré, Prince Camille de Rohan, Beauty of Waltham, and Augustine Guinoisseau, the new "white La France." Viscountess Folkestone, Lady Mary Fitzwilliam, and Grace Darling are three hybrid Tea-scented kinds that do excellently when treated similar to the hybrid perpetuals. A. P.

NOTICES OF BOOKS.

COURS D'ANGLAIS. Par Alfred Legrand. (Paris: Mesnit-Dramard et Cie., 3, Quai Voltaire.)

THIS is the text-book for the pupils of the National School of Horticulture at Versailles who desire to learn English. It contains a succinct account of

English grammar, a list of irregular verbs, colloquial phrases, and idiomatic expressions; details concerning money, weights, and measures; sketches of the history and literature of Great Britain; models of commercial correspondence, &c. The plan of the book is decidedly better than the realisation. To teach pronunciation by books, or any process short of practice and careful imitation of the best speakers, is obviously impossible. As a proof, take what the author says about the pronunciation of the letters *th*, which form such a stumbling-block for most Frenchmen.

"There are two modes," says the author, "of pronouncing the letters *th*, the one soft, the other hard. To pronounce the letters *th*, the tongue is protruded between and pressed up against the upper teeth, so as to utter the sound of *z* for the soft *th*, and that of *s* for the hard *th*." [Thus, in the word *that*, the *th* is to be sounded soft like *z*, and in the word *thin* the *th* is to be pronounced hard, as if written *sin*]. Then follows an example: I thought (*dur*), the path (*dur*) was smooth (*dour*), but found that (*dour*) there were both (*dur*) thorns (*dur*) and thistles (*dur*) there (*dour*)." In endeavouring to follow the author's directions as to hard and soft sounds in the foregoing passage, we arrive at something like the following:—"I sought se pas was smooz, but found zat zere were bos sorns and sisles zere." We concur in that opinion in this case!

The very first among the "phrases usuelles" is happily one not often heard by English ears. "Down with the spy!" In its French form, *à bas l'espion*, we may hope shortly to find it as little in use as it is here. The epitome of English literature, though, of course, greatly condensed, appears to us to be better carried out than the other portions of the work. There are, however, many names included, of which the average Englishman knows nothing, such as Bernard de Mandeville Marmion, the author of a play called "The Antiquary!" It seems strange, also, considering he was not born when the great Queen died, to class Milton with the Elizabethan poets, from whom he differs so materially. On the whole, we rather think the English student will get more information from this book, as he certainly will derive more amusement, than his French colleague will do.

PIESSE'S ART OF PERFUMERY. (Piesse & Lubin, New Bond Street, London.)

We have to chronicle the appearance of a fifth edition of a book which is a veritable encyclopædia of the subjects on which it treats. Of a fifth edition we need not say much, but we cite one passage from the preface for the benefit of our readers:—"Horticulturists being generally unacquainted with the methods of economising the scents from the flowers they cultivate, entirely lose what would otherwise be a profitable source of income!" For many ages the Cornish miners, while working the tin streams, threw the copper ore over the cliffs into the sea. How much wealth was thus cast away by ignorance we know not; but there is a perfect parallel between the old miners and the modern gardeners. Our gardeners, however, are not quite so behind-hand as this passage would lead the reader to infer. At p. 180 of the same volume, we are told that the finest Peppermint is that cultivated at Mitcham. Lavender and Rosemary are also grown in the same neighbourhood, and at Hitchin. "The essential oil there produced is," says Mr. Piesse, "very far superior to that produced on the continent." At p. 144, Mr. Piesse gives an account of the method of cultivation, but says nothing about the mysterious fungoid disease that has occasioned so much loss. No doubt our colonial friends might do much more than we do, and Mr. Piesse's book contains details as to the statistics and working of flower farms which will be of great service to them. It will also show that certain perfumes are not what their names imply. *Rondeletia* of the perfumers, it appears, is a mixture of otto of lavender and oil of cloves, with musk, vanilla, and ambergris thrown in. "Wood Violet," however, which we had thought to have nothing to do with Violets of any kind, except the name, is

really a compound into which Violets enter. By "Syringa," Mr. Piesse means Philadelphus, or Mock Orange, the flowers of which are used in France to confer scent on pomatum, and which the author tells us could be made in our colonies [and perhaps here] at a quarter the cost paid for the so-called Orange pomatum. The Lilac, or true Syriaga, also, might surely be utilised here. "Jonquil" is made up of jasmine, tuberose, orange-flower, and vanilla. Would it not be cheaper and better to procure it from headquarters by means of *enfeurage*? "Cedar" perfume is made from the so-called Red Cedar (*Juniperus virginiana*), and not from any true Cedar. Otto of Almonds is made artificially from benzol.

The days of polypharmacy are over, medical prescriptions are simplicity itself in comparison with what they once were; but in perfumery, according to the book before us, mixtures of the most complicated character still occur, and we doubt not that Mr. Piesse can give good chemical reasons for the combinations. Kew Garden Nosegay, we may add, is composed of an admixture of neroli, cassie (*Acacia Farnesiana*), tuberose, jasmine, geranium, musk, and ambergris. Elsewhere we are told that the "geranium" is really *Pelargonium capitatum*. Certain it is that in these days of germicide-vapours more attention will be given to these perfumes than before, and the importance of certain odorous substances, like camphor for instance, once thought to be over-estimated, will once more be brought into prominence.

MUSHROOMS, AND THEIR CULTURE.

By C. Brooks.

We do not remember to have met with a little treatise (treatment it is called) which is so full of mis-statements, erroneous ideas, and bad English, as this one on Mushroom culture. Moreover, there exists no need for a manual on the subject, considering how well it has been handled by Mr. J. Wright, of the *Journal of Horticulture*, who has said all that would be found of any service by the greatest novice in the art of growing Mushrooms.

THE WEEK'S WORK.

THE FLOWER GARDEN.

IN continuation of my remarks in the previous week on the planting of Roses at this season, I now give a select list of varieties in various classes of Roses. They are what is understood as garden varieties, in contradistinction to those which are essentially show Roses, being of good habit, strong constitution, and profuse bloomers, and handsome withal.

BOURBON ROSES.—*Acidalie*, white, tinted rose, very beautiful; *Armosa*, clear, bright pink, an old but excellent Rose, of China-like habit—a constant-blooming variety; *Catherine Guillot*, very bright carmine-rose, free bloomer, and good habit; *Queen of Bedders*, deep crimson, and very free-flowering; *Rev. H. H. D'Ombraïn*, bright carmine, large, and of good form; *Souvenir de la Malmaison*, pale blush, very large, a fine free-blooming autumn Rose—a time of year when the Bourbon Roses produce their finest blooms.

CHINA ROSES.—*American Banner*, flowers semi-double, yellowish-white, with broad, rose-magenta stripes, very free-flowering; *Archduke Charles*, rose, changing to deep crimson; *Clara Sylvain*, pure white, large; *Cramoisi Supérieur*, brilliant crimson, fine for beds; *Ducher*, pure white, medium size, full and well formed, growth vigorous, fine for massing; *James Sprunt*, deep crimson, pretty shape, of moderate size, a distinct, climbing-habited sport from *Cramoisi Supérieur*.

HYBRID CHINA ROSES.—*Blairii* No. 2, pale blush, very large and double; *Coupe d'Hébé*, waxy pink, beautiful; *Fulgens*, bright crimson-scarlet, superb; *Juno*, pale rose, very large; *Madame Plantier*, pure white, in large clusters; *Paul Verdier*, very bright rose, large, full, and fine shape, and very vigorous.

HYBRID PERPETUALS.—*A. K. Williams*, bright carmine red, large, round, imbricated flower; *Alfred Colomb*, bright red, full, and very showy; *Auguste Rigotard*, bright crimson, large, and good; *Bessie Johnson*, blush white, large, very sweet, and good habit; *Captain Christy*, delicate flesh colour, deeper in the centre, very effective; *Charles Lefebvre*, fine, bright, dazzling crimson-scarlet, shape, colour, and form very good; *Comtesse d'Oxford*, brilliant carmine, very large and full, of fine form and vigorous growth; *Dr. Sewell*, brilliant crimson-scarlet, shaded with purple, large, full, and finely-cupped form; *Duchess of Edinburgh*, a fine, light-coloured Rose, large, full, and well-formed; *Duke of Connaught*, rich, bright, velvety crimson, with an intense fiery blush, free and good; *Fisher Holmes*, bright scarlet, imbricated; *François Michelon*, deep rose, reverse of petals silvery, large, full, and globular form; *Helen Paul*, white, sometimes shaded with pink, large, full, and globular; *Illypote Jamain*, fine, bright rose, shaded with carmine, very large and full; *John Hopper*, fine rosy-crimson, back of petals fine lilac-tint, large and full; *Jules Finger*, white, centre shaded with pink, growth very vigorous, flowers large and full, and perfect in form; *La France*, beautiful rosy-lilac, very distinct, large and full, free blooming; *Madame Eugène Verdier*, bright rose, suffused with white, large and showy; *Magna Charta*, bright pink, suffused with carmine, very large, full, and of good form; *Marguerite de St. Amand*, bright pink, large, full, and imbricated; *Marie Baumann*, light crimson-red, very large and full; *Mdlle. Marie Rady*, fine brilliant red, good form, and very fine; *Miss Hassard*, delicate pinkish-flesh, large, full, fine shape, and very sweet; *Ulrich Brunner*, bright cerise red, large, and full.

MOSS ROSES: SUMMER VARIETIES.—*Alice Leroy*, blush, shaded with rose—large and double; *Baronne de Wassenaer*, deep rose—very large and double; *Captain Ingram*, dark velvety-purple—fine; *Marie de Blois*, bright rose—large, full, well mossed, handsome buds; *Nuit d'Yong*, velvety-purple; *White Bath*, paper-white, beautiful, large and full.

PERPETUAL MOSS ROSES.—*Blauche Moreau*, pure white—of perfect form, well mossed, the sepals passing beyond the bud nearly an inch; *James Veitch*, deep violet, shaded crimson, large and double; *Madame Moreau*, fine vermilion-red, veined with white—very large; *Madame Edouard Osy*, reddish-crimson; *Perpetual White Moss*, white—very pretty in the bud; *Souperet* of *Notting*, fine bright rose—perfect form, very large and full.

Brief lists of *Noisette*, *Tea*, and other sections of the *Rose* not included in the above, will be given in our next paper. *H. W. Ward, Longford Castle, Salisbury.*

FRUITS UNDER GLASS.

PEACHES AND NECTARINES.—The earliest trees having shed their leaves, which, owing to want of sun, have held on longer than usual, unfasten the branches from the trellis or wall, and perform what little pruning may be necessary, which will not be much if previous directions have been attended to. Some shoots may require to be shortened to the desired length, and to a woody bud, but very well-ripened shoots may remain uncut if the tree is a well-furnished one. Some gardeners have great objection to the use of the knife at the time the fruit is gathered, but I think it has an advantage over the severe pruning of the trees when they are at rest; as when the shoots are thinned at the earlier period, it gives those which are left a better chance to ripen—one of the chief points in Peach culture. Another objection is that this early pruning causes much root activity; and it may do this in the case of young trees, but such should be lifted as a preventative of too much root action. The dropping of the largest buds is often a cause of anxiety to the cultivator, and, though I do not say it can always be prevented, it may be checked by keeping the soil moist at the resting or ripening period, and by freely exposing the trees, so as to get all the current season's shoots properly matured; and by evenly balancing the shoots by pruning and disbudding, as it is usually the case that large unripened shoots drop their buds the worst.

The houses should be cleaned by washing the woodwork and glass, and repairs done before the trees are secured to the trellises. The trees may be washed with an insecticide, and the older parts dressed with a mixture of tobacco-water, flowers-of-sulphur, soft soap, clay, and quick-lime, previously syringing the trees with petroleum at the strength

of half-pint to one gallon of water. The surface soil of the borders should be removed, and a fresh coat consisting of loam, mortar rubble, wood ashes, and bone-meal put on. Ventilation should be freely afforded, and the trees remained unfastened for some time yet. When the shoots are at length tied in, leave ample space for training in next season's shoots, remembering that crowded trees are difficult to keep clean. Freely expose the trees in late houses, and clear off decaying foliage as soon as it drops of its own accord. Those who have trees on walls to fill vacancies with should not wait for the foliage to have fallen entirely, but plant at once. *G. Wythes, Syon House, Brentford.*

PLANTS UNDER GLASS.

THE FORCING PITS.—Roman Hyacinths, some of the earliest at least, will be coming into bloom, therefore more of them should be put into gentle warmth to form a succession; also place in the forcing-pit a few plants of the Indian Azalea, choosing those which were forced early last season, or, failing these, some with prominent flower buds, and especially *Deutsche Perle* and *Fielder's White*. *Azalea indica* has set its buds more freely than usual, and the shoots are thoroughly ripened, two things which make them in the best possible condition for early forcing work. Syringe the plants in the forcing-pit in the afternoons, using warm water for the purpose, and continue the practice until the blooms begin to open, when it must be discontinued. Bring into this pit a few plants of *Calla*, which have been grown in pots during the summer, keeping them well up to the glass, and assisting them with frequent doses of clear manure water. A few plants of *Cactus* or *Epiphyllum truncatum* should also be brought in, if the growth is thoroughly matured.

THE STOVE.—Old plants of *Crotons* which may have got thin and straggling should be cut hard in, when they will break back, and still make useful plants. Keep them rather dry at the roots till fresh shoots push, and if they are infested with mealy-bug, scale, &c., have them cleaned, this operation being much more effectually done than when the plants are furnished with full foliage. Young *Croton* plants are sometimes much in request for decorative purposes in the dwelling and conservatory, and when well grown, there are few species handsomer, and the gardener should propagate a good many annually, and then by growing them on in good heat, and keeping them always in a clean state, he will generally be in possession of serviceable stock. Frequently sponge the leaves of *Dracænas*, especially the under-sides of these, as it is generally there that thrip are first to be found. *Dracænas* which have got leggy through age, should be cut down, the tops denuded of a few of their lower leaves, and put into small pots, filled with a sandy compost, fastening the leaves lightly to a stick, and placed in a brisk bottom-heat, covering them with a large bell-glass or handlight, when they will quickly strike root. Be careful to wipe out the glasses daily, leaving them off for thirty minutes. Young plants of *Ixoras* should now be growing freely, and if any of the shoots are taking an undue lead, pinch out the points, which will cause the shoots to break back, and throw strength into weaker shoots. Keep the plants free from mealy-bug. Old *Ixoras* going out of bloom should be kept rather drier at the roots, and in a rather lower temperature than that in which they were grown.

CHRYSANTHEMUMS.—The plants forming the chief portions of the stock will be at their best, and care must be taken in keeping the house free from damp, or the flowers will soon suffer. To keep presentable plants as long as possible, pick off all decayed leaves and flowers, and admit sufficient air on favourable occasions to dry up damp, at the same time keeping the hotwater-pipes sufficiently warm to assist the ventilation. Finish off the watering in the morning, and do not spill water about the floors, &c. *R. Milner, Peirce Castle, Swansea.*

THE ORCHID HOUSES.

THE EAST-INDIA HOUSE.—The month of November always finds this house ill supplied with flower, unless *Calanthes* are grown in quantity, which make a display till other Orchids commence to flower. The two best varieties for winter flowering are *C. Veitchii* and *C. vestita rubra*, both of which are easy to grow; but strong heat is needed to bring them to perfection. Although the weather may

remain cloudy, the plants must be carefully watched, and no strong sunlight allowed to shine on them, or the points of the leaves will decay, and once this commences, nothing will stop its progress. Watering must be very carefully done, and the plants not allowed to get dry at the root. In the present dull state of the weather, *Phalaenopsis* will not require shade unless the sun should shine very strongly, when a little shade must be afforded. A certain amount of sunshine is needed to perfect the new growth, which should be hard, thick, and leathery.

CYPRIPEDIUMS, as they go out of flower, should be repotted if this be necessary. A great number of the *Cyripediums* require a compost of peat and sphagnum moss, whilst some others grow better when a certain amount of fibrous turf is added to the compost, but I always pull the lumps to pieces and sift the greater part of the fine loam out of it. If a few 1-inch bones are placed over the drainage materials it will assist the plants considerably, and those who have not yet tried bones should do so, and watch results. One of the finest things for drainage are the clinkers from the stovehole, the only objection to them is their weight; for *Cattleyas*, I believe them to be far before the potsherds commonly used.

THE INTERMEDIATE HOUSE.—The *Barkerias* and the *Pleiones* are now in flower, and these should be found in every amateur's collection. The *Pleiones* are of the easiest culture, also very cheap, and requiring but little heat. They are nice button-hole flowers, and the best perhaps for this purpose is *P. maculata*; but all are pretty, and when treated alike they come on in a succession of flowers that lasts about two months.

VANDA AMESIANA withstands the effects of fog; it did so here when *Phalaenopsis* buds and flowers were lost last year. The varieties of this plant are endless, and some prefer the dark ones, while others have a great preference for the white varieties. I would recommend all buyers to see the flowers first, as it is then more satisfactory to purchaser and seller alike. The temperatures for the different divisions may run for the East-India house about 65° at night, *Cattleya*-house 62°, intermediate-house 60°, cool-house 50°. *A. G. Catt, Parkfield, Hallow, Worcester.*

THE KITCHEN GARDEN.

SEAKALE.—If this vegetable is wanted very early, care should be taken to lift only the ripe crowns, if all of them are not fit for being forced at this season. The roots may be partially lifted by having a fork thrust under them, and gently raising them, and this should be so carried out as not to cause much flaggling of the leaves. When finally dug up, place them in regular rows in a dark Mushroom-house, or any other suitable place. A mild hotbed, composed of leaves, may be made use of to stimulate growth, and light soil or leaf-mould packed about them, a light watering with tepid water being afforded to settle the soil, and clean the crowns of soil. The maximum temperature should be 60°, small wiry heads resulting from a temperature that is higher than that. About 100 crowns to start with, and about sixty to put in to force once a week afterwards, will be found sufficient for a fairly large establishment. *Seakale* may be equally well grown in large pots, with a rather smaller pot inverted over each, and covered with litter, standing them in a dark warm place.

CABBAGES.—Where Cabbages in sufficient numbers have not been planted, another plantation should be made as soon as possible. Put out the plants in rows, from 1½ to 2 feet apart, according to the variety, or plant 1 to 1½ foot apart, the plants to be thinned out in April, and later. Where Cabbage plants still remain in the seed beds, have them planted in beds in a warm situation, as a reserve.

WINTER SPINACH.—The beds of this vegetable should be kept free from weeds and fallen leaves, as if these are allowed to grow at this time of the year, they would, in mild weather, soon overrun the land, and injure the crop. Handweeding is to be preferred if Chickweed and the like are plentiful. If the *Spinach* plants have not been finally thinned, this should now be done, and in doing so, always taking the weakest plants. *Spinach* of the August sowing will be fit for gathering, and any necessary thinning should now be done, leaving the plants 6 inches apart

if of the ordinary varieties, and more for *Monstrens de Gondray* and *Viroflay*. In gathering *Spinach*, take the largest leaves, never the heart leaves.

ENDIVE.—Once a week, on a dry day, tie up to blanch the full-grown plants, gathering up all the leaves close, and tying the plant with a piece of strong matting, not too tightly, but leaving room for the heart leaves to grow, and closing the leaves over the top. Some kind of protection against frost should be got in readiness, as in a wet state the younger leaves of *Endive* suffer from even a degree or two of frost. In the absence of frames and lights, it is a good plan to lift the best plants, and plant them on a sloping south border, and allow each plant just space to stand clear of its neighbour, and protect with mats or broken Fern when frost threatens. *Endive* and *Lettuces* in frames should be ventilated during mild weather, and have all dead leaves cleared away.

CHERVIL.—This herb is often required by cooks, although it is almost a hardy plant, it will be prudent to place some kind of covering over it, so as to be able to have a supply of fresh leaves in hard weather.

TARRAGON AND SPEARMINT roots should be lifted and planted in boxes, and placed in an intermediate temperature; and roots of *Sorrel* also may be lifted, and the mass of roots being large, it is best to put them into pots.

MUSTARD AND CRESS may now be raised in warmth in shallow boxes filled with light soil, made moderately firm, the seed being pressed gently into the soil, and the boxes covered with pieces of board or slate until the seed sprouts. *E. J. Waite, Glenhurst, Esher.*

THE HARDY FRUIT GARDEN.

THE PRUNING OF SMALL FRUITS.—The time has now arrived when the pruning and putting into order of most kinds of fruit bushes may be undertaken and pushed forward as fast as possible whilst the weather remains mild, for twice the amount of pruning may be done in mild as in cold weather. *Gooseberry* bushes should be attended to first, although in some gardens owing to the ravages of tom-tits and some other birds, these must be left unpruned until late in the spring; consequently, to a time when work is more generally pressing, and the pruning is apt to get insufficient attention. If the pruning be done at this season, and the tops are well dusted at intervals throughout the winter and spring months with soot and lime, or syringed with petroleum and soap-suds, the loss of buds will to a great extent be avoided. In pruning *Gooseberry* bushes, keep the branches moderately thinned out, so that light may be admitted to the interior, and do not shorten leading shoots if of strength equal to carrying the weight of the fruits without bending to the earth; and some of the lower branches should be cut out, and the heads kept in good form, the laterals being shortened back to a few eyes at the base, and all root-suckers removed with the sucker-iron. Scrape the soil from under the bushes, if the *Gooseberry* sawfly has been troublesome, replacing it with mould from some other part of the garden not likely to contain the larva of the fly. When pruning, make a selection of shoots to serve as cuttings to be heeled in without delay, or made at once into cuttings and put out into beds.

BLACK, RED, AND WHITE CURRANTS.—These may be pruned, the black variety being treated like the *Gooseberry*; but *Red* and *White Currants* should be close spurred, by shortening all the lateral shoots, except those needed for extension, to within two eyes of the base, and the leaders to 4 inches, according to the age and size of the bush, as young plants should be allowed to extend themselves until they have grown into good-sized bushes, which is done by preserving strong outward-inclined shoots, which should be cut back one-half or one-third of their length, and always to a bud pointing outwards. Shoots bare of fruit spurs should be replaced with stout young shoots, which should be slightly cut back. *Gooseberries* and *Currants* may be trained to walls, and if the wall face the north, the fruits will be fit for use long after bush fruits are over. The stems, to the number of four, may be trained upright, or better, obliquely, as then the fruits hang clear of the stems, at 1½ foot apart. The laterals are pruned as in bushes, a short leader being left for extension until the limit of space is reached. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

THURSDAY, Nov. 5.—Linnæan Society.

SHOWS.

TUESDAY, Nov. 3. { Wells (two days).
Brighton and Hove (two days).
Brixton, Streatham, and Clapham
(two days).
Watford (two days).
Kent County (two days).
Ipswich, Beddington, Carshalton,
and Wallington, Show and Con-
ference on Fruit and Chrysan-
themums.
WEDNESDAY, Nov. 4. { Ealing, Sittingbourne (two days).
Ascot, Portsmouth (three days).
THURSDAY, Nov. 5. { Chiswick Horticultural Society.
Highgate.
FRIDAY, Nov. 6. { Crystal Palace Chrysanthemum
(two days).

SALES.

MONDAY, Nov. 2. { Dutch Bulbs at Protheroe & Morris'
Rooms.
Dutch Bulbs at Stevens' Rooms.
Dutch Bulbs, at Stevens' Rooms.
Lilium auratum and other Lilies,
and Dutch Bulbs at Protheroe &
Morris' Rooms.
TUESDAY, Nov. 3. { Great Annual Sale of Nursery
Stock, at Hale Farm Nursery,
Tottenham, by Protheroe &
Morris.
WEDNESDAY, Nov. 4. { Dutch Bulbs, at Stevens' Rooms.
Clearance Sale of Nursery Stock at
Mr. Mahood's Nursery, Tangley
Park, Hampton, by Protheroe &
Morris (three days).
Plants and Bulbs, at Protheroe and
Morris' Rooms.
THURSDAY, Nov. 5. { Dutch Bulbs at Stevens' Rooms.
Dutch Bulbs at Protheroe & Morris'
Rooms.
Great Sale of Orchids, at Protheroe
& Morris' Rooms.
FRIDAY, Nov. 6. { Important Sale of Fruit Trees, at
Cliffe, near Rochester, by Pro-
theroe & Morris.
SATURDAY, Nov. 7. { Dutch Bulbs, at Stevens' Rooms.
Dutch Bulbs, at Protheroe &
Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—45°.

Technical
Education.

Now that the subject of horticultural and agricultural education is occupying so much attention, we may profitably cast our eyes upon what our neighbours are doing. For this purpose, we commend to the notice of those concerned, M. DEHÉRAIN'S inaugural address to the French Association for the Advancement of Science at Marseilles. (Greatly to our regret, we cannot print this at length, but the few comments we can now make, will show its purport and its scope. The original may be read in the *Annales Agronomiques* for September 25. The address took the form of a very interesting summary of the relations between physiology, chemistry, and agricultural practice. What is said of agriculture is, of course, with the necessary modification equally applicable to horticulture. Sketching in broad outline the progress that has been made, M. DEHÉRAIN alluded to the researches of DE SAUSSURE on the ashes of plants, showing incidentally one curious illustration of the loss and waste of time entailed by purely empirical methods as compared to those based on exact knowledge and direct experiment. Thus DE SAUSSURE, as long ago as 1804, announced the

presence of phosphate of lime in the ashes of all the plants he had examined, but it was not till twenty years later that the chance application of animal charcoal as a waste product from a sugar refinery to the land, brought to light the fertilising properties of a substance the value of which might at once have been established had practical men turned DE SAUSSURE'S experiments to account. The history of the nitrogen question, as here given, is interesting from the first, but more than ever so now, that the fertility of the soil is proved to depend not only on certain mineral ingredients, but also on germs which act as a ferment, instrumental in the conversion of the insoluble into the soluble nitrates.

Leaving the subject of chemistry, M. DEHÉRAIN pointed out, how, acting on botanical lines by a mere process of selection, the yield of Wheat and of Potatoes may be, and has been, largely increased. Of course, in this matter, gardeners are far in advance of the farmers. Naturally, the Phylloxera occupies a great deal of attention, as also the oidium and the peronospora of the Vine. The salts of copper are shown to be as useful in checking the ravages of the one as sulphur is in controlling the mischief effected by the other. A few years ago, says M. DEHÉRAIN, the scientific men were not listened to. It is very different now, at least in France; and M. DEHÉRAIN attributes the reason of this beneficial change to the general spread of education, the establishment of agricultural schools and experimental stations, and especially to the employment in each Department of a man well qualified to act as the middleman between the men of science in the laboratory and the men of practice in the field. These peripatetic instructors gather the farmers together on Sundays, as the only available day in France, talk with them about their business, instruct, and advise them, so that both parties are benefited, science modifies her absolute or too abstract character, practice on her side widens her narrow limitations, and the result is that sound methods are inculcated and extended. To the oral instruction thus afforded, is added in each Department the means of practical demonstration or of experimental trial by means of local trial-grounds, which may be counted by the dozen in many of the Departments of France. At the same time, elementary schools of horticulture and agriculture throughout the country are training a race of cultivators to be as practical as their fathers, but with more receptive intellectual powers.

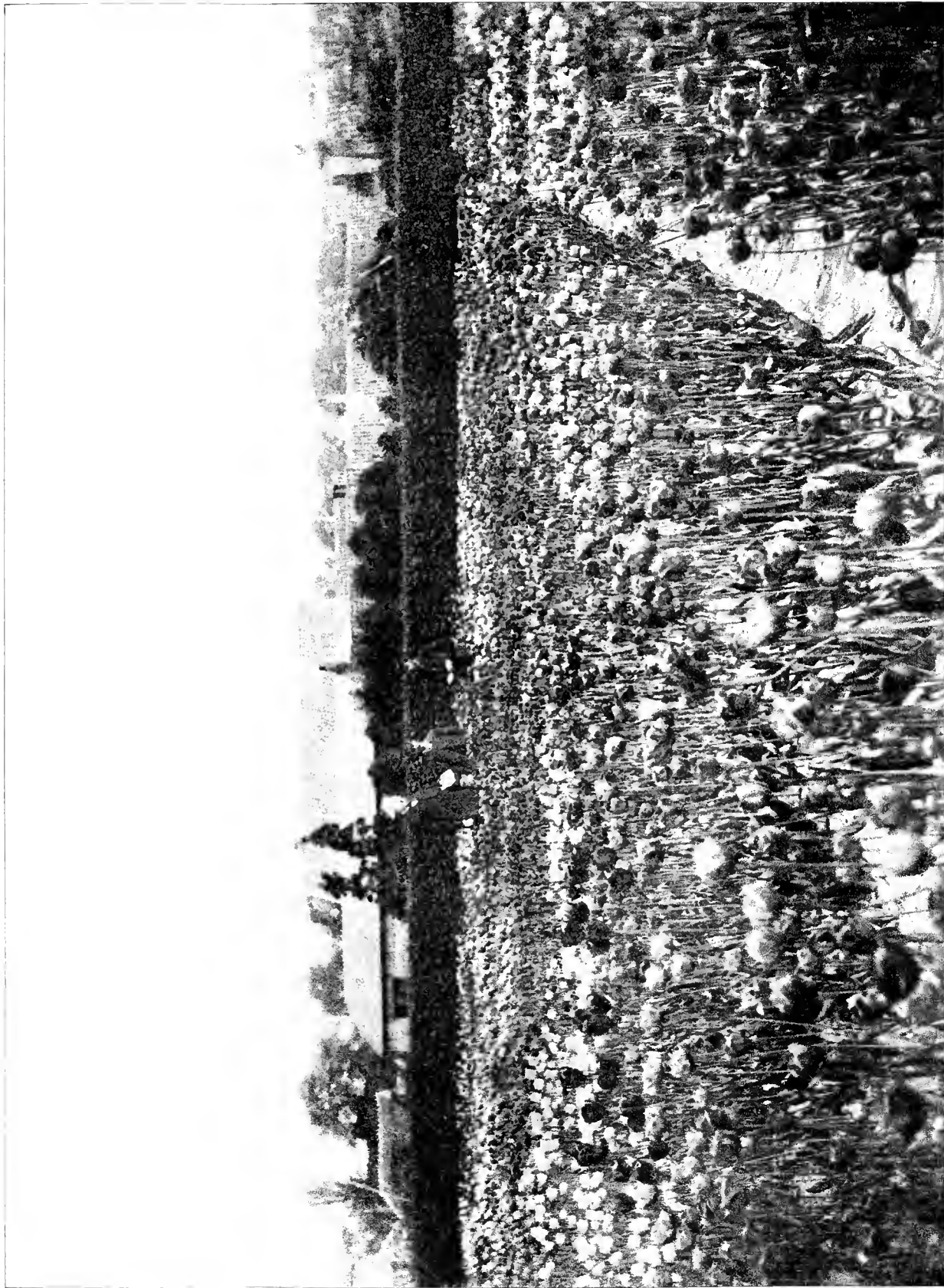
As LEONARDO DA VINCI is reported to have said, "Theory is the general—practice the soldiers." Carrying out the simile, we would say that the teachers are as the officers instructing the men how best to carry out the orders of the general. Each is essential, the one to the other, and means must be taken to secure adequate training of all. In this connection, we call special attention to the scheme in another column, formulated by a committee of the Fruit-growers Association.

THE DARWIN TULIPS.—Our Supplementary Illustration shows a field of these brilliant novelties, towering above which is to be seen the portraiture of the proprietor who, in more senses than one, is one of the greatest men in Holland. Darwin Tulips, which were so enthusiastically spoken of by one of our correspondents who saw them in bloom last spring, constitute a new strain of late-flowering self-coloured or "breeder" Tulips, remarkable for the brilliancy of colouring. So brilliant are they, that we might be well content, if they remain as they are,

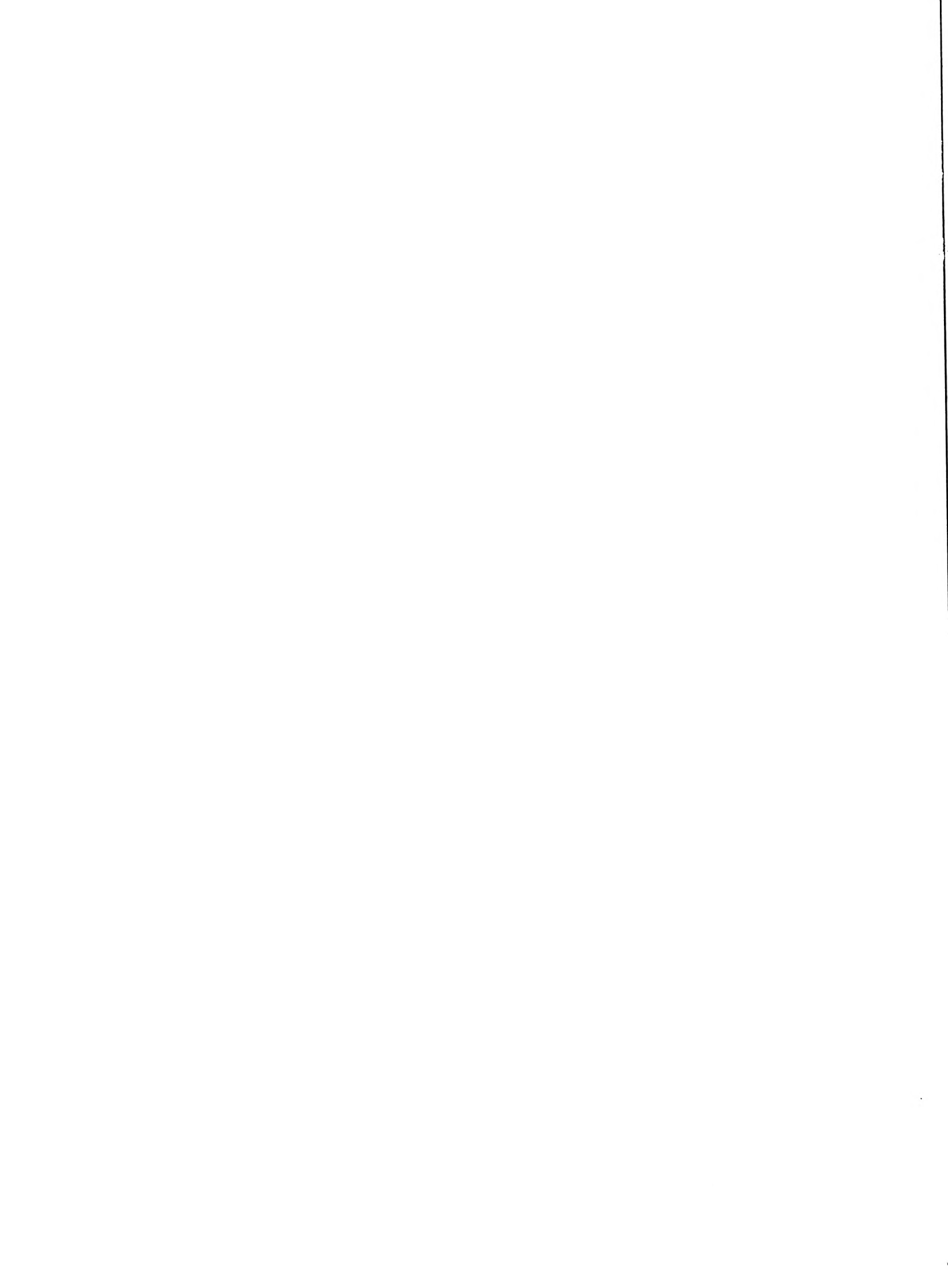
and do not "break" into the forms beloved of florists. Nevertheless, from a botanical point of view, as well as from the standpoint of the florist, there is great interest in watching the changes that occur, and in endeavouring to arrive at some explanation concerning them. No more remarkable instance of selection, according to Messrs. KNEBELAGE, has been witnessed than this, and, on that account, the new race has been dedicated to CHARLES DARWIN, who made a special study of variation in plants, and as a result, inaugurated a new epoch in scientific knowledge. At the Paris Exhibition these Tulips attracted great attention, not only for their beauty of colour, but for their hardihood and power of enduring both sun and rain. Among them is the "black Tulip," described as "the most absolute black in the vegetable kingdom."

HORTICULTURAL EDUCATION.—The following is the scheme for forty lectures prepared by a committee of the Fruit Growers' Association, and favourably entertained by the Education Department:—*First Stage.* Plant Life.—Seeds, Nature of, and Germination: requirements of growth, water, heat, air. Soils: nature and composition. Roots: nature and functions; branches, fibrils, and root hairs; what they do, and how—what helps, what hinders them. Stems and Branches: their nature; work and uses; helps and hindrances. Leaves: what they are, what they do; helps and hindrances. Buds and Tubers: leaf-buds, flower-buds, tubers. Growth: increase in size and changes of composition; formation and storage of food materials. Flowers: their component parts; what they do. Fruit: changes and development during ripening; forms and varieties, as Apple, Strawberry, Plum, &c. *Second Stage.* Elementary operations.—Description and use of implements under each head.—Operations connected with the land, with explanations and illustrations of good and bad methods: digging and trenching; draining; hoeing, stirring the soil, and weeding; watering. Preparation of seed bed: rolling and raking; sowing, transplanting, and thinning. Potting. Planting: positions and shelter; staking; earthing and blanching. Propagation. Elementary principles: cuttings; budding; grafting; layering. Insect and fungus pests. *Third Stage.* Advanced practice.—Budding, Grafting, and stocks used. Layering. Division. Branch pruning. Root pruning: old and young trees and bushes. Fruit culture: open air and under glass; small fruits; Apples and Pears; Stone fruits; gathering and storing; packing and marketing. Vegetable culture: tubers and roots; green vegetables; fruits and seeds (Peas, Beans, &c.); rotation of crops. Flower culture: outside and under glass. Manure and application. Treatment of insect pests; treatment of fungus pests. General knowledge of fruits.

AN IMPORTANT EXPERIMENT IN AGRICULTURAL EDUCATION has been started in the rural districts of Kent. In upwards of sixty villages, courses of six lectures on elementary scientific subjects bearing upon agriculture are in progress by University lecturers on the model of the University Extension movement. The lecture, the class, the syllabus, the oxy-hydrogen lantern, and the travelling libraries, the chief features of University Extension, are all put in action. In addition, local teachers will be authorised to give supplementary instruction in the intermediate weeks, since, owing to the large area to be covered, the University lecturers can only visit a given village once a fortnight. The lecturers on agricultural chemistry are:—Mr. F. M. Legge, of Trinity College, Oxford; Mr. H. H. Cousins, of Merton College, Oxford; and Mr. R. S. Morrell, of Caius College, Cambridge. Mr. W. F. H. Blandford, of Trinity College, Cambridge, lectures on Injurious Insects; Mr. A. S. F. Grünbaum, of Caius College, Cambridge, on Physiology; Mr. W. B. Bottomley, of King's College, Cambridge, on Plant Life; and Mr. P. Lake, of St. John's College, Cambridge, on Agricultural Geology. The funds are provided by a grant of £3000 from the Technical



MESSERS. KRELAGÉ'S FIELD OF DARWIN TULIPS.



Education Committee of the Kent County Council. This is the first systematic attempt, says the *Gardeners' Magazine*, to bring before rural audiences some of the elementary scientific principles which underlie their daily work, and we trust that young gardeners will take full advantage of the lectures and class-teaching.

LINNEAN SOCIETY.—The first Meeting of the Session 1891-92 will be held on Thursday, Nov. 5, 1891, at 8 P.M., precisely, when the following Paper will be read:—"A Theory of Heredity based on Force instead of Matter." By the Rev. Prof. HENSLow, M.A., F.L.S. Fellows having any objects for exhibition on that evening are requested to communicate the previous day with the Assistant-Secretary, that they may be placed on the Agenda paper.

TECHNICAL EDUCATION IN HORTICULTURE.—The draft scheme for the establishment of twenty-five scholarships at Swanley Horticultural College, has now been prepared by the Kent Technical Education Committee. Fifteen of the scholarships are to be of the value of £60 per annum, and ten of the value of £30 per annum. They are to be tenable for two years. Ten of the students for the £60 scholarships are to be selected from pupils or past pupils of elementary schools within the meaning of the Elementary Education Acts; and five from teachers, assistant-teachers, and pupil-teachers in such schools. The students for the £30 scholarships are to be selected from persons (other than the above) belonging to the industrial classes, who are to be required to pay half the fee of £60 per annum, the other half being paid by the committee. This class includes the children of all persons who are in receipt of less than £400 a year. The candidates are to be of not less than sixteen, nor more than twenty years of age on January 1, 1892. The county is, for the purpose of the scheme, to be divided into twenty-five districts (fourteen urban and eleven rural), each district being entitled to nominate five candidates, and (except in certain specified events) to have one of those candidates maintained as a scholar at the college. Out of these nominated candidates, scholars are to be selected by the committee, according to the result of an examination to be conducted under the direction of the committee.

THE WHEAT CROP OF 1891.—Sir JOHN LAWES has kindly furnished us with a communication on this subject, from which we take some extracts. After dealing with the climatal features of the harvest year, and their effect upon production, Sir JOHN gives a table, showing the yield on various plots, manured and unmanured, calculated on the supposition that the bushel weighs either 61 lb., as was heretofore supposed, or 60 lb., as now adopted by the Board of Trade and Board of Agriculture. "The permanently unmanured plot gives a yield of 13½ bushels per acre, being half a bushel more than the average of the last ten years, and this plot, which has been unmanured for fully half a century, is supposed to give at the present time a crop of Wheat per acre fully equal to the average crop of the world. The plot manured every year with 14 tons of farmyard manure, gives a produce of 48½ bushels per acre, 11½ bushels over the average of the last ten years, and only 1½ bushel below the great produce of this plot last year. The three artificially-manured plots do not differ much in yield, which is 40½, 40, and 42½ bushels per acre. The weight of the bushel is very uniform over all the plots, but in no instance does it exceed 58 lb. per bushel, the average of the last ten years having been 60½ lb. It is worth noticing, that, although by means of high manuring with farmyard dung, an increase of 35 bushels of Wheat has been obtained over the unmanured land, the weight of the bushel is very nearly the same upon both plots, thus proving that farmers have greater power to increase the yield of their crops than to improve the quality of their produce. In all the experiments, the quantity of straw was very great. Calculated in the usual way, the Wheat crop of the present

year gives a mean produce of 34½ bushels per acre; or, if calculated according to our custom upon a basis of 61 lb. per bushel, a yield of 32½ bushels per acre. Formerly, the Board of Trade assumed 80·77 parts of imported Wheat, flour, and meal to represent 100 parts of Wheat grain; but now 72 parts of imported flour are reckoned to be equivalent to 100 parts of Wheat. It is obvious that if both imported and home-grown Wheat are to be taken at only 60 lb. per bushel, the weight of both imported and produced Wheat will represent a higher number of bushels. Further, if 72 parts of imported flour are now to be reckoned as equivalent to 100 parts of Wheat, the estimated import of Wheat in that form will be so much the higher. Whilst the population to be fed has been considerably less than has been estimated, the amounts of Wheat, and flour equal Wheat, imported, have been in excess of the estimates of them. Adopting both these assumptions as correct, it is obvious that the consumption for all purposes has been greater per head of the population than we have hitherto assumed. We have for many years past assumed that the consumption of the United Kingdom was equivalent to 5·65 bushels, at 61 lb. per bushel, per head of the population. In view of the changes already alluded to, will it not be expedient to take, provisionally, the round number of 6 bushels per head, at 60 lb. per bushel, for some years, until experience shows how far the altered estimates are borne out? Last year we concluded our report upon the Wheat crop with the following sentence:—"It would appear probable, therefore, that the quantity required to be imported for consumption within the current harvest year will be about 18 million quarters, rather more or rather less, according to the turn out of the home crop." The actual nett imports amounted to a few thousand quarters over 18 millions, or, according to the figures now adopted by the Board of Trade, to rather more than 18,800,000 quarters. The season has been competent to produce very large crops, probably not much inferior to those of last year in the number of bushels per acre, but of a very much lower weight per bushel. I am therefore disposed to adopt a yield of 30 bushels per acre, of a weight of 60 lb. per bushel, as the yield of the Wheat crop of the United Kingdom for the season of 1891. Taking the population at the middle of the harvest-year 1891—2, at 38,034,615, and adopting the consumption at 6 bushels per head, our requirements will be 28,525,961 quarters. Our home produce I estimate at 9 million quarters, and deducting 2 bushels per acre for seed, a consuming quantity at rather more than 8½ million quarters, leaving our requirements for imported Wheat to amount to 20 million quarters."

BRIGHT COLOURS IN AUTUMN FOLIAGE.—"JOS. PH. WHARTON long ago explained that when sap ceases to flow in the fall, and the natural growth of the tree ceases, oxidation in the leaves takes place," says *Mechan's Monthly* for September. "Under this oxidation the leaves change to red, or, with a slight change of the condition, it might be yellow or brown. This, however, is only the chemical explanation. Life, or as we would say, vital power, has to bear a part. If a branch is entirely cut off from the main plant, no change of colour occurs. On the other hand, if a branch is injured, though not entirely cut off from the tree, a change of colour takes place, even if it be midsummer. In other words, chemistry alone cannot account for the bright colours of autumn foliage; the mysterious power we call life has to work at the same time."

THE BIRMINGHAM GARDENERS' ASSOCIATION.—Mr. HARRY J. VEITCH, of the Royal Exotic Nurseries, Chelsea, opened the Winter Session of the Association in the large room of the Midland Institute, with a lecture on "A Visit to Greece," with views illustrated by limelight, by the aid of a lantern. There was a large attendance of members, and Sir THOMAS MARTINEAU, the President of the Association, presided. Mr. and Mrs. VEITCH recently took a three months' tour through Corfu and Greece, and

Mr. VEITCH gave an animated and instructive narrative of their journey. Mr. VEITCH described the various objects illustrated, and spoke with admiration of the grandeur of the ancient buildings and the beautiful sculptures. The horticulture of Greece was barely touched upon, on account of there being but little existing, the want of water for garden purposes being very great; but he intimated that the Cypress, *Laurostinus*, *Phoenix serrulata*, *Euonymus*, and *Pinus halepensis* were amongst the trees and shrubs most generally met with, and that Peaches, Apricots, and Figs were very common. A cordial vote of thanks was passed to Mr. VEITCH, proposed by Sir THOMAS MARTINEAU, in eulogistic words, seconded by Mr. W. B. LATHAM; and Mr. VEITCH, in his reply, gave some excellent practical advice to the young gardeners present.

RUST IN WHEAT.—It is calculated that Australasia loses annually nearly 2 millions sterling through the rusting of its Wheat crops, says the *Mark Lane Express*. To find a remedy for it, a prize of £10,000 has been offered for a successful preventive, and rust conferences have been held in Sydney. The opinion prevailed generally that "certain sorts of Wheat are much better able to resist rust than others, and that by judicious cultivation and hybridisation still better varieties may be grown. They seem to be almost unanimous that early maturing sorts can be made to escape the dangerous season, and that rust is due to climatic conditions that can only be combated, but never entirely overcome." In regard to curative measures, it has been found that a solution composed of one part of sulphate of copper and 400 parts of water destroyed the vitality of the rust spores, and that a solution of 1 oz. of sulphate of iron to the gallon of water when sprayed over a growing crop at a time when rust was about to break out, prevented its appearance until a fortnight or three weeks later; and even if applied when the rust had attacked the plant, destroyed all outward appearance of the fungus, and prevented its re-appearance till 14 days afterwards. Mr. SMITH ELLIS, who has claimed the £10,000 for his discoveries in the matter of rust prevention, says in a recent paper that "the wheat-growers themselves are the sole propagators of rust by the abuse of their seed Wheat. When they cease to abuse their seed Wheat, and treat it in a rational manner, like all other seed that is grown, saved, and stored by practical seed-growers, they will no longer be troubled with rust in their crops. The cost of doing so is nothing; care is all that is required to secure that object."

THE CHICAGO EXHIBITION, 1893.—The *Journal of the Society of Arts* gives full details of the progress and prospects of this gigantic undertaking. The site of the exhibition is at Jackson Park, an area of 800 acres, 6 miles from the centre of the city, on the shores of Lake Michigan, between it and the Illinois Central Rwy. The amount of money available from different sources amounts to nearly £5,000,000! Of this, Great Britain finds £20,000, while Japan supplies £100,000, and Mexico as much as £150,000. Rather more than £218,000 have been expended up to the end of September, the cash in hand being at the same time over £391,000. To the northward is the great Horticultural Palace, around and near which sufficient space is left to allow for out-of-doors display of plants and flowers. Little need be said about this building, except that it forms a conservatory on an enormous scale, measuring 250 feet by 1000 feet, with a large and lofty central dome. Extensive as is the space enclosed by this glass and steel structure, it has already been applied for, and will prove quite insufficient for the horticulturists and floriculturists of the United States. Space has been reserved for the erection of many other smaller glass-houses, and chiefs of the floricultural department of the Exhibition anticipate that much support will be given them by British floriculturists, who have extensive business relations with the United States. The Agricultural Hall occupies a space of 800 by 500 feet; that for fores try

500 by 200 feet. The wooded island in the lagoon, which will be one of the principal ornamental features of the ground, is already partially timbered, and its surface is accentuated enough to throw it into considerable relief. The work of planting the island with indigenous trees will be carried on until it becomes an exhibit of American forestry. No buildings will be allowed here, but the island will be accessible to the public.

THE IRRIGATION COLONIES OF VICTORIA.—We have received from Mr. E. C. GATES, 21, Finabury Pavement, a pamphlet descriptive of the Irrigation Colonies of Victoria, and of the openings afforded for hard-working emigrants who can afford the small sum needed to buy a farm therein. The irrigation scheme originated in California. There, large tracts of land so arid as to be quite useless for agricultural purposes, were, by an elaborate arrangement of aqueducts and canals, watered with supplies brought from distant rivers and mountain reservoirs. The success of the experiment, and the pecuniary results which followed it, were quickly seen, and from Australia engineers were sent to learn the details of the system, and apply it to the dry regions of their own colony. The irrigation scheme proved equally successful in Victoria, where many once-barren acres are now turned into rich farm land, where fruit and other crops can be successfully raised by large or small owners. Many farmers now struggling against over-competition and adverse climate might do wisely to emigrate and buy for about £12 an acre land which, properly managed, is very productive. Many of the farms are so conveniently situated that the cost of transit of stock is small, while there is always a ready market for really good produce.

"ICONES PLANTARUM."—The last part comprises illustrations of many plants most interesting from a botanical point of view. They are to a large extent of Chinese or of West African origin. Some, such as *Eranthum polyanthum*, t. 2000, from the Patkye mountains, between Burma and Assam, are well suited for introduction as garden plants. The curious central Chinese *Pedicularis vagans*, with broad Fern-like foliage, and runners like those of a Strawberry, would be well worth introducing, and *Carpinus laxiflora* should be looked after by lovers of trees. Emeritus Professor OLIVER is the Editor of this most useful record.

SPIRAL TORSION.—Prof. HUGO DE VRIES has published in a separate form, and with numerous illustrations, his elaborate monograph on this subject, under the title of *Monographie der Zwangsdrehungen*, *Psilotum triquetrum* (stem), *Banksia marginata* (leaves), may be added to the numerous examples given or cited by the author.

GLASNEVIN.—The official report for 1890 of the Director of Science and Art Museum, Dublin, speaks of the Royal Botanic Gardens, under the charge of Mr. F. MOORE, as being in a very satisfactory condition, the chief want being the long-asked-for house for succulent plants. The increase in the wages of the gardeners and labourers during the year "was a well-deserved recognition of their claims to participate in the general rise which has taken place in wages. Purchases of plants to the amount of £241 19s. 2d. were made during the year, and exchanges to at least the same amount have been made. The number of donations was 126. Musical promenades are held in the gardens, the average attendance being 2235. The total number of visitors to the garden during the year amounted to 375,000, of whom no fewer than 274,201 were present on Sundays.

THE INFLUENCE OF PINE TREES UPON TEMPERATURE, ETC.—The *Echo Agricole* says, it is really astonishing that the resinous trees are so little used by gardeners and others as a protection against the north and north-easterly winds. Such trees are of incontestable value in protecting early plants and vegetables, and it has been observed that gardens which are systematically protected with them are

always a fortnight in advance of others which are more exposed to the cold winds and late frosts. There is not a garden which cannot be made more productive by a systematic protection with Pine trees. Pines and Firs perceptibly keep the temperature in their immediate neighbourhood slightly higher, besides breaking the force of the wind by their thick branches. Anyone can demonstrate this elevated temperature by making a few observations with a common thermometer; it is by no means rare to find a temperature as different as that of March and that of May. Everyone knows how bad cold is for young plants, and it seems by taking such natural precautions as the planting of resinous trees in the proper quarters, a great deal of early damage may be avoided.

THE DESTRUCTION OF ROSE PESTS.—Mons. MENART BOUREAU, of Suèvres (Loire-et-Cher), makes the following communication to the *Journal des Roses*:—"In July, when I was treating my Vines against the mildew, the idea occurred to me of employing the same insecticide for destroying the insect pests which affected my Roses. Consequently, I syringed the trees with a liquid composed of the following ingredients, with the result that a few hours later all the insects were in a dead or dying condition, and had fallen off the leaves:—Ammonia, 1 kilogramme; sulphate of copper, 2 kilogrammes; water, 200 litres." Amateurs whose Rose trees get infested with insect life are recommended to try the same experiment. But a simple solution was recently recommended by *La Nature*. It consists in taking crushed wood-ashes, and sifting them dry in a fine condition over the heads of the trees immediately after they have been syringed with water. The wood-ashes adhere to the leaves, and on account of their alkaline nature, soon make it uncomfortable for any insect pests that may be there. The ashes do not injure the trees; on the other hand, when they have been syringed off with water again, they fertilise the soil.

POISON IN ARTICHOKE LEAVES.—A communication has recently been made to *Cosmos* by Mons. PAUTHIER, of Senlis, concerning a very curious fact which he has observed. There has been, hitherto, no reason for believing that any part of the globe Artichoke plant has a toxic effect upon the human economy when taken directly, yet should cows accidentally partake of the leaves, their milk for the time being becomes distinctly dangerous to health if used by children, or others of weak digestion. The symptoms are those of poisoning, the patient vomits and suffers from diarrhoea. Chemical analyses of the leaves, and of the affected milk, has revealed the presence of a substance which is known to chemists by the name of cyanurin. Obviously, care should be taken not to feed cows, or to allow them accidentally to feed on the leaves of Artichoke, because their milk for some hours afterwards contains a noxious principle which is capable of causing serious complications in the system of a person, especially a child, who should partake of it. Moreover, there is no particular reason why cows should be allowed to eat Artichoke leaves, even when there are plenty of them, because as a food they possess a low value.

ARMERIA GADITANA.—In the last issued part of Dr. WILKOMM'S *Illustrations Flore Hispanie*, &c., is a coloured figure, t. 159A, of this "superb plant" known to TOURNEFORT, and accurately defined by BOISSIER after having been confounded with *A. latifolia*. It is a native of Southern Spain, and the corresponding districts of Portugal, while a variety of it occurs in Morocco. The leaves are large and leathery, lanceolate acute. The flowers white, in a large head, at the end of a naked stem.

GUTTA-PERCHA TREES AT SINGAPORE.—The *Kew Bulletin* for September contains a note on the re-discovery of this tree, now known as *Dichopsis gutta*, in the Island of Singapore. It was originally discovered in 1842 by Dr. MONTGOMERIE, and the gum was employed to insulate telegraph wires, for

which purpose no other substance has yet been found so good. The tree was supposed to be extinct, but it has been re-discovered by M. SERULLAS, who proposes a method of extracting the gum from the prunings of the tree instead of by the ruinous process of felling the tree and draining it of its milky juice.

THE LEEWARD ISLANDS.—On the nomination of the Director of the Royal Gardens, Kew, Mr. C. A. BARBER, late University Demonstrator of Botany in the University of Cambridge, has been appointed Superintendent of the Botanical and Agricultural Department in the Leeward Islands.

AGRA.—Also, on the nomination of Kew, Mr. WESTLAND, of Hong Kong, has been appointed Superintendent of the Taj Gardens, at Agra. Mr. WESTLAND'S position at Hong Kong has been filled up by the appointment of Mr. W. J. TATNER, from Kew.

HYBRID WHEATS.—The *Rural New Yorker* of the 12th ult. contains some striking illustrations of cross-bred Wheat, and still more remarkable figures of true bigeneric hybrids between Rye and Wheat obtained by Mr. E. S. CARMAN. The crosses selected for perpetuation are, of course, those best adapted to the conditions and requirements of the several States of the Union. Seed is placed on the market by Messrs. THORBURN & Co.

CATALOGUE OF HARDY PERENNIAL AND BIENNIAL PLANTS.—Professor WITPROCK and M. HANS OSCAR JUEL have compiled a very full catalogue of the plants above named, which are cultivated in the open air in the Botanic Garden of Berg, Stockholm. The plants have been obtained largely from seed supplied by other botanic gardens, but the authors lament that scarcely one-half were correctly named. Great care seems to have been expended on the present Catalogue, to which are added botanical notes in Latin relating to some of the more interesting plants. A curious variety of the Spruce is figured, *Picea excelsa* var. *acutissima* (p. 79), which originated as a seedling. It is of very dwarf habit, and slow growth, and the leaves relatively long, very acute, and much flattened at the sides.

HYBRID BETWEEN CRINUM AND HIPPEASTRUM.—In the October number of *Mechanics Monthly*, Mr. OBERSWELLER, of Austin, Texas, narrates how he has raised a hybrid out of *Crinum Kirkiti*, fertilised by pollen of a hybrid *Hippeastrum*. Further details are required as to the progress of the cross, if it really be one.

ORCHIDS AS CUT FLOWERS.—The *Journal des Orchidées* is about to take the votes of its readers with a view to ascertain which are the best twelve Orchids to grow for market as cut flowers.

HEMP AS A DEFENCE AGAINST WEEVILS.—Mr. J. B. HELLER of Graham's Town, writing in the *Agricultural Journal* of the Cape Colony, September 24, p. 71, says, that the "comings of the Hemp produced in the manufacture of the fibre are used as a protection against the attacks of weevil on the "Mealies" Indian Corn. The leaves of the Hemp are merely placed about and amongst the bags and heaps of grain.

SCALE INSECTS.—Mr. ARTHUR SHIPLEY, Christ's College, Cambridge, makes known, through the *Kew Bulletin*, his desire to receive specimens of scale insects and nematode worms affecting plants. The September number of the *Bulletin* contains an article from his pen on the Orange scale in Cyprus.

MYLES MEMORIAL FUND.—We have already alluded to the decease of this gentleman, at a comparatively early age. Unfortunately, he was unable to make any provision for his widow. The Selborne Society has, therefore, issued a special appeal to all its members, but would also do so generally to any other persons who may feel disposed to contribute to the fund. As many of our own readers have doubtless profited by Mr. MYLES' admirable *Pronouncing Dictionary of Botanical Names*, appended to

NICHOLSON'S *Dictionary of Gardening*, it is hoped that they may like to contribute to the fund. The Rev. Professor G. HENSLAW, Drayton House, Ealing, W., will be glad to receive any communications.

M. DE LA DEVANSAYE.—The Horticultural Society of Angers, and Maine and Loire, have presented to M. DE LA DEVANSAYE his bust, in commemoration of his twenty years' Presidency of the Society. M. DE LA DEVANSAYE is well-known as an ardent horticulturist, and as the raiser of several new and remarkable *Anthuriums*.

TODDY PALMS.—Adverting to the excellent woodcut published at p. 105, and for which we are indebted to Mr. GOLDRING, the editor of the *Tropical Agriculturist* says, that in the case of the Toddy Palms of Ceylon, the juice is obtained, not from the stem, but from the unopened flower-spathes.

ORCHID-GROWING IN ENGLAND.—The October number of the *Journal des Orchidées* contains an account of the Orchid-houses of Mr. STATTER, of Manchester. The writer, M. LUCIEN LINDEN, goes into detail, and is very eulogistic.

ETIENNE LEVET.—Many Rose growers will regret the record of the death of this distinguished rosarian. M. LEVET died at Lyons on August 21, in his 75th year. Among the Roses raised by him we may specially recall Paul Néron, Belle Lyonnaise, François Michelin, and others.

THE CULTIVATION OF THE PEACH.—Mr. R. HONEY, of Sunderland, read an interesting paper before the members of the Newcastle and District Horticultural Mutual Improvement Society in one of the rooms of the Literary and Philosophical Institute, Newcastle, the subject being "The Cultivation of the Peach and Nectarine," on October 15. Mr. BARNARD COWAN, of South Shields, presided, and there was a fairly numerous attendance. Mr. HONEY, in the course of his paper, said that when cultivating the Peach against a wall, it is preferable to have the wall of brick rather than stone, as it is warmer; and it is advisable [in the Midland and Northern Counties. Ed.] to build flues in the walls. For the borders, a sound and dry sub-soil is required. Many trees have been ruined by the borders being too deep, too damp, or too rich. From 2 feet to 2 feet 6 inches is the proper depth, and a good hazel loam is best; but whatever the soil, it should be of a texture slightly adhesive. As to manure, the trees should be top-dressed every year in May. Fan-shaped trees should be planted 20 feet apart as permanent trees, but riders can be planted between them for cropping for a few years, the riders to be finally discarded. The paper then went on to give instructions as to the thinning of the fruit, preserving the trees against red spider, and various diseases, such as gumming caused by wounding the trees, mildew, and blistered leaves, &c. It also deprecated the brushing off of the foliage in autumn. The chairman, Mr. COWAN, said he considered there was a great future before their own and similar associations. Statesmen were just now deploring the conditions under which agriculture was pursued. There was fully as much to be said for horticulture. In this respect he thought they might, at some not very distant day, be assisted by the County Councils. A great deal of the foreign garden produce brought into Newcastle might, he thought, very easily be grown in the district. He hoped the President of the Board of Agriculture would recognise gardeners, as he had already done farmers. Railway transit was a great difficulty in this country. He (Mr. COWAN) knew of a Strawberry farm near Alnwick which paid very well, but the fruit from which had to be sent to Glasgow instead of Newcastle because the carriage was cheaper.

FLORICULTURE IN THE STATES.—The United States *Census Bulletin* just issued, notes that floriculture in the United States has come to be simply the growing of a few things for cut flowers, says *Meehan's Monthly* for September. It has found that there are 4559 greenhouse establishments in the United

States, and that the total number of plants raised is about 125,000,000; of these, 49,000,000 were *Rose* alone, and the rest were made up of plants in the following order:—*Violets*, *Chrysanthemums*, *Lilies*, *Hyacinths*, *Smilax*, *Bouvardia*, *Heliotropes*, *Pansies*, and *Tulips*. These together make 90 per cent. of the whole of the plants raised. The other 10 per cent. were made up of *Orchids*, *Tuberose*s, *Mignonette*, *Primroses*, *Camellias*, *Daffodils*, and a few other scattering things. Three hundred and twelve of these establishments are owned and managed by women. The value of the greenhouses, including heating apparatus, is placed at 38,000,000 dols. For outdoor gardening the demand has been in a great measure confined to *Pelargoniums*, *Coleus*, *Roses*, *Pansies*, *Verbenas*, *Heliotropes*, and *Carnations*. Among all the large classes of florists' flowers, the *Fuchsia* is the only one noted as being grown in sufficient numbers to be worth naming. When it comes to a matter of profit the report says, that *Roses* have been the most profitable, the *Carnations* next. Some few florists, however, speak of the *Carnation* as being more profitable than *Roses*.

CIRENCESTER CHRYSANTHEMUM SHOW.—One of the newest of the Societies established for the purpose of encouraging the cultivation of the *Chrysanthemum* is Cirencester. The schedule before us exhibits a locally well-supported Society, and that *sine quâ non* of a country show, a fairly good list of prizes offered in the various classes. Fruits and vegetables likewise find place at the show which will be held on November 11 and 12.

THE BEHAVIOUR OF TANNIN IN PLANTS.—Experiments were recently made by BUSGEN, a German botanist, in order to determine whether a disappearance of tannin in any parts of plants can be shown to take place; the results were reported in one of our German contemporaries, *Forsch. Gebiete. Agrik. Physik*, xiii, p. 305. A distinction has been made by KRAUSS between "primary" tannin, which is produced with, and "secondary tannin," which is produced without, the intervention of light. In certain cases both kinds were found to disappear. Tannin was also found to disappear from cells which were on the point of dying, as well as from cells possessing more vitality. BUSGEN doubts whether it is again used in building up. Direct proof of the production of tannin from sugar, in a manner similar to the formation of starch from sugar, was obtained. Portions of shade-leaves of various plants were placed with the upper side on a 10 per cent. solution of Grape-sugar, the chief veins having been cut to facilitate the entry of the solution. Portions of the same leaves were similarly placed on pure water. The latter showed no increase of tannin after four or five days, whilst those in the sugar solution showed a notable increase. It has still to be shown what intermediate products are formed when sugar is converted into tannin, and also whether other substances will give rise to it.

THE DEVON AND EXETER GARDENERS' ASSOCIATION.—The above, formed less than a month ago, has begun its session in sober earnest, and if it can be carried on with as much spirit and energy as it has shown at the beginning, there is probability of its being established on a firm basis, and of its serving a most useful purpose. Under the chairmanship of Mr. Alderman ROBERTS, the first meeting was numerously attended, and Mr. D. C. POWELL, of Powderham Gardens, read an excellent paper on "Apples." The paper evoked a spirited discussion, in which Mr. VERTCH and others took part.

CATTLEYA LABIATA, Lindl.—Much has been said and written of late respecting what is known in gardens as "*Autumn-flowering labiata*." As examples of what clever collecting and quick consignment can do, MESSRS. SANDER exhibited at the Royal Horticultural Society, on October 27, grand masses, some of them with a hundred bulbs, fresh imported, and with plenty of good dormant eyes, and thick healthy leaves. In connection with

the exhibit, a curious matter came out as to its introduction. It appears, that in the spring of 1890, Mr. SANDER saw in the collection of Mr. E. MOREAU, at Paris, some *Cattleyas* which had been sent to him from Brazil. With the pardonable scepticism of one who had already spent thousands of pounds in searching for true autumn-flowering *Labiata*, Mr. SANDER refused at the time to acknowledge the claims of the plant to be the long-sought species, to be correct. However, he could not get the matter off his mind so easily, and soon afterwards thoroughly sifted the subject, and sent ERICKSON, one of his hardest and most reliable Orchid collectors to the spot indicated, and in due time received a great supply of which those referred to above are the last arrivals and the best. There was one white flower, one which opened in the case, but it is most likely that albinos will be rare in this species.

CHESTNUT TREE STRUCK BY A FIRE-BALL.—During the storm on October 14, a fine Chestnut tree standing in the grounds of Mr. YATES NEILL, of Ealing, was struck by a fire-ball. At the time of the accident a gardener was sawing off a branch broken by the wind of the previous night. He, as well as two gentlemen who stood near, felt the shock severely, but sustained no permanent injury. According to a local contemporary, the trunk of the tree "presents the appearance of having been burned in a zig-zag direction for a distance of some 20 or 30 feet."

MESSRS. SUTTON & SONS' EXPERIMENTS WITH BORDEAUX MIXTURE.—It is needless to say that the results of the above, alluded to in the *Gardeners' Chronicle* last week, has taken us by surprise. From France, Belgium, Germany, and especially from America, we have heard of nothing but success attending the copper treatment. Nay, more, from all we have heard up till now, of experimental work, both on a large as well as a small scale, in Great Britain, the result has been the same, all tended to confirm our most sanguine hopes. Leading alone sounds the unwelcome note of failure, and sends forth a wail of disappointed hopes. One swallow generally does not make a summer, so one failure must not dishearten us. The very fact of it being the only failure yet recorded ought rather to stimulate our interest. Why should MESSRS. SUTTON alone have failed—failed not in checking the disease: but failed practically by lessening the productiveness of the plants. Naturally, those interested in the subject are not slow to meet the case. Mr. W. WHITEHEAD COUSINS, writing to a contemporary, the *Agricultural Gazette*, brings forward some most important facts, which cannot fail to be of interest to your readers. Like MESSRS. SUTTON'S tables, his letter is too long for reproduction, but unlike these, does not contain detailed minutiae of a single experiment—for such theirs really is—it being the application on three successive dates of one strength of the mixture upon a vast number of varieties of Potatoes growing together in the same place under the same conditions of climate and cultivation. Mr. COUSINS quotes the fact that the six 2-acre plots dressed three times with a 2 per cent. mixture in various parts of the kingdom under the auspices of the Royal Agricultural Society, and 9 acres of Regents at Sittingbourne dressed twice with a 2 per cent. mixture, have none of them received any injury. That produce of the Royal Agricultural Society's experiments plots weighed in Bedfordshire and Wales show a large increase in yield in favour of the treatment. The same he finds to be the case at Cliffe, at Spalding, at Bendly (Worcestershire), at Cheddington (Bedfordshire), at Stittingborne, in the Isle of Axholme, at Edinburgh, and at Arbroath: no injury to the plant and an increase in the yield. Surely these results "ought to outweigh the one trial at Reading." Of course the point is, why did the Reading experiment not turn out a success? Many reasons naturally suggest themselves, but in the absence of knowledge of details of the experiment, it is hardly worth while to speculate. We hope

at an early date to learn some of these details, and I have no doubt that we shall see the cause was not so very far to seek after all. *Charles B. Plowright, M.D.*

[We have received numerous comments on Messrs. Sutton's experiments, which appears to be at variance with those of other experimenters. Next week we may find room for some of these. Ed.]

SCOTLAND.

NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.

THE members of this Association held their first meeting of the winter session in the Christian Institute Hall, Aberdeen, on Wednesday evening, the 21st inst. There was a good attendance, and Mr. D. M. Smith, the retiring President, occupied the chair at the opening of the proceedings. On the motion of Mr. C. S. France, it was unanimously agreed that all apprentice gardeners, foresters, &c., be admitted to the Association, and their annual subscription to be 1s. In the discussion, it was stated that no class required technical education more than gardeners, and yet they were far behind in this matter. Mr. C. S. France, the newly-elected President, then took the chair, and proceeded to deliver his opening presidential address. At the outset of his remarks, Mr. France returned thanks for the honour which had been done him in appointing him President. After a reference to the high ability of his predecessor in office, he went on to say that he was inclined to think that they had been neglecting the scientific side of their profession, and going in too much for the practical. He thought they ought to make their programme a little more varied and comprehensive. He impressed upon them the advantage of careful observation of every freak of Nature that might come under their notice, and advised them to bring such matters before the Association for discussion and solution. In regard to what he had suggested with reference to the widening of the scope of the Association, what he particularly advised was, that papers should occasionally be given on such subjects as botany, vegetable physiology, geology, mineralogy, the nature and quality of soils, chemistry, entomology, and meteorology. He also directed their attention to the importance of landscape gardening. The library of the Association might also be extended. He further suggested, in view of what he had said in connection with extending the usefulness of the Association, that a slight alteration might be made in the name of the Association, by tacking on arboriculture. They had many foresters in the Association, and he saw no reason why subjects relating to that department should not be discussed. The name of the Association he proposed was, "The North of Scotland Horticultural and Arboricultural Association." He concluded by throwing out the following additional suggestions:—That there should be four grades of membership: first, proprietors; second, factors and nurserymen; third, gardeners and foresters; and fourth, assistant gardeners and assistant foresters; that a proportion of the funds be voted as for prizes, for essays, or for objects such as herbaria, collections of cones, woods, or meritorious exhibits in either horticulture or arboriculture; that, in addition to the monthly meetings, a meeting should be held annually in September or October, of the nature of a conference, at which the prizes might be awarded and papers read on any given subject of general interest; that excursions should be organised to gardens and other places of horticultural and arboricultural interest in the neighbourhood; and that the meetings of the Association should be made so attractive as to induce all members to come forward and share its work.

At the close of his address, Mr. France received the hearty thanks of the meeting. A paper was then read by Mr. R. Farquhar, late of Fyvie Castle,

Aberdeenshire, on "Some Impressions of America," for which the thanks of the Association were also accorded. The proceedings then terminated.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN: ANNUAL MEETING.

THE annual meeting of this Society was held on Saturday, the 17th inst., in the Music Hall Buildings, Aberdeen, Baillie Crombie, chairman of the directors, in the chair. The following was the report:—It is with deep regret that the directors have to refer to the lamented death of their late chairman, Mr. James Murray Garden, Advocate, whose warm interest in the Society was so well-known.—The Society held a spring exhibition in the Music Hall Buildings on April 10 and 11. The exhibition was an admirable one; but, from a succession of unforeseen circumstances, the financial result was not a favourable one. The annual floral *fi*te was held in the Duthie Public Park on August 20, 21, and 22, and proved most successful, both from an exhibitors and from a financial point of view. The entries numbered 1731, as against 1607 for the previous year. The exhibits were the finest that have been shown for a good many years. The financial surplus on the year amounts to £63 13s. 4d., which, added to the balance brought from last year, makes £251 9s. 10d. at the credit of the Society. The best thanks of the Society are due to the Aberdeen Town Council for granting the use of the Duthie Park; to Dr. Dove Wilson and Baillie Lyon for their services in connection with the opening of the Exhibitions; and to Professor J. W. H. Trail for his interesting lectures at the spring show. The chairman moved the adoption of the report, Baillie Lyon seconded, and in doing so, said it was satisfactory to find once more that the balance was on the right side, and that but for that most unfortunate venture, the spring show, they would have had a very much bigger one. He was one of the parties that opposed very strongly having a spring show—not against a spring show itself, but against their risking it being a success; and they would see that the results of their spring show these last three seasons had been a most serious loss to the Society. He thought the Society should pause before it held another spring show until they had £1000 at their credit. Then they could afford to lose £80 or £100. The running of a spring show was a very risky thing indeed. It might be very desirable from the point of view of those who cultivated spring flowers, but theirs was not an advertising Society altogether. There was a Society to be carried on for furthering horticulture, but not at a serious financial risk. He thought the Society, having the experience of the past two years, should pause before it had another spring show. They would remember that he called their attention at the last annual meeting to the advisability of raising the price of admission to the show on Saturdays from 3d. to 6d., and he thought he could come there with very great satisfaction that night and say that his recommendation had been a great success. He said then, no exhibition worthy of going into could be got in the United Kingdom for prices of 6d., and much less 3d., and if they risked putting the admission up to 6d., he was quite sure the citizens of Aberdeen would encourage it. It was very gratifying indeed that they should find their balance amounting to £251 9s. 10d.

The report was adopted, and the meeting proceeded to the election of office-bearers for the ensuing year. Baillie Crombie was unanimously reappointed chairman, as was also the Secretary, Mr. A. M. Byres, C.A. The directorate remained the same as last year.

Baillie Lyon said they would have seen from the newspapers that the Incorporated Trades of Aberdeen had resolved to give off some of their land in small plots. Now, he thought it was worthy of the consideration of the directors to give some prizes for the best-kept plots of ground. He only threw this out as a suggestion. Mr. Robson, of Messrs. Smith & Son, expressed his approval of

the suggestion. Baillie Crombie then drew the attention of the meeting to a matter affecting the Society which had been brought before him. There had been placed in his hands the rules of a benefit society in Edinburgh, such as had been sometime ago spoken of in Aberdeenshire for gardeners, florists, seedsmen, and nursery *employés*. It was connected with one of the free gardeners' big bodies, and it was confined entirely to such as the Society was composed of. Baillie Crombie then gave a number of statistical facts as to the payments, benefits, and rules of the Society. Such a Society as this, he continued, would be exceedingly beneficial to the members, and than this Society there was no one he knew of in the profession in which they could get such advantages. The matter had been brought under his notice by Mr. Robson. He might say also that in Edinburgh the Society had been very successful. He was led to believe that the North of Scotland Horticultural Society would be very glad to join in any effort likely to be made in the direction indicated. It was agreed that the matter be remitted to the Directors for consideration. Votes of thanks terminated the proceedings.

LEMOINE'S HARDY HYBRID GLADIOLI FOR 1891.

NANCEIANUS SECTION.

HAVING described last year's novelties of this beautiful race of hybrids in these columns, I hope that some descriptive notes about this year's series may not be unacceptable to the readers of the *Gardeners' Chronicle*.

The set of novelties of the Nanceianus race of hardy hybrid Gladioli for this year consisted of seven varieties, and an eighth, not to be distributed till this autumn, was sent me a year in advance by the kindness of M. Lemoine. As this was the first to come into flower, it will head the list.

A. de la Devansaye, named after the well-known raiser of hybrid Anthuria, opened its first bloom on July 14, and is a fine tall vigorous grower, with branching flower-spike, and large fully expanded flowers (all looking the same way) of a most pleasing shade of light carmine, flaked with lake. The lower petals are most beautifully and evenly divided into three bands of colour, the inside deep carmine, spotted with white towards the throat of flower, then a broad band of pure white, and the outside a similar band of light carmine, altogether a most beautiful variety, and one of the finest of the whole family, which should be in every choice collection.

Professor Sargent opened its first flowers on July 21, and is a tall-growing variety, with a branching flower-spike, and large, fully-expanded flowers of a deep shade of carmine, with large and distinct blotches of creamy-yellow on the lower petals, which are spotted with carmine towards the throat of flower. This fine variety somewhat resembles President Carrot.

Ondine began to bloom on July 27, and is a variety of rather slender habit, with medium-sized, well-opened flowers of a dull, washy shade of red, flaked with purple, and marked and blotched in the same way as President Carnot, but, on the whole, a poor and inferior variety, though accorded some admiration by a few of my lady visitors, who pronounced its dull ground colour to be the æsthetic hue known as crushed strawberry.

Massena opened its first bloom on July 29, and is a vigorous growing variety of less than medium height of stem, bearing large handsome flowers of a pleasing shade of light red faintly flaked with carmine, and with large pure white spots on the lower petals, which are themselves spotted with carmine towards the throat of the flower—an exceedingly fine variety.

Dr. H. P. Walcott opened its first flower on August 5, and is a variety of medium height, with fine, large, well-opened flowers of a most pleasing shade of light red flaked with carmine, and irregularly mottled with white. The two lower petals are distinctly blotched, with creamy white,

Le Grand Carnot opened first flower on August 9, and is a fine vigorous tall-growing variety, with the largest and handsomest flowers of the whole lot. These fine flowers are of a bright shade of scarlet, faintly streaked with carmine, and with two large and most distinctly-marked blotches of pale canary-yellow on the lower petals. The flowers are more fully expanded than those of any other variety, and look you straight in the face. This grand variety should certainly be found in every choice collection.

Kleber began to bloom on August 13, and is a fine tall growing variety, with upright, unbranching spike, bearing large, well-expanded flowers, which also look you straight in the face, and are of a pleasing shade of light rose-colour, flaked with carmine, and distinctly blotched with pure white on the two lower petals. An exceedingly effective variety.

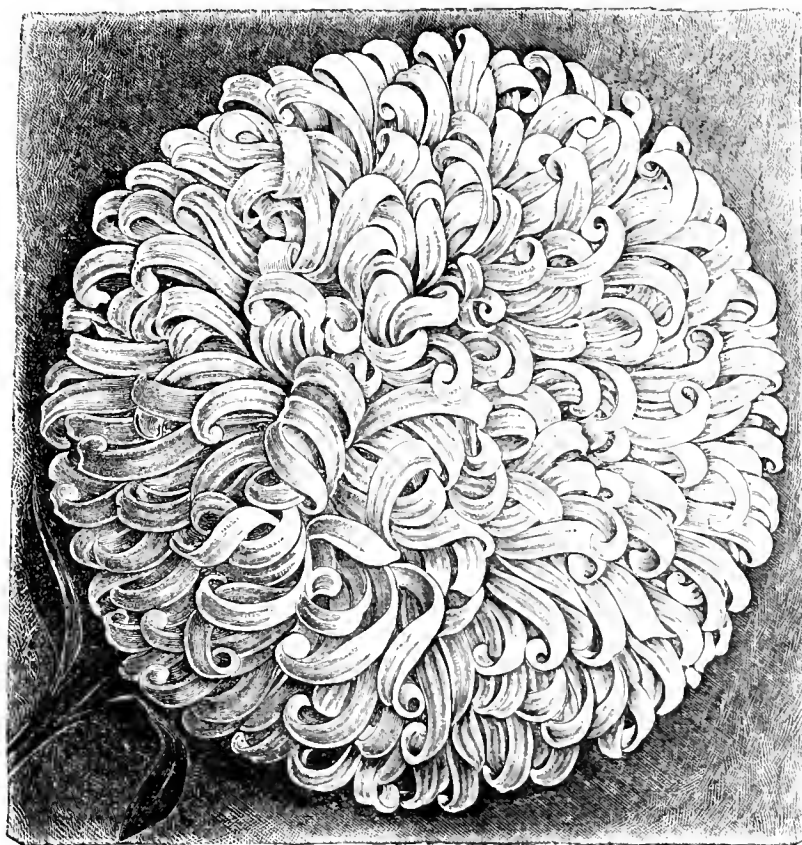


FIG. 70.—THE WHITE COMET-ASTER.

Harry Veitch, opened first flower on August 15, is rather a slender grower, with flower-spike of medium height, with medium-sized flowers irregularly disposed on the spike, and of the darkest shade of scarlet yet seen in this race, resembling that of *M. Duchartre* of last year. The lower petals are blotched with creamy-white, but the unfortunate depression of the top-centre petal, inherited from its *Sandersi* parent, and only markedly seen in this one variety of this set, prevents the beauty of the flower from being fully seen.

Goliath.—Opened first flower on September 20, nearly six weeks later than any of the other sorts, and is a good vigorous grower, with large tubular and not fully-expanded flowers of a deep shade of rosy purple, evenly flaked with carmine, and the lower petals veined with white. It may be that the extreme inclemency of the weather at the late season of its coming into flower prevented this variety from being seen to full advantage.

I may add to the above notes that, having been told by a horticultural friend (whose opinion I usually hold in the very highest estimation) who had visited *M. Lemoine's* garden in the autumn of 1889, that the flowers he saw there were so much larger in size, and brighter in colour, than those borne by the same varieties when grown in my garden, that he hardly recognised them when he saw them afterwards with me, I, this autumn, made the journey to Nancy, specially for the purpose of seeing for myself whether this were so or not, and whether Irish-grown flowers were really so inferior to those grown in sunny France as they were said by my friend to be. I am pleased to be able conscientiously to assert that, whatever the French flowers may have been in 1889, those I saw there this year were certainly not finer or brighter-hued than those in my own garden. The excessively severe and most abnormally prolonged

winter experienced last year in France, which prevented *M. Lemoine* from getting his bulbs into the ground till quite the end of May, may possibly have caused his plants to make weaker growths, and to produce somewhat smaller flowers this year than they usually do. *W. E. Gumbleton, Belgrove, Queens-town, Ireland.*

WHITE COMET-ASTER.

M. Chr. Lorenz, of Erfurt, sends us an illustration (fig. 70) of his white Comet-Aster. The flower, which resembles very closely a pure white large-flowered Japanese *Chrysanthemum*, is larger and more double than is usual, the petals being much longer and more twisted. Each petal is ribbed, giving thus to the flower a peculiarly elegant appearance. The colour is glossy satiny white. No doubt this Aster will become a general favourite.

HOME CORRESPONDENCE.

WHY SHOULD GARDENERS STUDY?—Kindly allow me a word in reply to "J. C. C." of Ponder's End. He doubts (p. 493), my advice being practical, but I can assure him that, broadly speaking, it is the men who study most to the purpose, that get on best in the battle of life. That old saying of Bacon's "Knowledge is power," was never so true as it is to-day, and especially so far as gardeners are concerned. I was born on a small farm, and am not ashamed to own to having milked cows, even as an under gardener! My first place was as a garden-boy at a shilling a day, and out of that I paid two shillings weekly to the gardener as an apprentice, and never did I spend such a small sum to so much advantage. Certainly I had some parental assistance besides my wages, but only in the form of food. Ever since I earned my first few shillings a week, I have always found it possible to spend a little on good books. I do so still, and I am quite sure that as an investment pure and simple the practice has repaid me. "J. C. C." asks if men who are hard-worked, or who have fallen on "hard times," would not feel their position all the keener if they had studied the books mentioned in my list (p. 461). My answer is, no! decidedly not! Education of the right kind is a blessing to the well-to-do, but it is ten thousand times a greater blessing to the poor. The kind of education that merely makes one dissatisfied is a bad education! But there is another side to the question, and one must be careful not to confuse causes with effects or results; but "J. C. C." and his young acquaintances may certainly take to heart the axiom in human economy, that the most ill-educated members of any profession or calling, are always those obliged to work hardest and longest. Gardening, as a calling, is often said to be overcrowded, and "J. C. C." is evidently one of those who believe this, since he asks, "What is to become of them all?" (*i.e.*, the young gardeners). Well, I can tell him. The best men, as a rule, will get the best places, and the worst men will naturally get the poorest places! Now it is pretty widely agreed to-day, that no calling is over-stocked with good men, but that most callings are over-stocked with men who take no intelligent interest in their work. I feel sure that it is so in the case of gardening generally. It is not enough to study as "apprentices in really good establishments," but study must go just as one's food and clothing is obtained, *viz.*, as a continual necessity. Even a man who studied Cucumber or Tomato culture so thoroughly as to grow them better and cheaper than his fellows, would soon reap the harvest of his ability, just as has done the foreman who now directs his labours. My argument is, that gardeners should read and study, not only to enlighten themselves as to the world of nature and art around them, and so make their lot, however hard, happier than it would otherwise be, but especially to make themselves better and more valuable to their employers. The more a man reads, other things being equal, the quicker and clearer he can think; and the better he can think, the easier and the cheaper he can work. There is no getting over the logic of hard facts; and in the struggle for existence and place amongst gardeners, it is almost always the weakest that go to the wall. And of course it is these who complain the most, although complaining of the inevitable will never help "J. C. C." nor his young friends, nor anybody else. I am afraid to say what I think of "J. C. C.'s" and "W. L.'s" desire that the gardening papers should each and all contain "an article on botany." Why, are they not filled with articles on botanical subjects from one year's end to the other? To me they seem to become more interesting and instructive every week, and always filled with new problems, or with new phases of old ones. My advice to young gardeners is, to read and study all the good books they can get hold of, and so strive to become happier and more useful men. This is not mere talk, but a programme I myself shall follow as long as I live. The discreet purchase of helpful books can never prove a pecuniary loss to a gardener with intelligence enough to make the best, or even a fairly good, use of them. When a man starts in business of any kind, it is frequently the capital he puts into that business which enables him to get a good living out of it. This is equally true of a gardener who, by some little personal self-denial finds the little capital with which to buy helpful books. He is simply investing his capital in the business of his life, and nothing pays better in the long run than does expen-

diture of this kind on a man's own genius or special calling. When that noble old gardener and Curator of Kew, John Smith I., came to London from Scotland, he possessed only two books on gardening, but, as he himself told me, those two books enabled him to place himself head and shoulders above all the young gardeners then employed at Kew. I do not altogether believe the old story, "Tis not in mortals to command success," but I do believe that we may at least not only do our best to deserve success, but actually win success by our own endeavour; and even the men who slave in London market gardens from 6 A.M. to 8 P.M., might at least spare a few pence each week for books, or adopt other simple means of self-education so as to be worthy of a more congenial occupation. After all, what is the work in any market-garden, however hard, compared with that of a Staffordshire iron-puddler, a potter, a collier, or of a Sheffield grinder? or, think of the dangers and trials of "those who go down to the sea in ships!" I think if "J. C. C." would send me a list of gardeners who have not done well in this world, I might return him that list as containing a list of men who did not read good books, did not adopt any of the advantages of self-improvement now within the reach of all; of men who are miserable because they grumble and whine about the "badness of the times," and have always been hanging around the nurseries pestering people to help them, simply because they have not the energy to shift for themselves. *F. W. Burbidge, M.A., F.L.S.*

LILIAM WALLICHIANUM SUPERBUM.—Mr. Baker, in his description of *Lilium Wallichianum superbum*, in *Gardeners' Chronicle*, p. 480, seems in doubt if it should not be regarded as a species, and I venture to think it is a doubt well founded, for it has little in common with the well-known *L. Wallichianum*. Further on, he says that *L. nepalense*, Don., and *L. ochroleucum*, Wallich, are two names for one and the same plant. Will Mr. Baker say if Wallich's drawing of "ochroleucum," to which he refers, resembles in any way the flower of the true "nepalense?" Mr. Elwes, in his magnificent *Monograph of Lilies*, gives, under the name of *L. nepalense*, an illustration admittedly drawn by Fitch from Wallich's dried specimen of *L. ochroleucum*, and, without doubt, the drawing bears a much greater resemblance to the Lily described by Mr. Baker as "*Lilium Wallichianum superbum*" than it does to the real "nepalense." Wallich described his ochroleucum as "dull yellow," which admirably fits in with the colour of Mr. Baker's *Lilium Wallichianum superbum*; but it would require the wildest stretch of imagination to reconcile such a description with the flower of *L. nepalense*. Indeed, it is difficult to believe that such a man as Dr. Wallich described the flower of *Lilium nepalense* as 5 inches long, and of a dull yellow colour; or that he gave it a descriptive name, totally inapplicable to it. *J. M.*

FIGS.—Amongst the evidences of a considerable development in fruit culture, which hardly finds encouragement in connection with popular fruit-growing agitations, is the large demand now growing up for good Figs, which it is difficult to meet. Whether due to the more-refined taste which now exists in relation to fruit products, or due to the increased wealth of the country, certain it is that Fig growing is developing rapidly, both in private gardens and in market establishments. Amongst those trading firms who are enabled to feel the pulse of Fig culture, as it were, few, perhaps, are better placed than Messrs. Jas. Veitch & Sons, Chelsea, for they produce many hundreds of fine fruiting plants of a score or more of varieties, in pots, yearly, and find themselves now quite cleared out at the end of the season; whilst but a few years ago, the sales of such plants hardly exceeded dozens. The advantage of pot culture is found in having numerous varieties, the plants well under control, kept somewhat root bound, fruiting more freely than when planted out, facility for removal to diverse houses or temperatures, and securing of all the crops the plants produce. Amongst newer varieties, the Negro Largo, so free to bear and highly flavoured, is in great demand; whilst a yet newer form, *Violette Sepor*, very stout in growth, short jointed, and an exceedingly free cropper, is a valuable addition to the varieties—the fruits are of rich flavour and very luscious. A comparatively flattish round and distinctively high-flavoured form of the Brown Turkey promises to prove a capital addition also. It is worthy of notice that Figs, like Tomatos in an uncooked state, are not to every one's taste at first, but once they are liked, then they never tire. There are few

more wholesome or healthful, and, in a restricted sense, better medicinal fruits, than ripe figs. *A. D.*

WHAT IS A HARDY HERBACEOUS PLANT?—The difficulty of defining this term has been before me for many years, and when I have been selected to judge at provincial flower shows, and have asked for instructions as to limitations, have generally been told "not to be particular." In fact, I see no way out of the difficulty, except to exclude from the term "herbaceous" all monocotyledonous plants; otherwise, we must draw a line in the middle of a species, such as "Iris," and if you try to exclude "bulbs and corms," where do "tubers" begin? In terrestrial Orchids, would *O. foliosa* come under bulbs, and *Cypripedium spectabile* under "Hardy Herbaceous?" And what shall we do with *Trillium*, *Alstroemeria*, *Anthericum*, and such-like? The limitation I have proposed would not do away with the difficulty of drawing a line between "herbs" and "shrubs" in their botanical definition, as many a genus must be split in two—*Veronica*, for example. If it is decided to leave the matter to the judges, the chief objection would be, that some exhibitors are more scrupulous or more cautious than others in their acceptance of the limits of the class in which they exhibit. *C. Wolley Dod, Edge Hall, Malpas.*

THE NAME "JERUSALEM ARTICHOKE."—Mr. Dixon, on p. 482 of the *Gardeners' Chronicle*, writes a long dissertation on the Jerusalem Artichoke. He tells us that Jerusalem is, in this name, corrupted from *Girasole*, which is Brazilian (Portuguese?) for Sunflower, and that the plant being "a native of either Peru or of a district in Brazil" (though, as he afterwards tells us, it was introduced into Europe from Canada), brought its Brazilian name with it to Europe. In the first place, this statement revives an error which botanists have long since corrected, as to the native country of the Jerusalem Artichoke. No species of Sunflower, as far as is known, is a native of Brazil, and though two or three are found in Peru, they are all of fruticose habit, and not all likely to be the parent of the Jerusalem Artichoke (see De Caudolle, *Prodromus*, vol. v., p. 590). It is true that students of American botany have been a little puzzled about the origin of this plant. Asa Gray formerly referred it to *Helianthus doricoides*, but in his *Flora of North America* he made it a separate species, though he tells us that *H. giganteus* also produces edible tubers, called Potatos, in Canada. It seems probable that more than one species of Sunflower produced edible roots, when cultivated by the natives of North America, perhaps before they had intercourse with Europe. Then Mr. Dixon, having drawn what he considers an infallible conclusion from a false premise, proceeds to speak disparagingly of those who dare to differ with him, naming me. He does not, however, attempt to answer the question I formerly put, the substance of which I ask leave to repeat here. Granted that the reasoning seems plausible which contends that Jerusalem, as prefixed to Artichoke, is a corruption of the Italian *Girasole*, how is it to be explained in the following combinations:—Jerusalem Cowslip (*Polmonaria*), Jerusalem Sage (*Phlomis*), Jerusalem Thorn (*Parkinsonia*), Jerusalem Cross (*Lycnius chalcidonica*), Jerusalem Oak (a species of *Teucrium*), Jerusalem Star (a *Cerastium*), and Jerusalem Gourd? Perhaps this list of Jerusalem names might be lengthened. My contention was that our ancestors were in the habit—perhaps from the days of the Crusades, of referring the origin of strange plants to Palestine, and so Jerusalem came into the name. I have given eight names, and of one of them a somewhat far-fetched and pedantic derivation is invented, but no explanation is offered of the other seven. Is it unlikely that the name was given to all in the same trivial and casual way, and signifies nothing more than the ignorance of the namer? *C. Wolley Dod, Edge Hall, Malpas.*

THE DAY LILY OF THE DESERT (HESPEROCALLIS UNDULATA).—I wonder how many English or Continental lovers of flowers have seen this early summer-flowering novelty, described as "one of the most beautiful and characteristic plants of the desert regions of California." One traveller reports having counted no fewer than thirty flowers on one stalk, of a pearly-white, with delicate greenish stripes. It is also fragrant—in addition to which must be mentioned the fact that the bulb is edible—having a pleasant taste, and may be eaten raw, or cooked like Onions. The Indians are said to look upon it as a veritable treasure, not only refreshing the eye with

its wondrous beauty, but proving of valuable utility as well, the same plant producing both "food" and "drink." The bulb grows as large as an Onion in clear sand, 6 or 8 inches below the surface; some have been found resting on a bed of moist gravel. One Californian editor speaks of it as being "one of the handsomest flowers found in April." As I see bulbs were procurable in California in the autumn of 1889 at a very reasonable rate per 100, surely our bulb growers can by this time manage to procure it? *Pioneer.*

SEEDLING CHRYSANTHEMUMS.—It is not difficult to make an annual of the *Chrysanthemum* in regard to its time of blooming, when raised from seed. I saw at the Rye Croft Nursery, Lewisham, recently, a batch of seedling *Chrysanthemums* raised from seed sown on the 25th of March last. Mr. H. J. Jones said that a portion of the seed came from America, and a portion he saved on his own nursery. A plant of a Japanese variety showed signs of seedling, and it ripened sufficiently to gather by February. Mr. Jones said that when he rubbed it out of the seed pods, it looked as if not a plump seed had been produced; but he sowed it on bottom heat on the date above mentioned, and some plants put in an appearance. These were pricked off, and grown on into size gently until they were placed into their blooming pots. As soon as they were established, the tops were pinched out, with the result that they soon broke into three and four shoots each; and, all being well advanced in bud, were housed early in October. There is promise that all of them will bloom, and that shortly. The plants are now under glass, and some, among them a promising yellow, are showing colour. Mr. Jones stated that he assisted the ripening of the seed by standing the pot, in which the plant maturing its seed was, upon a hot-water pipe. It is, therefore, apparent that the seed of the *Chrysanthemum* can be sown, and the seedlings got into bloom, in the space of eight or nine months. *E. D.*

RASPBERRY SUPERLATIVE AND CARTER'S SEMPER FIDELIS.—The superiority of *Superlative* in every way over *Hornet*, *Fastolf*, and others, was affirmed by Mr. J. Sheppard in these pages early in the year. *Superlative* is not quite so early as those, but it has the advantage of being much larger and more productive; and it being a strong grower, it requires more room and but few stakes for support. I planted fifty canes of *Superlative* two years ago, and it gave so much satisfaction, that I planted more of it the following season. I may remark that from three rows of *Superlative* we have had more fruit than from twice the number of rows of other well known varieties, so that I intend to grow it still more largely in the future. At one of the meetings of the Royal Horticultural Society, this fruit was shown by Messrs. Veitch, and was far ahead of any others. For preserving it is much liked; and the fruit is less liable to decay than others, as owing to the robustness of its growth, the fruits are well elevated above the foliage. Another recommendation that this variety possesses is the length of time that it continues to fruit, which is longer than that of any other variety I know of, and even the smallest growths fruit after larger canes have ceased to bear. Being a strong grower, spring and autumn dressings of manure are necessary. The *Raspberry Semper fidelis*, is chiefly to be valued for its goodness as a variety for preserving, as it makes a jam distinct in flavour from all others; and is much liked by those who prefer more acidity than is found in other Raspberries. The colour of the preserved fruit is excellent, and the fruit is valued on that account. *Semper fidelis* is a free-growing variety, late, very prolific, and not much liked by the birds. It is a much smaller fruit than *Superlative*, and is fit only for preserving or cooking. *Geo. Wythes, Syon House.*

DEVONSHIRE FERNS.—Mr. Drury's criticism at p. 420 is interesting, and I am glad that my discrepancies in writing on Devonshire Ferns have drawn out from so great an enthusiast such a long discourse. My paper, however, was not written in a comprehensive spirit, neither does it require that "discriminating eye" spoken of to perceive this, as it is quite easy to do so in the ordinary way. I have now dipped a little deeper into the subject, and note that there were yet other varieties or species of wild Ferns in Devon apparently unknown to Mr. Drury, since he has omitted to mention them, and I have also discovered that the *Lomaria spicata* was popularly known as the rough Spleenwort even before the days of that quaint old writer, Gerard—so far

so good; and now we come to the question of manipulation in reference to varieties. My contention is, that when a wild Fern having some variation from the species to which it belongs, is removed from its natural habitat to a garden, where, after a lapse of time it is proved that the said variation has developed, or, it may be, remained constant, then it may be regarded as a variety of that species, and this is precisely where the manipulation I spoke of comes in. When I was a nursery traveller, I was in touch with many rich collections of British Ferns in different parts of the country, and long ago was convinced that there were distinctions with little differences in many of the so-called varieties, therefore, we can well afford to sweep off a great number of them, and their tedious ugly names with them; in fact, to put the whole thing in a nutshell, there are said to be nineteen genera of British Ferns, subdivided into forty-five species, which, according to Mr. Drury, comprise some 1800 forms or varieties. Now, my candid opinion is, that if all these could be brought together at a Fern Congress, quite four-fifths would, if the work were done rigorously, be cast aside, as being insufficiently distinct. Then, the varieties that remained were re-named with short English names, after the manner of florists' flowers, as, for example, *Nephrodium filix-mas*, Adam; *Asplenium filix-femina*, Eve; *Aspidium aculeatum*, Eclipse; *Scolopendrium vulgare*, Unique;—there would be more hope of finding a named collection of British Ferns in well-appointed gardens throughout the land. *W. Napper, Chelsea.*

NEPHROLEPIS PECTINATA.—On the back wall of a north house in Messrs. Thomson's nurseries, Sparkhill, Birmingham, a plant of this creeping form, in a rustic stand, was placed a year or two since, and it now occupies a considerable portion of the wall, so freely has it thrown out and extended its growth. It has a most pleasing appearance, and I recommend it for such a purpose. The house in which it is thriving so well is devoted to Ferns and young Palms. *W. D.*

ROSES MADE OF BUTTER.—Most people would probably imagine butter to be rather an unsuitable material—especially in warm weather—for making floral designs. At the Dairy Show, recently held at the Royal Agricultural Hall, an enterprising exhibitor (whose name unfortunately I do not remember), however, was apparently of a contrary opinion. At any rate, by some means or another he contrived to make a display of Roses, which at a distance of a foot or two looked almost natural. It had never before struck me so forcibly that *Maréchal Niel* Roses were of the colour of certain kinds of butter, but I am afraid the æsthetic ear (if I might use such a term) would be highly offended at hearing anyone describe the flowers of this fine Rose as being "butter-coloured." Golden-yellow sounds ever so much nicer. What rendered these butter *Maréchal Niels* so effective was the use of natural Rose stems and foliage, on to which the unctuous blooms and buds were artfully stuck by means of pieces of thin wire. The shape of the flowers and the delicacy of the petals were all that could be desired from a florist's point of view. *Mitza.*

BIGNONIA RADICANS.—It is very seldom now that one sees the old *Bignonia radicans*, and yet when planted in a suitable position, it is one of the finest hardy climbers we have; at least, it is hardy in most places, although I have known it killed down in severe winters, but even then it generally breaks up again from the crown, and quickly covers a large space of wall, and clothes it with beauty. To see it at its best, it must have a southern aspect, and not be planted in rich soil, a deep sandy loam being the most suitable, as then its growth is not too strong, and the shoots are easily ripened. The way to treat the plant is to run up and train out the branches in a fan-shaped manner, or in such a way as to cover the wall space, and leave them a foot or so apart, and each winter to spur back close the whole of the shoots made during the summer, as it is on the young ones made each year that the flowers are borne; these come in dense clusters at the ends, and each flower forms a tube 3 inches or so long, with distended mouth, the colour being a rich deep chestnut-brown when the blooms are open. Our plant is on the end of a shed and greenhouse, and covers a space of about 150 square feet; but if it had scope, it would quickly double that, as it is very free-growing. Just now, almost every shoot, and there are a great many, is terminated by great clusters of flowers, and therefore the effect produced is striking and fine. *J. Sheppard.*

CEREUS J. T. PEACOCK.—From the specific name it will be easy to infer the origin of this plant, as it was widely known that the late J. T. Peacock, of Hammersmith, was a great connoisseur and collector of this class of plants, and we believe it was imported direct by that gentleman. To those unacquainted with the plant, it is by no means a gigantic or unmanageable thing; on the contrary, it is very similar in growth and flower to the flat-stemmed, leaf-like section, called

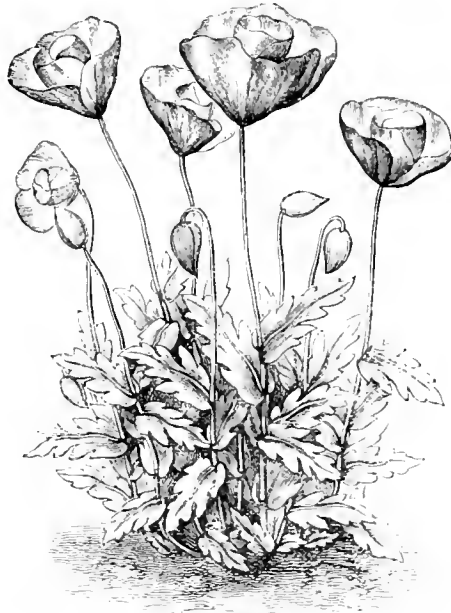


FIG. 71.—*PAPAVER GLAUCUM*: TO SHOW HAIRY FLOWERS, BRILLIANT SCARLET.

Phyllocactus, but with the very great difference that it far surpasses in gorgeousness, both in size and colour, any known member of that genus. It is a matter of common knowledge that in the flowers of many Cacti there is very little difference in the texture between the sepals and petals, there being no sharply-defined difference between them, but occasionally there is a difference in the colour. In J. T. Peacock the sepals or outer whorl of the flower are brilliant scarlet, the petals or inner series are



FIG. 72.—*PAPAVER GLAUCUM*.

somewhat broader, and a rich vivid purple and scarlet, which, with the yellow tassell-like bunch of stamens in the centre gives this flower a gorgeous appearance. Fortunately, like most other Cactuses, it is easy to accommodate, 5 or 6-inch pots are sufficient to grow good-sized specimens planted in the usual light loamy compost, taking care not to over-water them, but during the summer, as they delight in abundance of sun and air, there will not be much danger of their coming to grief. It is during the

dull days of winter, when the plants are dormant that care must be exercised in watering. Almost every part of the plant roots readily as cuttings. This plant, as well as all the *Phyllocactus* section, will succeed in all temperatures if not below freezing. They can withstand long periods of drought without injury, and should be fully exposed to the sun. In this respect we have seen, on closely-allied plants, the sun's rays fall so direct and concentrated as to melt large pieces of indiarubber hose, yet it did not seem to injure the plants. Shade and damp soon weakens them. *F. R.*

NOVELTIES.

PAPAVER GLAUCUM.—Messrs. Ernst Benary, of Erfurt, announce as a novelty, a scarlet-flowered Poppy, *P. glaucum*, and for the illustrations of which we are indebted to the famous firm at Erfurt. The plant, as described in Boissier's *Flora Orientalis*, i., p. 116 (1867), is glaucous, with only a few appressed hairs on the flower-stalk, with pinnately-lobed leaves and deep scarlet flowers. The plant is a native of Northern Syria, where it flowers in early spring. We have not seen the flowers, but the venation of the petals appears different from what we should expect to see in a Poppy (see figs. 71, 72).

SOCIETIES.

ROYAL HORTICULTURAL.

TUESDAY, October 27, 1891.—The meeting of the above society took place at the Drill Hall, James Street, Westminster. The principal feature of the exhibition was the collection of coloured leaves, such as the diminishing light and lower temperature of autumn bring about. It is hardly possible to conceive a more beautiful or interesting "exhibit" than was made on this occasion. But the British public either did not think so, or did not know of the exhibition. Be this as it may, an interesting display of Orchids, a remarkable show of fruit, and a sprinkling of good Chrysanthemums—foretaste of what is to come—made up a "meeting" which was certainly not the least interesting of the season. Adverting first of all to the autumn leaves, we have to note the collection exhibited by Mr. E. C. Smith, of Cobham, and to which a silver medal was awarded. Though not numerically so large as some other collections, this was the most appropriately arranged and the most effective, so far as beauty is concerned. American Oaks and yellow Horse Chestnuts were especially conspicuous; while as a margin to the whole, the exhibitor had the eminently happy thought of placing a wide belt of green moss, thickly studded with a scarlet fungi such as *Amanita muscaria*, *Agarius rachodes*, *A. rubescens*, *Cantharellus cibarius*, and others which were delightfully appropriate and effective.

Next in order on the left, proceeding up the hall from the entrance, was a large collection from Syon, comprising no fewer than forty-one varieties of Oak. This was instructive, not only for the number and interest of the specimens, but from the example it afforded of the pernicious effect of a London atmosphere on the coloration, for though consisting mainly of the same species as shown in other collections, the color of the specimens from Brentford was dull and ineffective.

The collection from Weston Birt, Gloucestershire, was very rich both in species and in colour. We can only note a few of the more remarkable illustrations, *Cornus sibirica*, with its red rich twigs; *Acer rupestris*, *A. septemlobum*, American Oaks, particularly *O. Catesbeii*, a small-leaved species, but specially rich in colour; *Enonymus alatus*, *Pyrus arbutifolia*, &c.

The collection from Combe Wood was naturally full of interest, the more so on this occasion as it was reinforced by contributions from Mr. Antony Waterer of Woking. *Andromeda arborea*, *Acer palmatum*, *A. platanoides*, *Liquidambar*, *Rhus glabra*, *Cerasus Watereri*, *Pyrus arbutifolia*, *Berberis Thuu-bergii*, *Ribes missouriense*, very deep claret red; *Azalea occidentalis*, *Syringa pekinensis* were among the most striking of this collection.

Messrs. Cutbush sent a good miscellaneous group, less well coloured than some others. The same exhibitors showed a nice collection of *Pernettya*, with berries of different colours.

Mr. H. Veitch's lecture was chiefly devoted to the enumeration of the most desirable species to plant for the sake of the autumn coloration. With the splendid resources at hand, he had no difficulty in enforcing his remarks practically. To report his lecture would be to give some pages of a dictionary, for the alphabetical order was adhered to, but as the lecture was delivered, and the specimens in illustration, it is quite appropriate to describe it as a brilliant discourse. In the discussion which followed, Mr. Bunyard took part, emphasising the necessity for isolating the plants, so as to get their full beauty; while Mr. William Paul pointed out the superior advantage some specimens had over others in the matter of their longer duration. Mr. Paul considered that the nature of the soil had much to do with the rich coloration of particular species.

Chrysanthemum occupied a good deal of space, and amongst them were several sterling novelties of English raising, besides sports of well-known varieties. Orchids were present in some quantity, considering the late period of the year, and much hardy fruit and some Grapes were shown.

Floral Committee.

Present: G. Paul, Esq., in the chair; and Messrs. B. Wynne, H. Herbst, R. Dean, G. Bryceson, H. B. May, G. Phippen, C. Jeffries, W. E. Poë, C. E. Pearson, F. Ross, G. Gordon, H. Cannell, W. Furze, C. Noble, and J. Walker.

Some well-berried *Pernettya elegans* in variety came from Messrs. W. Cutbush & Son, Highgate Hill, one of the best being *P. macrocarpa*, with berries of a bright crimson hue. The bright-flowered *Clerodendron fallax* in small examples came likewise from the same firm. It has especial value at this season.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, exhibited a pretty white-flowered *Bouvardia*, *Jasminiflora alba odorata*. The reverse of the floral segment is pink, the tint appearing to slightly suffuse the white.

A compact and dwarfer form than the common *Richardia* (*Calla*) *athiopica*, was shown by Messrs. R. Veitch & Son, Exeter.

Messrs. B. S. Williams & Son, Victoria Nurseries, Upper Holloway, N., showed a plant of *Arisaema Wrayi*, of the height of 2½ feet, palmate leaves of a green colour, stem and leaf stalks green with dense fawn-coloured marblings. The spathe pale-green in all parts except the interior of the hooded portion, which is deeper in tint. The spadix is terete, purple and semi-pendant.

We are so near the Chrysanthemum shows, that it is not to be wondered at if Chrysanthemum were a leading feature at the Drill Hall on Tuesday last. Messrs. Veitch & Sons, nurserymen, Chelsea, had a bold and striking group of plants, generally well bloomed, of leading varieties of Japanese varieties, as *Viviana Morel*, *Miss M. A. Haggas*, *Robert Cannell*, *Louis Behmer*, and *Alberic Linden*.

Mr. T. S. Ware, Hale Farm Nurseries, had three blooms of *Viviana Morel*, but paler than those shown by Messrs. Veitch & Sons; *Amos Perry*, a large golden-yellow incurved Japanese; and *La Comdaine*, in the way of *Marsa*, delicate pink; two blooms of this were shown, but not fully developed. Mr. George Wythes, gr., Syon House, Brentford, set up a stand of blooms of leading varieties of Japanese and incurved Chrysanthemum, cut with long stems and supported by means of wire; there were about 120 blossoms, backed by *Falrus* and margined with small Ferns. It was an effective exhibit, but it is doubtful if the idea can be extended generally to Chrysanthemum exhibitions.

From Messrs. J. R. Pearson & Sons, Chilwell Nursery, Nottingham, came three fine blooms of the new incurved Chrysanthemum *M. R. Bahaunt*, one of the Queen type, very large and full, grandly incurved, the colour pale rosy-cerise, with silvery-salmon reverse (Award of Merit).

Mr. Robert Owen, Floral Nursery, Maidenhead, had a large number of Chrysanthemum, large flowering and Pompon; including *Achievement*, white, with slight yellow centre, a seedling from *Madame Desgranges*, and an October-flowering form of *M. R. Bahaunt*, *Madame Darrier*, a new Continental incurved, the flower of the type of *Venus*, but with the colour of *Cherub*, which the Committee wished to see again, when more fully developed; *Cardinal Foulon*, bright claret-crimson shaded—an attractive-looking reflexed flower; *Felix Cassagneau*, fine deep golden apricot—attractive in colour, shape of flower of *Avalanche*; two very fine blooms of *W. Tricker*, one of the new American varieties, delicate rose, a large and full

incurved Japanese, and with it one bloom of *Nineveh*, an older variety, and said to be identical with *W. Tricker*, and the original of it; *Felix Mourant*, pale orange-crimson, in the way of *M. W. Holmes*; *Permanent*, Japanese, incurved, which opens delicate pink and becomes blush; *Confidence*, bright pink, broad petalled, reflexed; *Mrs. Nisbet*, shaded claret crimson, very fine in colour, broad petalled (Award of Merit); *G. C. Schwabe*, golden yellow, tipped with reddish dark-brown; and several hybrid Pompon and pompon varieties as *Lady Emily Fitzmaurice*, yellow, very free; *Profusion*, golden-yellow, very free; *Golden Shower*, pale-gold, very bright; and several others.

Mr. W. Wells, Nurseryman, Earlswood, had *William Wells*, a very fine and distinct primrose, sport from *Middle Blanche Pigny* (Award of Merit).

Messrs. Pitcher & Manda, Nurserymen, Sydenham, had *Henry Ballantine*, a deep golden-yellow Japanese, but rather flat, which the Committee wished to see again: *Louis Behmer* and *Mrs. Flann*, a pale coloured Anemone variety. From an exhibitor whose name did not transpire, came *Robert Smith*, a pale bright chestnut red sport from *Dr. Sharpe*, not showing so much of the quilled petal as the variety from which it sprang—larger and fuller (Award of Merit).

From Mr. W. Mitford, gardener to *W. Kaye, Esq.*, Worcester Park, Surrey, came an unnamed orange, brown and buff sport from the yellow anemone *George Sand*, which is of a promising character.

From Mr. H. J. Jones, Ryecroft Nursery, Lewisham, came a plant of *Louis Behmer*, carrying superb blooms, bright pale lilac, with a silvery blush reverse, very fine, the hairy petals being well developed (Award of Merit); one of *C. E. Shea*, a yellow sport from *Madlle. La Croix*, and a plant of *Felix Cassagneau*, described above. Mr. R. Falconer Jameson, Hessel Hall, had blooms of *M. R. Bahaunt*, *Bouquet de Dame*, pure white; and *Marvel*, white with slight purple stripes.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. James O'Brien, J. Douglas, E. Hill, Hugh Low, H. M. Pollett, Maxwell T. Masters, L. Castle, T. B. Haywood, F. Sander, D. B. Crawshaw, and Sydney Courtauld.

Messrs. F. Sander & Co., St. Albans, exhibited a group of Orchids consisting of six varieties of *Odonoglossum grande*; and plants of *Vanda cœrulea*, *Aërides Lawrenceana*, *Oncidium incurvatum album*, *Peristeria guttata*; a fine form of *Lycaste Skinnerii alba*; *Cattleya Bowringiana*, one having six and the other five spikes; *Lissochilus Krebsii*, *Cypripedium Maynardii superbum* (previously Certificated), *Dendrobium O'Brienianum*, an extraordinarily graceful species with long pendent sprays of greenish flowers, to which a Botanical Certificate was awarded, and various other Orchids. They, moreover, staged some fine masses of the true autumn-flowering *Labiata*, some of them with 100 bulbs, and all in grand condition, as examples of what suitable packing and quick transit are able to do. Messrs. Collins & Collins, of the Cumberland Park Nurseries, Willesden Junction, exhibited a very creditable and showy group made up of many varieties of *Oncidium varicosum*, *O. prætectum*, *O. Forbesii*, *O. curtum*, and *O. tigrinum*. The group displayed excellence in the varieties and much cultural skill. Mr. H. A. Tracy, the Orchid Nurseries, Amyand Park Road, Twickenham, showed a specimen of *Aërides suavisimum*, and a supposed hybrid *Cypripedium*, showing similarity to *C. Hookerii* × *C. Lowianum*. *E. G. Wrigley, Esq.*, Victoria House, Dunkinfield, Cheshire, sent flowers of a *Dendrobium* greatly resembling *D. litiflorum*, but which is said to differ in growth; indications of growth was requested. Also a flower of *Pleione*, of which the committee desired to see a bulb before naming.

Admiral Caton, Hazelwood, King's Langley, exhibited a group of *Dendrobium formosum giganteum*, the largest specimen having over thirty flowers; a vote of thanks. *F. Wigan, Esq.*, Clare Lawn, East Sheen, Richmond, staged a fine plant of *Cattleya Warocqueana* with six flowers, and a very remarkable broad-petalled form of *Cypripedium insigne* of the *C. I. Maulei* group. Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, sent a grand variety of *Cypripedium* named *C. Pitcherianum superbum* (*Spicerianum* × *Harrisianum superbum*), the variety was superior to the type. Messrs. Pitcher & Manda, United States Nurseries, Hextable, Kent, again sent their form of the beautiful *Cypripedium Arthurianum*, whose dorsal

sepal is dotted with purple as in *C. insigne Maulei*. *E. J. Lucas, Esq.*, Warham Court, Horsham (gr. Mr. G. Duncan) staged a pan of several plants of a form of *Angraecum bilobum* from Dutch New Guinea; also cut flowers of *Oncidium crispum*, *Laelia anceps Dawsonii*, and *Cattleya labiata vera*. *E. H. Woodall, Esq.*, St. Nicholas House, Scarborough, forwarded a portion of a magnificent spike of a very fine form of *Vanda Kimballiana*. *Chas. Ingram, Esq.*, Elstead House, Godalming, sent some plants of *Cattleya Warocqueana* bearing together over thirty blooms, a plant of *C. calummata* ×, and the beautiful *C. radium* × (*Lawrenceanum* × *Spicerianum*), to which an award of merit was accorded.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. G. Woodward, T. F. Rivers, R. Hogg, G. Bunyard, W. Wilks, H. D. Blackmore, C. Ross, W. Warren, J. Willard, A. Dean, A. Pearson, G. Reynolds, W. Bates, George Wythes, James Hudson, H. Balderson, F. Q. Lane, J. Smith, W. Denning, and J. Cheal.

Large collections of Apples and Pears formed the chief subjects for the committee to deal with; of smaller items a First-class Certificate was awarded to Mr. Reynolds, Gunnersbury Park Gardens, for white Grape Chasselas Napoleon, a French variety reputed an indifferent setter in France, but here vouched for by Mr. Reynolds as a capital setter and a free cropper. The bunches are of good size, tapering, and handsome, the berries large, semi-oval, and of very fair quality.

Mr. C. Ross, Newbury, showed a fine and handsome seedling Pear, but it was found to be somewhat gritty, and lacked flavour. Mr. Ross also showed spikes of fruit of *Phytolacca decandra*, about 12 to 14 inches long, and tapering. The berries covering the spikes resembling Blackberries, but were rather acid. This fruit grows luxuriantly in not too dense woods, and is strongly recommended as food for pheasants. Mr. King, gardener to P. Crowley, Esq., Croydon, was awarded a Cultural Commendation for a dish of very fine and handsome fruits of *Cox's Orange Pippin*, which the committee found to be finely flavoured, and showed how deficient in quality were some Apples sent for approval.

Mr. Chambers, Abingdon, sent a dish of a very handsome seedling Apple, which however did not meet with approval. The same must be said of a Seedling apple from Mr. Dyke, Southwell, as also one from Mr. Smith of Newark.

Mr. W. Taylor, Hampton, showed fruits of Apple *Jolly Beggar*. Mr. Debnam, gr. to A. Pears, Esq., Isleworth, showed a scarlet-flesh Melon, product of a cross between *Hero of Lockinge* and *scarlet Premier*, but it was much too late in the season for it to exhibit its best qualities. Also a dish of very fine fruits of *Tomato perfection*, to which a Cultural Commendation was awarded, came from Mr. Pears.

Of larger exhibits, by far the finest from gardeners was the splendid collection of some 115 dishes of Apples and Pears shown by Mr. Woodward, Barham Court Gardens, Maidstone. This fine lot included Pears, superb examples of *Gansell's Bergamot*, *Duchess d'Angoulême*, *Burré Hardy*, *Doyenné du Comice*, *Pitmaston Duchess*, *Easter Beurré*, *Nouveau Poiteau*, *Doyenné d'Alençon*, *Marie Benoist*, *Fondante Merriott*, *Ne plus Meuris*, and *Glou Morceau*. Of Apples very fine indeed were *Lady Heniker*, *Yorkshire Beauty*, *Lord Derby*, *Gascoigne's Seedling*, *Washington*, *Belle Dubois*, *Mère de Menage*, *Warner's King*, *Queen Caroline*, *Tyler's Kernel*, *Golden Noble*, *The Queen*, *New Hawthorn-den*, *Anne Elizabeth*, and *Northern Spy*, the latter unusually fine; also of dessert fruits, *Melon Apple*, *Claygate Pearmain*, *Cox's Orange Pippin*, *Reinette de Granville*, *Adam's Pearmain*, *Mother Apple*, *Wealthy*, and the beautifully coloured *Calville Rouge Précoce*.

Mr. G. Wythes, Syon House Gardens, showed some eighty dishes of Apples and Pears, many, however, being indifferent samples. The best Apples were *Golden Spire*, *Warner's King*, *Blenheim Pippin*, *Alfriston*, *New Hawthorn-den*, *Ribston Cox's Orange*, *King and Holland Pippins*, *Worcester Pearmain*, &c. Of Pears the best sorts were *Pitmaston Duchess*, *Marchal de la Cour*, *Uvedale's St. Germain*, *Reliance d'Hiver*, *Madame Denalke*, *Duchesse d'Angoulême* and *Beurré Diel*.

Mr. Markby, Wimbledon, had eight dishes of very fine Apples of trade collections. One of special excellence, the Apples generally being singularly fine, was that of 100 dishes of Apples and Pears staged by Messrs. J. Veitch & Sons, who had baskets of Alexander,

Bismarck, New Hawthornden, Peasgood's Nonsuch, Sandringham, Gloria Mundi, &c. Also of choice dessert varieties, Golden Brunette, Brownless Russet, Sturmer Pippin, Barnack Beauty, Rosemary Russet, Ribston Pippin, King of the Pippins, Cox's Orange Pippin. Of Pears excellent were Princess, Dayenné Boussoch, Duchesse d'Angoulême, Louise Bonne, Fondante de Cuerne, Beurré Baltet Père, Beurré Bachelier, and others.

Messrs. Paul & Sons, Chesbunt, had nearly 100 dishes of Apples and numerous varieties of Pears. The best of the former were Bedfordshire Foundling, Blenheim Pippin, Cox's Pomona, Warner's King, Beauty of Kent, Ecklinville Seedling, Cibston Pippin, Schoolmaster, Winter Queening, Golden Noble, Transparent de Croucelles. The Pears were very good samples.

Messrs. J. Peed & Sons, Norwood, had some fifty dishes of Apples, the best of which were Gold Medal, Glory of the West, Peasgood's Nonsuch, Stirling Castle, Beauty of Kent, Belle Pontoise, Sturmer Pippin, and Hoary Morning.

Mr. Barron sent up from the Society's Garden, Chiswick, sixty dishes of Apples all of fine appearance, including Anne Elizabeth, Bramley's Seedling, Grenadier, Alfriston, Cellini, Small's Admirable, Gascoigne's Seedling, New Hawthornden, Blenheim Pippin, Mrs. Barron—very fine, and Swedish Reinette. Also of Pears already for table, some twenty-four dishes, Maréchal Dillon, Maréchal Vaillant, Urbaniste, A. J. Moltke, Vireus, Flemish Beauty, &c.

Fruits in competition.—A few classes for fruits in competition for prizes were instituted at these meetings. Those for Grapes, six bunches for flavour, and six bunches any varieties, brought one competitor in each only. Mr. C. Reynolds, whose exhibits were as usual excellent. His varieties for flavour were Black Hamburg, Muscat Hamburg, West St. Peter, Mrs. Pince, Mrs. Pearson, and Muscat of Alexandria. The other six bunches comprised Groa Maroc, Black Hamburg, Muscat of Alexandria, Mrs. Pearson, and Chasselas Napoleon. Mr. Sage, Ham House Gardens, Richmond, was the only exhibitor of ten dishes of Apples, six to be culinary and four dessert. These were all good samples, and comprised Peasgood's Nonsuch, Withington's Fillbasket (query, Warner's King), Alfriston, Lord Grosvenor, Baumann's Red Reinette, King's, Cox's, and Blenheim Pippins, &c. Only two competitors entered in the class for six dishes of Pears, Mr. Hudson, Gunnersbury House Gardens being first with riper samples of Josephine de Malines, Marie Louise, Pitmaston Duchesse, Beurré Superfin, Lonia Bonne, and Beurré Diel. Mr. Sage was second, having good Flemish Beauty, Duchess d'Angoulême, Beurré Bachelier, &c.

List of Awards.

FLORAL COMMITTEE.

Awards of Merit.

- To Mr. R. Owen, for Chrysanthemum Mrs. Nisbet.
- To Messrs. J. R. Pearson & Son, for Chrysanthemum Mons. R. Bahaunt.
- To Mr. R. Owen, for Chrysanthemum Mons. R. Bahaunt.
- To Mr. R. Falconer Jameson, for Chrysanthemum Moos. R. Bahaunt.
- To Mr. W. Wells, for Chrysanthemum William Wells.
- To Messrs. H. Cannell & Sons, for Chrysanthemum R. Smith.
- To Messrs. Pitcher & Manda, for Chrysanthemum Louis Böhmer.
- To Mr. W. Furze, for Chrysanthemum Louis Böhmer.
- To Messrs. J. Veitch & Sons, for Chrysanthemum Louis Böhmer.
- To Cypripedium Williams' variety, shown by Messrs B. S. Williams, Upper Holloway.

Botanical Certificate.

- To Dendrobium O'Brienianum, shown by Messrs. F. Sander, St. Albans.

Award of Merit.

- To Cypripedium radiosum, shown by Mr. C. Ingram, Elstead House, Godalming.

MEDALS.

Silver Flora.

- To Messrs. J. Veitch & Sons, for collection of Cut Autumn Foliage.

Silver Banksian.

- To E. G. Smith, Esq., for collection of Cut Autumn Foliage.
- To R. S. Holford, Esq. (Mr. Quarterman, gr.), for collection of Cut Autumn Foliage.
- To the Duke of Northumberland (G. Wythes, gr.), for collection of Chrysanthemum Blooms.
- To Messrs. J. Veitch & Sons, for a collection of Chrysanthemums.

Bronze Banksian.

- To Messrs. W. Cutbush & Son, for collection of Cut Autumn Foliage.
- To the Duke of Northumberland, for collection of Cut Autumn Foliage.

Small Silver Medal.

- To E. Collios, Cumberland Park, for collection of Orchids.

Bronze Medal.

- To Messrs. H. Sander & Co., St. Albans, for Group of Orchids.

FRUIT COMMITTEE.

First-class Certificate.

- To Messrs. De Rothschild (gr., Mr. C. Reynolds), for Grape Chasselas Napoleon.

MEDALS.

Silver-gilt Banksian.

- To G. Woodward, gr., Barham Court, Maidstone, for 115 dishes of Apples and Pears.
- To Messrs. Veitch & Sons, Chelsea, for 100 dishes of Apples and Pears.

Silver Banksian.

- To Messrs. Paul & Sons, for 100 dishes of Apples and Pears.
- To Mr. G. Wythes, Syon House, for a collection of 110 dishes.

Bronze Banksian.

- To Messrs. Peed & Sons, Norwood Road, for 50 dishes of Apples.

MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL.

Fruit Conference.

SECOND DAY, October 22.—The second day's proceedings of the Conference were not a whit less interesting than the first. The Mayor introduced Sir James Whitehead, Master of the Fruiterers' Company, to take the chair.

The great drawback which Sir James emphasised was the want of compensation and the insecurity of tenure to the fruit-grower. This would interfere with tenants going into the work with a will, and it was useless to persevere until it was corrected. The preparation of the soil in the shape of draining, and digging and manuring, the cost of the trees, and the expenditure for the first five years, reached up to such a sum, that it was only the capitalist who could face it; hence the stumbling block of insecurity of tenure, and inadequate compensation must be met by the landlords of the county full in the face.

The Chairman then called upon Mr. Luckhurst, Ranford, who read a paper on "The Importance of Early Planting and Shelter in Fruit Culture." Shelter he looked upon as one of the main supports for keeping fruit on the trees. Many thousand bushels were lost for want of it. Many orchards were planted without regard to shelter at all, and high winds lessened the crop, which was generally cut down to a low state by spring frosts and other influences. If all growers of orchard trees would plant a belting around them, they would soon find out its value. He recommended the planting of a double row of Lombardy Poplars where ground was limited. Where space was not so much of an object here, the best thing of all was to plant Austrian Pine. This tree was about the most serviceable as a block line that could be used. Early planting was also important. He preferred planting in the back end much to spring planting. The roots of the trees got established before winter set in, and in the return of spring they grew so freely as to keep down the insects which usually come upon spring-planted trees. He looked upon October and November as the gaining of a year in the growth of the tree.

Mr. Cheal, Crawley, was next called upon. The title of his paper was "The Condition, Preparation, and After-Treatment of the Soil for Fruit Culture." The subject of fruit culture, he said, might be divided into two parts—above ground and below ground. It was little use attempting the cultivation of fruits without having a full knowledge of the soil, and how to make the most of it. It was the principal medium of food supply. The component parts of the land were not studied as they ought to be by orchard planters. Of course any soil could support plant life for a time, but soil to bear fruit year after year was robbed of a great many constituents that must, if success were to be looked forward to, be replaced. Apart altogether from a practical knowledge of soils, it was very desirable to have a chemical analysis, because many soils had not the chemical constituents that go to produce the finest of fruits. In this they had all much to learn. The soil, too, must have proper aëration. Its physical condition must be seen to if the best results are to be aimed at. The foundation of all good culture was proper drainage and deep cultivation, without both of these forest trees would no more prosper than the cereals or root crops of the farmer. There need be no apprehension about over-drainage, unless on very light soils, and then clay could be used as a top-dressing with excellent effect. The heat of the sun acted favourably on all well-drained lands, also improving the quality and hastening the maturity of the fruit. In breaking up the land for a plantation of fruit trees, it was much the better plan where practicable, to follow a root crop that had been well manured,

and where the land had been deeply stirred. Mr. Cheal spoke favourably of the steam-plough, the best digger. He wanted deep digging with any implement you like, only it must not leave the soil topsoil; the sub-soil must be left below, and the surface soil above. He had used an implement with a couple of prongs under the share of the plough which stirred the subsoil and did all that was wanted at much less draught than ordinary subsoil ploughing. The first cost of this work might be heavy, but the ultimate benefits were much greater. He did not approve of hole-making at certain distances and planting the trees therein, because of the tendency in most lands of the water draining into these holes and destroying the roots of the trees. In some instances where trees were planted in grass, no other method was practicable; only surface, or rather shallow drains, ought to be made at each hole to carry away accumulated water. It was much better to skim fallow waste land for a year in order to get rid of the weeds, than to plant and then have to do battle with them when the trees were growing. It was much better, in his opinion, to put sheep to eat down the pasture among the fruit trees than to allow the grass to grow into hay; this long grass intercepted the influence of the sun and stole away the richness of the soil itself. In any case, the turf should be kept clear of each tree, and a forking take place to allow the influences of sun, air, and moisture to play upon the roots.

Mr. Wright, of Hereford, next read a paper on "Fruit-growing for Profit." He said that the fruit grower's task was about the most difficult one in the whole rôle of the cultivation of the land. He had to contend with a combination of circumstances any one of which might imperil the ultimate success of the year's produce. Many of these mishaps might be reduced by a proper regard in the selection of the sorts of fruit most suitable for the district, together with that attention to soil, drainage, site, and intelligent management. He had put down about 6000 trees of various sorts, chiefly Apples, which he looked upon as the safest crop all round, although he would not advise any grower to stand by one article, as a variety of the many hardy fruits gave a better chance of doing on the average. He had himself experienced a heavy loss in the years 1887 and 1888 in the moth attacking his Apple trees. To such an extent was this done, that before he could check it, with its insidious movements within the bark, he lost a three-years' crop, and had to fall back upon the other produce to, in a measure, recompense him. He appeared to get his fruit trees into a profitable bearing state much sooner than the five years named by several of the speakers. From the young trees he was enabled to pick fruit that brought the highest prices in Covent Garden Market, showing that good culture and the proper picking and packing of fruit would pay. He had sent to the Manchester market this year Peasgood's Nonsuch Apples that fetched 30s. per cwt., when the best American Apples, at Liverpool, only realised per barrel of 120 lb., 19s. 3d. This was a most satisfactory state of things. He counselled the planting of the early large-growing sorts as being the most profitable. He also referred to the pamphlet sent out by the Royal Horticultural Society, with the combined opinions of forty experts as being a valuable help for intending cultivators, but they recommended Blenheim Orange Apple, but he would say with reference to that variety to all planters, "Don't." With soft fruits they had not so many rivals as with the Apples and Pears, and as it was not advisable to put all their eggs in one basket, they could meet their continental brethren in a fairer field of competition with these soft fruits. Altogether, he said it would be a wretched season if the whole of the crops failed.

Mr. James Anderson would like to have an authoritative opinion at this important conference on the question, How long ought trees in an orchard to be kept and yield profitable returns? He instanced the case of Mr. Matthews, of Gourdhill, in the lower reaches of Perthshire, as one of the greatest authorities forty years ago, and a voluminous worker to boot. In those days, his orchard, which was a very large one, paid handsomely, as well as some others along the course of Gowrie; but now these trees were centenarians, and the produce was smaller, and the quality not much better in some sorts than the wood itself. He would therefore like to have the opinion of those who were familiar with the orchards of Kent as to the age when the trees of the orchard should be replenished.

Mr. Cheal said that he knew hundreds of acres of Apple trees where the trees were 90 years old, and he could state, for the last fifteen years, the net

profit from these trees was £10 per acre. A Pear tree was instanced by a gentleman which bore 300 lbs. this season, and yet it was 100 years old. These were looked upon by the Conference as exceptional cases.

NATIONAL AURICULA AND CARNATION AND PICOTEE.

THE annual general meeting of the members of these Societies was held on the 27th inst., at the Hotel Windsor, by the permission of the Horticultural Club, Martin R. Smith, Esq., in the chair, there being a full attendance of members. The fifteenth annual reports were read by the Secretary, which set forth, that in reference to the Auricula and Primula generally, most satisfactory progress had been made with their extended and improved culture; that the display made on the occasion of the annual exhibition in April last was remarkably good, despite an adverse season—so late, indeed, that not a single northern grower was able to participate; and that it was noticeable how the older varieties of Auriculas, with the exception, perhaps, of Healy's George Lightbody, were giving place to the new and improved varieties put into cultivation during the past few years. The collections of species of Primulas were both interesting and instructive, the gold-faced Polyanthus much better than for a few years past, and the border Primroses and Polyanthus a leading feature as usual. The judges were thanked for their services, and the Horticultural club for allowing their room to be used for the purposes of the Society, free of charge.

The report of the Carnation Society set forth that a gratifying progress had to be reported; and that comparing the fifteenth exhibition held in July last with the first held by the Society, the advance was truly remarkable. The season of 1891 was decidedly adverse to the production of good blooms, and many growers were unable to exhibit. The special prizes given by Mr. Martin R. Smith, for border Carnations, produced a supplemental show of a popular character, a large number of blooms being staged. The balance sheet of the Auricula Society included among receipts, the sum of £70 6s. 6d. received as subscriptions; prizes paid, £62, and a balance of £8 18s. 5d. is carried forward to next year. That of the Carnation and Picotee Society shows among receipts, subscriptions amounting to £71 11s. 6d., and of expenditure, the sum of £48 15s. paid in prizes, a much smaller sum than usual, owing to the paucity of exhibitors; a balance of £21 15s. is carried forward to next year. The reports and balance sheets were adopted. Ten new members were elected to the Auricula, and five to the Carnation Societies. The election of officers for the ensuing year was then proceeded with, Sir John D. T. Llewellyn, Bart., was elected President of both Societies, but in the event of Sir John declining the Presidency of the National Carnation Society, Mr. Martin R. Smith will be the President for the ensuing year. The Vice-President and Committee were re-elected, Mr. Arthur Veitch being added to that of the National Carnation Society. Mr. T. C. Harwood was re-elected treasurer, and Mr. J. Douglas, secretary of both societies. The date of the Auricula show was fixed for April 20, and that of the Carnation show for the last Tuesday in July, subject to the arrangements of the Royal Horticultural Society. It was resolved that, in the interest of country exhibitors, the time for staging the flowers should be extended to half-past 11 o'clock. A letter was read, asking that classes might be provided both for Auriculas and Carnations grown within a radius of 4 miles from Charing Cross, with a view of encouraging *bona fide* town culture of these plants; but the matter was postponed, and several suggestions, with a view of improving the schedules, were considered, but not adopted. It was understood that the judges would be appointed by the committee at a meeting to be held in January next. A hearty vote of thanks to Mr. Smith for presiding brought the proceedings to a close.

NATIONAL CHRYSANTHEMUM.

OCTOBER 28.—A meeting of the above society took place at the Royal Aquarium on the above date, Mr. C. Harman Payne in the chair; when a considerable number of new Chrysanthemums were staged. From M.M. Ernest Calvert, fils, Grenoble, France, came a collection of new varieties, which having been well packed had travelled well, Japanese Mrs. C. Harman Payne, a very fine and full-petalled variety like a pale W. Tricker, was awarded a First-

class Certificate of Merit; Secrétaire Richard Dean, a very promising pale flower of decided promise the Committee wished to see again; also Madame A. Girond, a seedling from Edwin Moynoux. From Mr. Cox, The Gardens, The Grange, Hertford, had Japanese Charles Cox, rosy-pink, in the way of H. Elliott, but scarcely full enough; and D. B. Crane, like Sarah Owen, and not considered to be sufficiently distinct. Mr. R. Owen, nurseryman, Maidenhead, sent a large number of seedlings, mainly English raised, including Confidence, Japanese, bright rosy pink; Mrs. Nisbett, bright deep amaranth; and Snowflake, a pretty white pompon: all of which the committee wished to see again. From Messrs. Henry Cannell & Sons, nurserymen, Swanley, came Japanese Florence Davis, a large white variety, somewhat green in the centre; and Mr. C. Gibson, The Gardens, Mordeu Park, had the same, and in both cases the committee wished to see it again. From Swanley came also pompon William Kennedy, crimson amaranth, very bright; Beauty of Eynsford Anemone, soft pinkish lilac, with creamy pink centre, very pretty and fine (First Class Certificate); and Louis Boehmer, the new hairy petalled variety from America; but not being fully developed, the committee wished to see it again. Mr. William Wells, nurseryman, Earlswood, had William Wells, the promising sport from Madame Blanche Piquy, and Messrs. H. Cannell & Sons had the same variety. A commendation was awarded to Mr. Wills for his examples, and he also had Mrs. Wells, a delicate blush Japanese of a very promising character. Mr. W. E. Overstone Gardens, Northampton, had William E. E. a sport from Empress of India, which had reverted to the type from which Empress of India sprang, and was considered not sufficiently distinct. Mr. W. J. Godfrey, nurseryman, Exmouth, had Japanese Magnificent, deep pink, in the way of Bouquet Fait; and Beauty of Exmouth, a very promising white variety, which the committee wished to see again. From Mr. C. Blick, gr. to M. R. Smith, Esq., Hayes Common, come incurved Madame Darrier, a very distinct variety (First Class Certificate). From Mr. T. S. Ware, Hale Farm Nurseries, came Amos Perry, a large yellow Japanese in the way of Henry Cannell, which the committee wished to see again.

NURSERY NOTES.

CHRYSANTHEMUMS AT MESSRS. J. VEITCH AND SONS.

THERE is a fine lot of Chrysanthemums at this nursery, which make an effective display. The general effect is somewhat discounted because the plants are too much dispersed, whilst if all were grouped in banks, they would make an exceptionally fine show. At the time of our visit, a specially well-grown lot of plants stood in single file on either side of this corridor walk. A big collection was grouped in one of the show-houses close at hand, and a rather later lot was in another house. Of the varieties in bloom, we noted, of incurved, M. W. Brabant, the new red-bronze variety; also Thorpe Junior, Violet Tomlin, White Globe, Irène, and Dr. Sharpe; and Chevalier Domage, reflexed. The collection is rich in Japanese, and includes Janira, J. Delaux, W. Holmes, Alfred Chantier, Mlle. Mélanie Fabre, Source n'Or, Blanche Neige, Madame Rosain, Madame B. Pigny, Maiden's Blush, Madame de Sévin, William Clarke, Macaulay, Criterion, Lady Selborne, Bouquet Fait, La Triomphante, Elaine, Mandarin, Phebus, and Madame Rendatler. This is but a very limited list of a fine collection, which should be seen at its best early in November. Naturally, in an early notice of Chrysanthemum collections, the early bloomers get first attention. What is but too evident in every case is that dry, fine weather is sadly needed to perfect the flowers.

TRADE NOTICE.

PIRACY OF ILLUSTRATIONS.

MESSRS. SUTTON have suffered, like others, from the talent for "conveyancing," as the wise it call, exhibited by certain persons. Their engravings

have been reproduced by Mr. A. Blanc, of Philadelphia, and it is alleged that electros are sold in this country in an unauthorised manner. Catalogues are now in course of preparation, so that it is desirable it should be known that a British illustration pirated in the United States and published in this country, is as much an infringement of copyright as if the copy were made and issued in the United Kingdom.

Obituary.

MR. HENRY GLASSCOCK.—This gentleman, a well-known cultivator and exhibitor of the Dahlia, died very suddenly at his residence, Rye Bank, Bishop's Stortford, a few days since, at the age of seventy-one years. He was always a familiar figure at the annual exhibition of the National Dahlia Society at the Crystal Palace, and acted as Secretary for a few years on the death of Mr. Thomas Moore. He was a florist of many years standing, and at one time a cultivator of Pansies, later of Fuchsias and Roses, with other things, but more recently devoting himself to the Dahlia, and being very successful as an exhibitor. Born at Bishop's Stortford, and by profession a builder and brickmaker, he took a great interest in all matters connected with the town, and was a member of the Local Board of Health from 1875 to 1890. His death creates another vacancy in the rapidly-thinning ranks of the florists of a past generation, as he had been identified with floricultural societies for nearly half a century. Mr. Glasscock is deeply mourned by a large family, and his fellow townsmen.

MISS KITCHEN.—The recent death of this lady at the "Orange Tree" Inn, Butley, near to Macclesfield, deserves a passing notice. For something like seventy-five years, a Tulip show has been held at the "Orange Tree" Inn, which has been in the tenancy of the Kitchen family for over a century, and one of the family has always held the post of Treasurer and Secretary of the show. Miss Kitchen had held these offices for a considerable time, and the success of the annual exhibition was due in a large measure to her exertions; and she will be greatly missed and sincerely mourned by the Cheshire Tulip growers. More than ordinary interest will attach to the Butley show next year, as Mr. Samuel Barlow, J.P., will offer a handsome silver cup, value 10 guineas, to be competed for on that occasion.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

MEALIES AND WEEVILS.—A correspondent from the Transvaal asks for information as to the best method of preserving mealies (*Zea Mays*), from the attacks of weevils. Our American friends are said to have a plan of protecting the mealies, or of drying them in a kiln. Perhaps exposure to the vapour of bisulphide of carbon would be effectual, but we should not care to recommend this dangerous substance without trial. See also p. 522.

BEARDED CHRYSANTHEMUM CULLINGFORDII.—Has any reader of the *Gardeners' Chronicle*, asks Mr. Ebbutt, ever seen or heard of a bearded Chrysanthemum Cullingfordii bloom? He says, "I have a plant here with two blooms that are freely bearded on the reverse of petals, the hair-like growths measuring a quarter of an inch in length."

MARKETS.

TRADE slow, with shorter supplies. *James Webber, Wholesale Apple Market.*

	FRUIT.—AVERAGE WHOLESALE PRICES.				
	s. d.	s. d.		s. d.	s. d.
Apples, 3-sieve	1 0	4 0	Melons	0 6	1 0
Grapes	0 6	3 0	Peaches, per dozen	1 0	4 0
Kent Cobs, 100 lb.	3 6	35 0	Pine-apples, St. Mi-		
Lemons, per case	15 0	30 0	cheel, each	2 0	8 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table listing prices for cut flowers such as Asters, Freuch, Carnations, and Chrysanthemums, with columns for s.d. and s.d. s.d.

ORCHID-BLOOM IN VARIETY.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing prices for plants in pots such as Adiantum, Aralia, Aspidistra, and Begonia, with columns for s.d. and s.d. s.d.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table listing prices for vegetables such as Artichokes, Beans, Beet, Carrots, and Cauliflowers, with columns for s.d. and s.d. s.d.

POTATOS.

SPITALFIELDS: Oct. 27.—Quotations:—Magnums, 60s. to 75s.; Regents, 60s. to 70s.; Champions, 55s. to 65s.; Imperators, 60s. to 80s.; Hebrons, 60s. to 80s.; Early Rose, 60s. to 60s. per ton.

BOROUGH: Oct. 27.—Quotations:—Hebrons and Elephants, 70s. to 85s.; Imperators, 60s. to 75s.; Bruce Magnums, 60s. to 80s. per ton.

STRATFORD: Oct. 27.—Quotations:—Magnums, 60s. to 80s.; Imperators, 60s. to 75s.; White Elephants, 60s. to 75s.; Hebrons, 60s. to 75s. per ton.

FRUITS AND VEGETABLES.

SPITALFIELDS: Oct. 27.—Quotations:—English Apples, 3s. to 6s. per bushel; American do., 10s. to 20s. per barrel; Pears, 1s. to 2s. 6d. per half sieve; English Tomatoes, 5s. to 7s. per peck; foreign do., 1s. to 2s. per box; Prune Plums, 3s. 6d. to 3s. 9d. per half sieve; Damsons, 3s. to 3s. 6d. do.; Bullaces, 1s. to 1s. 6d. do.; Seakale, 1s. to 1s. 6d. per punnet; Cabbages, 1s. to 3s. 6d. per tally; Savoy, 2s. to 3s. do.; Greens, 1s. to 1s. 6d. per dozen bunches; Spinach, 1s. to 2s. per bushel; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Turnips, 2s. to 2s. 6d. per dozen bunches; Parsnips, 4d. to 6d. per score; Cauliflowers, 3s. to 7s. per tally; Carrots, 1s. to 2s. 6d. per dozen bunches; Endive, 9d. to 1s. per dozen; Cos Lettuce, 4d. to 8d. per score; Cabbage do., 3d. to 4d. per dozen; Leeks, 2s. to 2s. 6d. per dozen; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; English Onions, 1s. 6d. to 5s. per cwt.; Belgian do., 2s. 9d. to 3s. 3d. per bag of 110 lb.; Spanish do., 6s. to 6s. 6d. per case; Celery, 6d. to 10d. per bundle; Parsley, 1s. 6d. to 2s. per dozen bunches; Horseradish, 1s. to 1s. 1d. per bundle; frame Cucumbers, 1s. to 2s. per dozen; Radishes, 1s. 6d. to 2s. 6d. per tally; Beet-roots, 2s. to 2s. 6d. per dozen bunches.

BOROUGH: Oct. 27.—Quotations:—Cabbages, 2s. 6d. to 4s. per tally; Marrows, 2s. to 4s. do.; Broccoli, 4s. to 6s. do.; Turnips, 1s. to 1s. 6d.; Carrots, 1s. to 1s. 9d. per dozen bunches. English Onions, 4s. to 5s. per cwt.; Apples, 2s. to 9s., and William Pears, 2s. to 7s. per bushel.

STRATFORD: Oct. 27.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 4s. 6d. per tally; Savoy, 2s. 6d. to 5s. do.; Collards, 1s. 6d. to 3s. loose; Cauliflowers, 9d. to 1s. 3d. per dozen, and 3s. to 5s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 30s. to 40s. do.; do., cattle-feeding, 26s. to 32s. do.; Parsnips, 6d. to 1s. 3d. per score; Mangels, 17s. to 20s. per ton; Swedes, 20s. to 25s. do.; Onions, German, 5s. to 5s. 6d. per bag; do., English, 100s. to 115s. per ton; do., Dutch, 3s. to 4s. per bag; do., Ports, 5s. 6d. to 6s. 6d. per case; Apples, English, 2s. to 6s. per bushel; do., American, 12s. to 18s. per barrel; red Cabbage, 1s. to 1s. 9d. per dozen; Horse Radish, 1s. to 1s. 3d. per bundle; Sprouts, 1s. 3d. to 2s. per half-sieve, and 2s. to 2s. 9d. per flat packing Onions, 3s. to 4s. per packet.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Table with columns for DISTRICTS, TEMPERATURE (ACCUMULATED), RAINFALL, and BRIGHT SUN. Rows list districts 1-12 with corresponding weather data.

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts:—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. Principal Grazing, &c., Districts:—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending October 24, is furnished from the Meteorological Office:—

"The weather has continued very rough, squally, and unsettled generally, with frequent and heavy falls of rain in all but the northern and north-eastern districts. In several parts of the Kingdom—notably in Ireland—bright intervals of sunshine were experienced, and towards the end of the period a general improvement was in progress.

"The temperature has been rather below the mean in 'Scotland, E.' and 'England, N.E.' as well as over 'Ireland,' and equal to it in the western parts of 'Great Britain;' elsewhere it has exceeded the normal value, the excess in 'England, S.' having been 3°. The highest of the maxima were recorded either on the 21st or 22nd, and ranged from 64° in the 'Channel Islands,' to 55° in 'Ireland, N.' The lowest of the minima, which were registered on rather irregular dates, ranged from 27° in 'Scotland, N.' 29° in 'Scotland, E.' and 30° to 32° in most of western and northern districts generally, to 36° in 'England, E.' and the 'Midland Counties,' and to 45° in the 'Channel Islands.'

"The rainfall has been less than the mean in the north and east of Scotland, the north-east of England, and the north of Ireland. In all other parts of the Kingdom there has again been a large excess.

"The bright sunshine has just equalled the mean in 'England, S.' and the 'Channel Islands,' but has been above it in all other districts. The percentage of the possible amount of duration ranged from a little above 50 in 'Ireland,' and from 40 in 'Scotland, E.' to 29 in England, S. and N.W."

NOTICES TO CORRESPONDENTS.

ABIES OR PICEA, PICEA OR ABIES: X. We fully admit the inconvenience, but this is rapidly disappearing now that we have an authoritative standard in Bentham & Hooker's Genera, to which all should be prepared to pay loyal obedience, unless they can show sufficient cause to the contrary. The system of calling the Silver Firs Picea, and the Spruce Abies was and is confined

for the most part to this country. In all other countries, and in the modern books of authority, without exception, the practice is that adopted in Bentham & Hooker, and this for the sake of uniformity should be upheld.

BOOKS ON FRUIT GROWING: Leon. There is not much to learn that is new on fruit culture. For practical information about cultivating and training various kinds of fruit trees, Scientific and Profitable Culture of Fruit Trees, by M. Du Breuil, English by W. Wardle (Lockwood & Co., Stationers' Hall Court); Subtropical Cultivation and Climates, by R. C. Haldane (Blackwood & Sons, Edinburgh and London). Probably other and better books on the subject could be obtained from the foreign booksellers.

BOOKS: J. How to Lay Out a Garden. By E. Kemp. (Out of print).

CORRECTION.—In our mention of Messrs. Kelway & Son's special prizes in our last issue, we omitted to state that they also intend to give Medals for Delphiniums and Gaillardias.

DENDROBIUM FIMBRIATUM: E. C. The plant having just finished its growth, put it into a very light place, and close to the glass, and where the temperature does not go below 60° or rise above 75°. Withhold water.

DRESSING FOR BOARD FENCES: J. S. We should say that Stockholm tar would be preferable to the deep black of either common gas tar or black varnish, and it has moreover the advantage of not being sticky.

FRUIT OF MONSTERA DELICIOSA: A. R. You plucked the fruit before it was ripe. When quite ripe, it has a delicious flavour. To avoid the irritation caused by the spine-like crystals, thrust a quill into the fruit, and suck the juice through the quill. The fact of your having grown the plant out-of-doors during the past summer accounts for the late ripening of the fruit. It must stay on the plant till ripe.

GINKGO: B. We are not aware whether this tree has fruited in this country. It is dioecious, and the best plan of securing fruit would be to do as A. P. de Candolle did many years since—graft a scion of the male on the female. Most of the trees in this country are males, but on the Continent, and in the United States, the female is now also common.

GRAPE DROPPING: An Anxious One. The Grape-room is too damp.

MARKET TULIPS: J. G. W. Probably Alba maxima, Rose blanche, or Marriage de ma fille; we do not know which with certainty.

NAMES OF FRUITS: J. S. N. 1, Grosse Calebasse; 2, 3, Beurré Bosc.—R. T. F. A small Emperor Alexander.—Thomson. Apple: 1, Grange's Pearmain; 2, Winter Majetin; 3, Sturmer; 4, Dumelow's Seedling. Pears: 1, Pitmaston Duchess; 2, Easter Beurré; 3, Catillac.—J. Borlase Tibbits. Your Apple is the Frogmore Prolific.—P. Bogie. Apple: Alfriston.—G. W. 1, smashed; 2, Louise Bonne of Jersey; 3, Beurré Bosc.—C. P. & Co. Pear: Caillot Rosat.—Henry Smith. Pear: Colmar d'Été. Apple: Jolly Bigger.—W. G. Sorby. Apple: Cellini. Pear: Pitmaston Duchess.—F. Pearce. 1, Hollandbury; 2, Cox's Pomona; 3, not known—probably a local variety.—Pomona. 1, Autumn Pearmain; 2, Red Streak; 3, Winter Peach; 4, Marie Louise d'Uccle; 5, Beurré de Capiaumont.—G. J. J. 1, Tom Putt; 2, Reinette du Canada; 3, Verulam. Others not determinable from such poor specimens.—W. P. 1, Duchesse d'Angoulême; 3, Maréchal de la Cour; 4, Thompson's; 5, Brown Beurré; 6, Alexandre Lambre; 7, King of the Pippins; 8, Striped Beefing; 9, Gloria Mundi.—J. S. 1, King of the Pippins; 3, Colonel Vaughan; 5, Northern Greening; 6, Reinette du Canada. Others not recognised.—H. R. G. Apples: 2, not recognised; 1, Hawthornden; 2, Grange's Pearmain. Pear: Louise Bonne of Jersey.—Scottie. Apples: 7, Mannington's Pearmain; 8, Autumn Pearmain; 9, Rymer; 14, De Marais; 15, Beurré Rance; one without number, Beurré Diel.—F. Thirly. 1, Beurré Clairgeau; 3, Beurré de Capiaumont; 4, Old Colmar; 5, Duchesse d'Angoulême; 6, Seckle; 7, General Todleben.

NAMES OF PLANTS: Blue Bell. Aster macrophyllus.—A. A. 1, Epidendrum, section Encyllum, possibly new. Please send more complete specimen if possible, and state its origin; 2, Sarcanthus teretifolius.—A. J. B. 1, Sedum spectabile; 2,

Euonymus radicans; 3, *Monarda didyma*; 4, *Spiraea filipendula*, double fl.; 5, *Phalaris arundinacea variegata*; 6, *Jasminum officinale* var. *grandiflorum*.—*R. R.* *Adhatoda cydoniifolia*.—*W. S. C. Pinwell* 1, *Digitalis thapsi*; 2, *Campanula lamiifolia*; 3, *Carthamus lanatus*; 4, *Potentilla argentea*.—*F. P. Z.* *Ceropegia*, a new species. Can you oblige with a better specimen, with particulars for description, as it was withered before it could be attended to.—*Alfred Fryer*. 1, 1, *Setaria viridis*; 2, *Amaranthus chlorostachys*.—*J. W. M.* 1, *Pellionia pulchra*; 2, *Salvia splendens*; 3, *S. gesneriifolia*; 4 and 5, *Dracenas*, garden hybrids.—*E. R. Tortworth*, *Urginea comosa*.

OAK: *J. H. G.* Either the Fulham or the Lucombe Oak—we cannot tell which.

PINES BENTHAMIANA: *J. H. G.* This is a form of *ponderosa*, and does well in this country. There are some fine trees at Orwell Park, Suffolk.

PLANTS IN VINERIES: *A. B.*—Early vinery: *Roses*, *Gardenias*, *Lilacs*, *Rhododendrons*, *Kalmias*, *Asparagus prostratus* var. *plumosus*, fibrous-rooted *Begonias*, *Staphylea colchica*, *Richardia aethiopica*, *Cactus Epiphyllum truncatum*, *E. Gartneri*, *Azalea indica*, *A. mollis*, Dutch bulbs, and *Eucharis* of species. Much plant forcing may be done in this house, if the roof is not crowded with *Vine foliage*. Late vinery: Most of the above, excepting the bulbs, which would be going out of season when the house is started. In this house many kinds of stove plants may either be started into growth, or placed therein after growing for some time in the stove; also *Heliotrope*, *Achimenes*, *Tuberosee*, &c. Very few greenhouse plants should be kept in a late vinery after it is started, unless it be cut back—*Epacris*, *Azalea indica*, *Ficus*, *Orangea*, &c., and these only until they have well broken.

TAGETES: *F. R.* Good, but not remarkable.

TEMPERATURES: *X. Y. Z.* *East Indian or Warmest House*: As most *Orchids* under cultivation in this country begin to grow in the spring, the temperature may be raised from 60° to 62°, at which the plants were rested to 65° by night, and by day to 70°, and with sun-heat to 75°. The warmth should be gradually increased as the days lengthen, and during the interval—May to August—it may range from 70° to 75° at night; and from 75° to 80° by day, or 85° to 90° with sun-heat, provided shade be afforded. In this house come *Vandas*, *Phalenopsis*, *Saccolabium*, some *Dendrobes*, and *Cypripediums*. *Brazilian and Mexican Orchids* should be accommodated at the growing season with a temperature at the commencement of 60° to 62° by night, with a 5° to 10° rise by day; and during the period—May to August—the night warmth may range from 65° to 70°, and that of the day 70° to 85°. Of course, with the lesser warmth, less moisture is required by the plants at the root, and in the air. *Odontoglossums* will succeed whilst growing in a temperature of 60° to 65° by day, and 50° to 55° by night; but while the plants are resting—that is in the winter mostly—a temperature of 40° to 45° by night, and 50° to 55° by day should be maintained. Some *Orchids* do not rest during our winter, as *Zygopetalum*, many species of *Aeides*, *Vanda*, *Phalenopsis*, &c., and such, will require water at the root at that period; but great care should be taken not to wet the young growths. These should be placed at the warmer end of the house. The cool house division should not fall below 45° at night during the winter, or rise above 55° in the summer; the day warmth at each period being kept at about 10° higher.

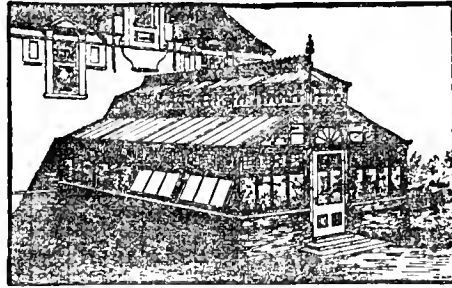
VINES: *J. F.* The *Vine* shoots were healthy, and quite free from mildew.

COMMUNICATIONS RECEIVED.—*C. F.*, Melbourne.—*C. V.*, D. D.—*T. F. R.*, C. C.—*F. V. D.*, G. W.—*B. S. W.*, W. C. W.—*E. H. K.*, Harlem.—*Sir J. L.*, D. T. F.—*Sutton & Sons*, P. B.—*S. P. O.*, W. S.—*E. L.*, Buffalo.—*G. M.*, C. W. Casell.—*W. C. L.*, W. H. B.—*G. G.*, *Anxious One*, (Jamp).—*T. S.*, W. W. C., next week.—*W. Gill.*—*Price's Patent Candle Co.*—*Kelway & Sons*—*J. O. B.*—*E. C.*, W. D.—*F. S. F.*, R. A. M.—*T. S.*, W. Kelly.—*J. B.*, R. A. R.—*W. H. D.*, S. H.—*G. B. C.*, P. W.—*A. D.*, J. B. W.—*Northern Newspaper Syndicate*.—*J. S.*, W. H. Smith.—*P. Blair.*—*E. M.*, H. M.—*J. C. W.*, A. C. M.—*J. Carter & Co.*, W. J. S.—*A. S. C.*, E. J. L.—*Reid & Bornemann.*—*J. D.*, H. E.—*H. W.*, W.—*T. W.*, F. T.—*Scottie.*—*H. T.*, J. F. S.—*A. F.*, E. R.—*W. E. V.*, P.—*A. G.*, P. R.—*D. A.*, K.—*G. J.*, O. W.—*D. W. P.*, A.—*C.*, A.—*K. X. Y. Z.*—*G. S. T.*—*J. F.*, T.—*S. G.*, G.—*A. O. W.*—*F. R.*, J. T.—*N. D. R.*—*P. E.*, M.—*G.*, Enfield.—*W. H. S.*, W. R.—*H. T.*—*G. M.*—*Tweed.*—*Pioneer.*—*A. D.*, Melvin.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED.—*T. H. P.*, Bury (with many thanks).—*Chr. Lorenz*, Erfurt.—*Ernst Benary*, Erfurt.—*F. W. B.*, Dublin.—*D. C. P.*

PUBLICATIONS RECEIVED.—*Fruit Growing and Market Gardening as Irish Industries* (Cambridge), by *W. H. Bullock* Hill.

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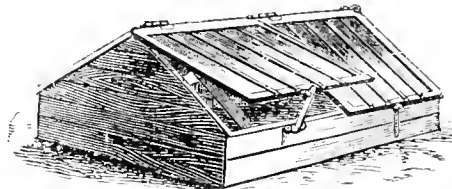
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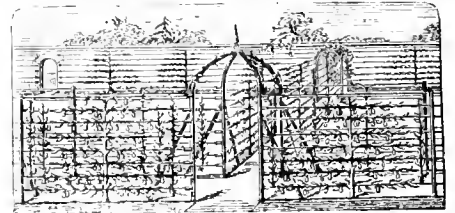
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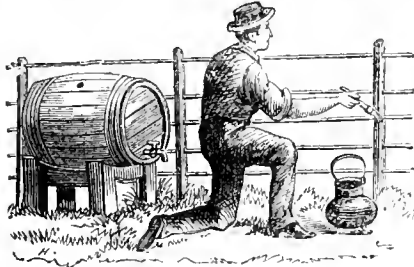
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All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON ST., STRAND, W.C.

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C O C O A
BREAKFAST—SUPPER.

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G. COOLING & SONS, Bath.—Fruit Trees, Roses, Shrubs, &c.

J. C. SCHMIDT, Erfurt.—Novelties of 1892.

F. BOEMER, Quedlinburg.—Novelties in Flower Seeds.

E. H. KRELLAGE & SON, Kleinen Houtweg, Haarlem.—Dutch Flower roots, Tuberos-rooted plants, Darwin Tubips, &c.

HURST & SON, Burbage, near Huckleley.—Fruit trees, Roses, &c.

LITTLE & BALLANTYNE, Carlisle.—Forest and Ornamental trees, Evergreens, Roses, Vines, Game Covert plants, &c.

W. SMITH & SON, Aberdeen.—Forest and Fruit trees, Shrubs, Roses, &c.

R. VEITCH & SON, Exeter.—Descriptive List of Alpines, Perennials, and other hardy plants.

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Mr. W. HIGGS, formerly of Woodlands Park, Leatherhead, as Head Gardener to J. B. HANKEY, Esq., Fetcham Park, Leatherhead.

Mr. J. WARD, formerly at Normanton-on-the-Wolds, Plumtree, Notts, as Head Gardener to CHARLES JACOBY, Esq., Lyegrove, Chipping-Sodbury, Gloucestershire.

Mr. R. CURLE, formerly of Sefton Park, Liverpool, as Superintendent of Waterlow Park, Highgate, London.

Mr. ARTHUR ALLSOPP, of Trentham Gardens, as Gardener to VISCOUNT PORTMAN, Bryanstone, Blandford.

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WANTED, a first-class GARDENER, used to West-End Trade; must be experienced in Window-Boxing, Furnishing, and thoroughly understand the treatment of Palms.—Apply, by letter only, to THE CRICHTON FLORAL COMPANY, 37, Sloane Street, S.W.

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WANTED, a WORKING GARDENER and Wife, without young children, to take Charge of Unfurnished House, adjoining town of Wantage, during the winter, or until let, and to Grow Vegetables, Fruit, &c., in Garden, Greenhouse, and Vinery for sale in reduction of wages.—Apply, stating age, wages, &c., to Messrs. ORMOND, Solicitors, Wantage, Berks.

H. CANNELL AND SONS are WANTING, to proceed to Africa, THREE or FOUR thorough practical, steady, intelligent MEN for the production of Apple and Pear Trees, and afterwards growing and packing the fruit to Europe. Free passage and good wages. Three years guaranteed to thoroughly reliable men. They also require a similar Man for their own Nursery. One who is competent to take and carry out the Shrub and Tree Department in a most business-like manner.—Particulars to Swanley, Kent.

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WANTED, a MAN, to grow Mushrooms for Market. Must have had successful experience. First-rate testimonials required. Responsible place. Good wages. Share of profits. Write in first instance to AGARIC, 117, Chancery Lane, W.C.

WANTED, a young MAN, in a Seed and Florist's Shop. Must have a knowledge of Wreath and Bouquet Making.—B. MALLER AND SONS, Burnt Ash Lane Nurseries, Lee.

WANTED, for a Nobleman's Garden, a MARRIED COUPLE. Man required for Kitchen Garden Work and Nailing; Wife to look after young men's rooms. Liberal wages given, with Cottage, Firing, Milk, and Vegetables. First-class references required.—Apply, J. C. McPHERSON, Londesborough Park, Market Weighton, Yorkshire.

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WANTED, an UNDER COWMAN.—A smart, active, superior, willing young man. Must be a clean, quick Milker, well up to attending first-class Pedigree Stock, and used to early hours. Wages, 17s. per week. Good personal character from last master indispensable.—Apply, by letter only, to HERDSMAN, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

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SANDERS, St. Albans, can thoroughly RECOMMEND several first-class HEAD GARDENERS.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

To Gentlemen and Head Gardeners.

JOHN PEED and SONS have several young Men they can recommend both as FOREMEN in the Houses, or SECOND.—Nurserymen by Appointment to the School Board for London, Roupell Park Nurseries, Norwood Road, London, S.E.; also, at Mitcham Road, Streatham, S.W.

GARDENER (HEAD).—Age 27; twelve years' practical experience in all branches. Two and a half years to present place, and now at liberty to engage. Can be highly recommended.—J. M. MURPHY, The Gardens, Fennagh House, Baysalstown, Ireland.

GARDENER (HEAD).—D. LINDSAY, for over twelve years Gardener to the late Sir Thomas and present Sir John Edwards Moss, Bart., is open to engage with Lady or Gentleman requiring the services of an experienced man. Breaking-up of the establishment cause of leaving.—D. LINDSAY, Otterspool Gardens, near Liverpool.

33 leading to a Situation as HEAD GARDENER, where two or more are kept. Thoroughly experienced in all branches. Age 33, married. Abstainer. Good characters.—C. TAYLOR, 2A, Brynnaer Road, Battersea Park, S.W.

GARDENER (HEAD), age 38, to any Lady or Gentleman requiring a thoroughly practical man, and an active worker.—EDWARD BAYMAN, Gardener to the Hon. F. Leveson Gower, Holmby, Dorking, can confidently recommend a man as above.

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GARDENER (HEAD WORKING).—Age 31; thoroughly experienced in all branches. Good character and testimonials.—W. CLAYTON, Next End, Lyonshall, Kington, Herefordshire.

GARDENER (HEAD WORKING), where four or more are kept; well up in all branches of Early and Late Forcing. Excellent references.—CRANLEY, 42, Burread Road, West Hampstead, N.W.

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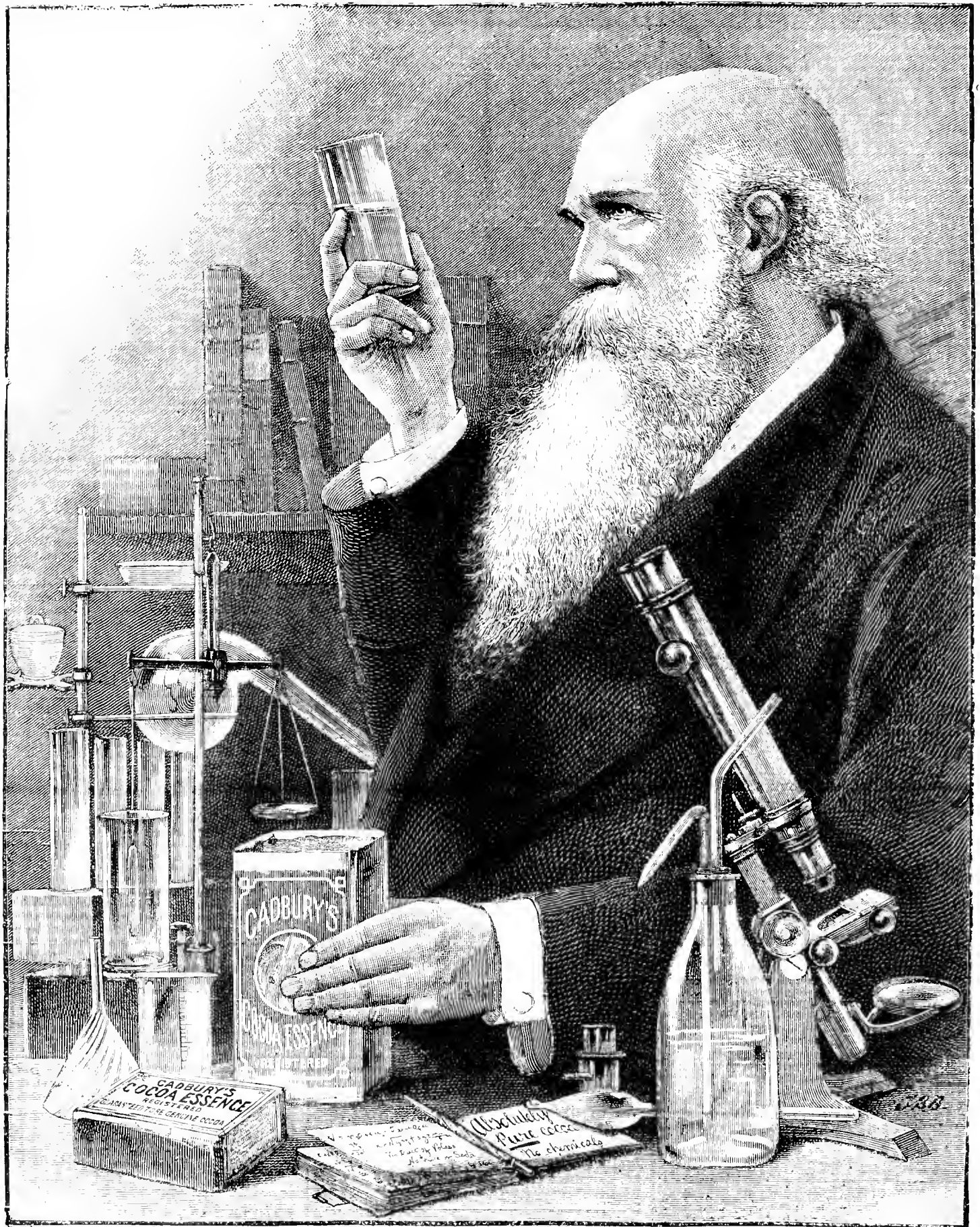
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IMPORTANT CLEARANCE SALE.

By order of Messrs. G. AND W. STEEL.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Richmond, Surrey, on MONDAY, November 30, and THREE FOLLOWING DAYS, without reserve, in consequence of the death of the senior partner, and the intention of the vendor to relinquish the business, a grand lot of GOLDEN SILVER, and GREEN HOLLIES, thousands of AUCUBAS, RHODODENDRONS, GOLDEN PRIVET and FRUIT TREES, also 8 STACKS of HAY, CART, HORSE, &c.

Further particulars will appear.

Dutch Bulbs. Dutch Bulbs.

SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

In Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half-past 12 o'clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving Weekly from well-known Farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

400 Standard and Dwarf ROSES, CONIFERS, EVERGREENS, LAURELS, CARNATIONS, PINKS, and other BOLDER PLANTS, LILIAM HARRISI, and L. CANDIDUM, in quantity, 5000 AMARYLLIS, 20,000 Berlin LILY OF THE VALLEY Crowns, SPIRÆA JAPONICA and PALMATA, GLADIOLI, DAFFODILS, Early White ROMAN HYACINTHS, FORCING NARCISSUS, &c.

MR. J. C. STEVENS will include the above in his SALE, by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY next, November 11.

On view morning of Sale, and Catalogues had.

Thursday Next

CATILEYA LABIATA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 12, at half-past 12 o'clock precisely, by order of Messrs. Veeger & Tropp, several fine specimens of the New and Grand GRAMMOPHYLLUM SEGERIANUM; also a fine lot of CATILEYA LABIATA, imported by M. Moreau, of Paris, who is supposed to have received the first of the recent consignments of the autumn-flowering CATILEYA LABIATA (see Gardeners' Chronicle for October 31, 1891, p. 523). This small importation reached France about two months ago, and the plants now to be offered have very large bulbs and leaves, are most distinct in general appearance, and each plant is vigorously making strong new growths.

The sale will also include the rare COELOGYNE GARDISSIANA, several fine specimens of COELOGYNE LOWI (ASPIRATA), semi-established plants of EPIDENDRUM VITELLINUM, AERIDES SCHROEDERIE, the rarest and finest of Aerides; several fine plants of the rare CYMBIDIUM ELEGANS and lovely CYMBIDIUM DEVONIANUM; a fine plant of LELIA ELEGANS TURNERI, a grand specimen of SCHOMBURGKIA LYONSII, a newly-imported consignment of ODONTOGLOSSUM HASTULIFOLIUM, in splendid condition; and other Orchids of value.

On view morning of Sale, and Catalogues had.

Brecknock Nurseries, Camden Road, N.W.

LEASE of VALUABLE PREMISES, comprising Conservatory, Seed Shop, Dwelling House, adjoining large Stable Premises and Greenhouse over, the Property forming a splendid building site.

A valuable piece of LAND in rear of Hilltop Crescent, with frontage of 405 feet, and comprising a out 1 acre, part used for lawn-tennis, and remainder (with about 500 feet run of glass) as Nursery.

Also long leasehold DWELLING-HOUSE and SHOP, No. 14, Brecknock Road, let on repairing lease, at £50 per annum.

MESSRS. GEO. HEAD AND CO. will SELL the above by AUCTION, at the Mart, Tokenhouse Yard, E.C., on THURSDAY, November 19, 1891, at 1 o'clock.

Particulars, with Plan, and Conditions of Sale, may be had of Messrs. INDERMAUR CLARK, and PARKER, Solicitors, 1, Devonshire Terrace, Portland Place, W.; or at the Auctioneers' Offices, 7, Upper Baker Street, N.W.

Important to Nurserymen, Florists, Seedsmen, and Others

TO BE SOLD by TENDER, as a Going Concern, Re WILLIAM BARRACK, Seedsman and Florist, Castle Gardens and Finkle Street and Jubilee Gardens, Kendal, the whole of the well-grown, healthy, and valuable STOCK, comprising among other numerous items, 7 Camellias in pots and tubs, 120 Azaleas in bud, 250 Chrysanthemum in 30 pots, 700 Double White Primulas in 5 and 6 inch pots, about 3000 Geraniums in pots and boxes, 350 Fancy Pelargoniums in 3-inch pots, about 2000 various plants, including Cyclamens, Heaths, Solanums, Deutzas, Bouvardias, Calceolarias, Cinerarias, Primulas, &c.; 500 Caneautems in 5-inch pots, 150 Arums in 7 and 8 inch pots, 150 Liliums, various; 4000 Roman Hyacinths and other bulbs in pots and boxes, 600 Dwarf Hybrid Roses, 5000 Pansies, Auriculas, Daisies, Wallflowers, Border Carnations, &c.; 3000 2-year-old Strawberries, 700 Gooseberries, Apple and Plum Trees, &c.; about 10,000 Cabbage Plants, &c.; and some thousands of Miscellaneous Hardy Herbaceous Stuff.

Also about 600 feet of GLASS, with 2500 feet of PIPING, two large BOILERS, and CISTERN, and all accessories. Also the Stock of SEEDS, BULBS, and Horticultural Sundries, at 29 and 31, Finkle Street, Kendal. Cases, Counters, Fixtures, Weighing Machine, Trucks, and all requisites for a first-class business.

Tenders to be sent in not later than the 21st inst., to F. J. THORNER, C.A., Trustee, Kendal.

JOBGING and FLORIST BUSINESS for DISPOSAL, Goodwill, Stock, &c. £30. Apply, CULLEN, Gresham Road, Staines, Middlesex.

TOMATOS, GRAPES, &c.—Advertiser wishes to meet with the Proprietor of a Small Business wishing to INCREASE THE SAME, easy of access, suitable for Growing Tomatos, Grapes, &c., for Market. State quantity of Glass, how long established, position and full particulars, C. 20, Gardeners' Chronicle Office, 11, Wellington Street, Strand, W.C.

Landscape Gardening.

ARTHUR M. KETTLEWELL (Author of the Theory and Practice of Landscape Gardening), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons. Address, Titley, R.S.O., Herefordshire.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to BE DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus. Address, SECRETARY, 43, Great Tower Street, E.C.

The Gardeners' Royal Benevolent Institution.

NOTICE is HEREBY GIVEN, that an ADDITION will be made to the PENSION LIST of this Institution in JANUARY NEXT.

All persons desirous of becoming Candidates will be required to send in their applications to the Committee on or before, NOVEMBER 14 NEXT after which day they cannot be received. Preference will be given to those applicants, or their widows, who have been on the books of the Institution as subscribers for fifteen clear years. Should there not be enough of these applicants to fill the vacancies, then the cases of those applicants who have not subscribed so long, or not at all, will be considered. Forms of application, and full particulars may be obtained of the Secretary—

G. J. INGRAM, 50, Parliament Street, London, S.W.

CAUTION.—In the Court of Session, Scotland, SUTTON and SONS v. BAXTER—NOTICE IS HEREBY GIVEN, That the Court has granted a PERPETUAL INJUNCTION, with costs, against the defendants, Messrs John Baxter & Sons, Printers and Publishers, Edinburgh, restraining them from infringing the Copyright of Illustrated Catalogues published by Messrs. Sutton & Sons, Seed Merchants, Reading. The defendants allege that they bought the electrots of illustrations from A. Blane, engraver, of Philadelphia, U.S.A. As numerous imitations of the illustrations in Messrs. Sutton & Sons' several Catalogues have been made, they give Notice to all engravers, printers, seedsmen, and other persons, not to print, publish, or circulate any illustrations copied from their copyright catalogues, and that legal proceedings will be taken against any person infringing their rights.

Dated this October 23, 1891. PLUNKETT AND LEADER, 60, St. Paul's Churchyard, London, E.C., Solicitors for Messrs. Sutton & Sons.

FERNS! FERNS!! FERNS!!!—Trade, Greenhouse, and Stove. 25 most saleable sorts, 12s. 100; out of pots, 10s. A. cuneatum, for cutting at once 5-in. pots, 50s. 100; for potting on, 12s. and 16s. 100. Large Ferns, 5-in. pots, best sorts, and Ardia Solandrii, 45s. 100. Palms, Ficus, E. hymalis, E. gracilis, and Solanums, superior, 5-in. pots, 12s., 15s., and 18s. dozen. Packed free, cash with Order.—J. SMITH, London Fern Nurseries, Longwood Junction, S.W.

BEARING PEACH TREES.—A few very fine bearing Dwarf-trained and Standard Trees, fibrously rooted, well-balanced Heads. Prices on application. W. LEBON, Putney, S.W.

CHRISTMAS and LENTEN ROSES.—Mr. BROCKBANK our greatest authority, writing to the Garden, says:—"They are the finest I ever beheld." Good strong clumps full of flower-buds (large major var.), at 9s., 12s., 15s., 18s., and 24s. per dozen. Specimen plants, 1½ to 3 feet across. Price on application. Twelve Lenten Roses, in best named varieties, for 10s. GEO. SPAM, Nurseryman, Bishop's Teignton, South Devon.

DOBBIË'S CATALOGUE and COMPETITORS' GUIDE for 1892.—25th Annual Edition, 160 pages, illustrated. Described by one of the greatest authorities in England as "the most useful list published in the trade." Will be ready on January 1, and will be sent gratis then to all who apply for it before Christmas, and enclose 3d. to cover postage.—DOBBIË AND CO., Seed Growers and Florists, Rothsay, Scotland.

POT ROSES.—A Bargain; room wanted.—Several thousand Niphetos, Catherine Mermet, Perle des Jardins, Isabella Sprunt, Madame Falcot, Safrano, Schwenner d'un Ami, and Marie Van Houtte. Splendid stuff. Established in 9 and 11-inch pots. Inspection invited. Price 4s and 4s 6d per 100. GUIVER BROS. AND LAWSON, Durant's Nursery, Ponder's End, Middlesex.

The Best Present for a Gardener. VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published. New Edition. Price 5s., post-free, 5s. 6d. A. F. BARRON, Royal Horticultural Society, Chiswick.

VINES.—VINES.—VINES.—We hold a fine Stock of the above, both Fruiting and Planting Canes. Names and prices sent on application. JOHN FRED AND SONS, Roupell Park Nurseries, Norwood Road, London, S.E.

EXHIBITIONS.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

President: G. C. SHERRARD, Esq., J.P.
The FIFTEENTH ANNUAL GRAND EXHIBITION will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 10 and 11, 1891, when, in addition to valuable Money Prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be again competed for. Schedules, and any information, may be had from the Hon. Sec., MR. GEORGE WOODGATE, Warren House Gardens, Kingston Hill, Surrey. Entries close on November 6.

SHEFFIELD, HALLAMSHIRE, and WEST RIDING UNITED CHRYSANTHEMUM SOCIETY.

ANNUAL SHOW, Corn Exchange, Sheffield, Nov. 13 & 14, 1891. Upwards of £200 in Prizes, Medals, &c. Schedules free on application. WM. HOUSLEY, Sec.

YORK CHRYSANTHEMUM SHOW.

The TWELFTH ANNUAL SHOW in the Fine Art Exhibition Building will be held on NOVEMBER 18, 19, and 20, 1891. £150 offered in PRIZES, in liberal proportion, for Plants, Cut Flowers, Fruit and Vegetables. Entries close November 11. Schedules may be had from the Secretary, J. LAZENBY, 13, Feasegate, York.

HULL and EAST RIDING CHRYSANTHEMUM SOCIETY.

EIGHTH ANNUAL SHOW, HULL, WEDNESDAY and THURSDAY, November 18 and 19, 1891. £17 10s. for 24 Incurred; and £18 2s. £17 10s. for 24 Japanese. Entries close November 11. Schedules from the Hon. Secretaries, EDWARD HAYLAND, Manor Street, Hull. JAMES DIXON, 2, County Buildings, Hull.

SCOTTISH HORTICULTURAL ASSOCIATION.

GRAND CHRYSANTHEMUM EXHIBITION, NOVEMBER 19, 20 and 21. Schedules and all particulars on application to the Secretary, ROBERT LAIRD, 17, South Frederick Street, Edinburgh.

SOUTH SHIELDS CHRYSANTHEMUM and WINTER FLOWER SHOW.

EXHIBITION will be held on WEDNESDAY and THURSDAY, November 25 and 26, in the Royal Assembly Hall, South Shields. PRIZE MONEY over £200; £0 for 35 blooms. BERNARD COWAN, Hon. Secretary, Harton, South Shields. N.B.—The Hall illuminated by electricity.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

Cheap Palms! Palms!! Palms!!!

J. W. SILVER invites inspection of his immense Stock of PALMS, the Cheapest in the Trade, of KENTIAS of all kinds; CORYPHA, SEAFORTHIA, COCOS, PHENIX, and many others. LIST of prices on application. Streatham and Norbury Nurseries, S.W.; and Marlborough Mansions, Victoria Street, Westminster, S.W.

SEED of MARGARET CARNATIONS.

Mixed, tall, 5s. per oz.; medium, 7s. per oz.; dwarf, 15s. per oz. Genuineness guaranteed. Payment by Post-office Order, or Cash on the spot. NEW EVERLASTINGS, HELICHRYSUMS, &c.—Will send Samples when large quantities of the above are taken. ALBERT DABERS, Kunst and Handlungsgärtner, Market Halle III., Berlin, S.W.

Fruit Trees a Specialty.

APPLES, PEARS, PLUMS, STRAWBERRIES, and all sorts of Small and Hardy Fruits grown in immense quantities. The best of the Old and New Varieties either to Grow for Market or Private Consumption. Special quotations for quantities. Descriptive CATALOGUE and GUIDE, the most complete issued, ed. Ordinary LIST free. JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

BARR'S BULBS, WINTER and SPRING.

The following Catalogue free on application:— Catalogue of beautiful flowering Bulbs for all seasons. Catalogue of all the best and most beautiful Daffodils (Narcissis). Catalogue of all the best and most beautiful Hardy Perennials. List of rare and beautiful Croci and Meadow Saffrons. COLLECTIONS of BULBS, 10s. 6d., 21s., 42s., 13s., & upwards. COLLECTIONS of DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s. Hyacinths, Tulips, Crocus, Daffodils, Iris, Peonies, Lilies, &c. BARR AND SON, 12, King Street, Covent Garden, London, W.C.

SEAKALE for FORCING, superior Selected

Crowns, 75s. per 1000; under 500, 8s. per 100. Cash with orders.—Address, ALFRED ATWOOD, Market Grower, 21, Shillington Street, Battersea, S.W.

Carnations Picotees, &c.

CHARLES TURNER'S AUTUMN CATALOGUE of the above is Now Ready, and may be had post-free on application.

It contains Descriptions of Many Novelties now being distributed, and to which Thirty-Six Certificates of Merit have been awarded.

The Royal Nurseries, Slough.

CARTERS'

SPECIAL CASH CLEARANCE SALE of

CHEAP HARDY BULBS,

For massing in large quantities in Parks, Promenades, Pleasure Grounds, Carriage Drives, Plantations, &c.

AT GREATLY REDUCED PRICES.

Carriage and Packing Free for Cash with Order.

DOUBLE DAFFODILS	price 50	0	per 1000.
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DOUBLE WHITE NARCISS	price 35	0	per 1000.
<i>(G. speciosa like—very sweet scented).</i>			
PHEASANT'S EYE NARCISS	price 13	6	per 1000.
MIXED DAFFODILS	price 15	0	per 1000.
<i>(A Grand Mixture.)</i>			
BLUE BELLS	price 12	6	per 1000.
WINTER ACONITES	price 10	6	per 1000.
SNOWDROPS	price 21	0	per 1000.

Buyers from this List must please give the price with their order. All are offered so long as unworked, and for quantities of not less than 1000 bulbs.

Suppliers of Bulbs to the Royal London Parks.

237 HIGH HOLBORN, LONDON

Trade Offer of Large Palms.

W. ICETON has a large Stock of the leading kind of Decorative PALMS, from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracenas, Bamboos, & Foliage Plants. Lowest Prices quoted on application. W. ICETON, Putney, S.W.

THE VERY BEST BULBS AT THE LOWEST RATES.

LARGE & VARIED COLLECTIONS OF

HYACINTHS, TULIPS, CROCUSES, SNOWDROPS, NARCISSI, LILLIES, &c.

All thoroughly ripened and in excellent condition for planting.

Illustrated Descriptive Catalogue, No. 397.

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Cant's Roses

HAVE WON THE

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Besides 1690 other FIRST PRIZES,

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The MOST SUCCESSFUL GROWER and EXHIBITOR FOR THE LAST 40 YEARS.

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ROSE GROWER,
COLCHESTER.

Telegrams—"CANT, COLCHESTER." Established 126 Years.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

Special Cheap Offer to the Trade and large Planters.

ISAAC MATTHEWS AND SON have large quantities of the under-mentioned trees to offer cheap:—10,000 RHODODENDRONS, Early, White, Scarlet, Pink, and other varieties, fine plants; and 500,000 Ponticum and Seeding Hybrids, various sizes, from 1 to 4 feet, by the 100 or 1000; 500,000 THORN QUICK, four and six-year old, extra strong; COMMON ASH, 3 to 4 feet and upwards; MOUNTAIN ASH, 6 to 12 feet; BIRCH, 8 to 9, 9 to 10, and 10 to 12 feet; HORSE CHESTNUTS, from 2 to 10 feet; also a large quantity of Horse Chestnuts, 12 to 15 feet, and specimen trees for avenue-planting. ENGLISH YEW, ELMS, and HORNBEAMS, 8 to 10 feet; AUSTRIAN PINES, fine trees, 3 to 8 feet; recently-transplanted POPLARS, varieties, 6 to 12 feet; SPRUCE, for Christmas Trees, also for Forest Planting; AUCUBAS, HOLLIES, BOX, CUPRESSUS, IVIES, LAURELS, &c.

CATALOGUES on application. The Nurseries, Milton, Stoke-on-Trent.

COVERT FOR GAME.

LAURELS, Common, 1½ to 2 feet, 70s. per 1000. Bushy, 2 to 3 feet, 100s. per 1000. Very bushy, 3 to 4 feet, 1s. per 100. PRIVET, Evergreen, 2 to 3 feet, 35s. per 1000. SPRUCE FIRS, Nov. 4 to 3½ feet, 40s. per 1000. BEYCH, extra strong, 3 to 4 feet, 40s. per 1000. QUICK, extra strong, 2 to 3 feet, 21s. per 1000. These transpl. 2½ to 4 feet, 30s. per 1000. LARCH and SCOTCH FIRS and other trees equally cheap. Catalogues and Samples free on application. R. TUCKER, Nurseries, Faring on, Berks.

ASPARAGUS, of fine quality—for forcing and planting; 2-yr. old, 2s. 6d. per 100; 3-yr. old, good roots, 3s. per 100; ditto, selected, 4s. per 100; 6d. per 100 less for quantities of 1000 and upwards. For forcing, 4-yr. old, 5s. per 100; 5-yr. old, splendid roots, 7s. 6d. per 100; ditto selected, 10s. per 100; 6-yr. old, extra fine, 12s. 6d. per 100. Cash with order. My Asparagus always makes top price at Covent Garden.

Read the following unsolicited testimonial:—"Please send me another 200 of 5-yr. old Asparagus Roots—I say that the last 200 were the best lot of forcing roots I ever bought, and my employer says the quality is excellent.—C. H. PERKINS, The Gardens, Milton Abrey, Blandford, December 27, 1890." J. J. CLARK, Market Gardener, Goldstone, Brighton.

DUTCH FLOWER BULBS.

Miscellaneous, Bulbous, & Tuberos-rooted Plants.

THE NEW CATALOGUE (81st year), of these Articles (No. 509), of E. H. KRELAGE and SON, NURSERYMEN, SEEDSMEN, and FLOWERS to the Court, Haarlem (Holland), has been published, and will be sent, post-free, and without charge, to all who apply for it by prepaid letters, direct to

E. H. KRELAGE & SON, Haarlem, Holland.

ROSES! ROSES! ROSES!
PLANT NOW.

100 STRONG DWARF H.P. ROSES, for 35/- 100

THE FINEST IN THE TRADE.

Send for Sample Dozen, 5s. Cash with Order.

CATALOGUES, free on Application. C. H. GORRINGE, Roselands Nursery, EASTBOURNE.

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Carriage paid. Packed gratis. An immense stock of strong, healthy, well-rooted Trees. No Starvelings.

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Roses wonderfully cheap. The best that money can buy. Before ordering any, be sure to write for our Illustrated Catalogue. HIGH VIEW NURSERIES, JERSEY.

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OFFERS

10 FIRST-RATE STANDARD ROSES for 10s.
10 " HALF-STANDARD " " 7s. 6d.
10 " SPLENDID DWARF or BUSH " " 6s.
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All Best Sorts, Packing Free Cash with Order. CATALOGUE on application.

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ROSES in Pots, from 15s. per dozen. ORNAMENTAL TREES, 91 ACRES. 4 ACRES of GLASS. CLEMATIS (80,000), from 15s. per dozen. N.B.—Single Plants are sold at slightly increased prices.

SEEDS & BULBS (VEGETABLE, FLOWER, and FARM. DESCRIPTIVE LIST, FREE. RICHARD SMITH & CO., WORCESTER.

WINTER FLOWERING PLANTS. HEATHS, EPACRIS, LILACS, GENISTA, CYCLAMENS, PRIMULAS, BOUVARDIAS, CAMELLIAS, AZALEAS, &c. Splendidly set for Bloom. PRICES ON APPLICATION.

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WE are Large Importers of DUTCH and other FLOWER ROOTS, and offer a fine assortment of all the choicest in HYACINTHS, TULIPS, NARCISSI, LILIES, CROCUS, ANEMONES, &c., in finest quality, at moderate prices.

LILIUM HARRISII (THE BERMUDA EASTER LILY).

Magnificent variety. Long, pure white, trumpet flowers, deliciously scented. First rate for Pot Culture or for Forcing. Fine selected bulbs ... per 100, 40s.; per dozen 4s. 0d. Extra fine bulbs ... per 100, 60s.; per dozen 8s. 6d. A few very large bulbs ... per dozen 15s. 0d.

FRUIT TREES.

APPLES, PEARS, PLUMS, CHERRIES, PEACHES, APRICOTS, NECTARINES. A grand assortment of all the Choicest Varieties in fine Standard, Dwarf, and Trained Trees. Also a fine Collection of GOOSEBERRIES, CURRANTS, RASPBERRIES, STRAWBERRY PLANTS, &c.

ROSES.

HYBRID PERPETUALS and TEAS. A very fine Collection. Before planting, send for our beautifully illustrated CATALOGUE of the above, gratis and post-free to all intending purchasers.

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See our Special Wholesale Catalogue of Bulbs. Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILIUMS, DAFFODILS, SNOWDROPS, IRIS, &c., free on application. Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON, SEED and BULB MERCHANTS, EXETER STREET, STRAND, LONDON, W.C.

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INTENDING PLANTERS at PUBLIC PARKS, CEMETERIES, and PRIVATE PLEASURE-GROUNDS, are respectfully invited to inspect the immense Stock of TREES and SHRUBS for these purposes, in the extensive Nurseries of—

LITTLE & BALLANTYNE (BY APPOINTMENT, NURSERYMEN to THE QUEEN), CARLISLE. Catalogues, and all Information, free by Post.

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Table listing various evergreen hedges with prices per 100. Includes ARBOR-VITAE, Cupressus Lawsoniana, Hollies, Thuja Lobbi, Yews, and JNO. JEFFERIES AND SON.

RASPBERRIES, "Fastolf," finest sort for market; strong Canes, healthy and well rooted. Best time for planting. Free on rail, 3s. 6d. per 100; 25s. per 1000. LAWS, Nurseries, Beccles.

NARCISSUS, Grande Monarque, 6/8. per 1000, 6s. 6d. per 100; CAMPERNELLI, 20s. per 1000, 2s. 6d. per 100. Carriage paid to any railway station in England upon orders for thousands only. T. GELL, St. Lawrence, Ventnor, Isle of Wight.



AMERICAN TUBEROSE BULBS. THE DOUBLE PEARL.

THE FINEST AND LARGEST BULBS EVER GROWN. ORDER DIRECT FROM THE GROWER.

Our DOUBLE PEARLS this season are the finest we have ever grown, and Orders for early shipment should be booked at once. They will be ready for shipment last of November.

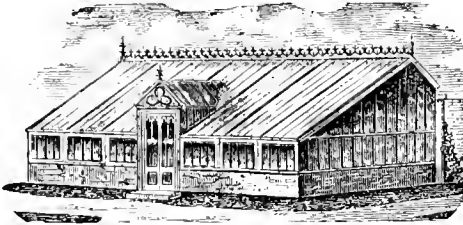
Bulbs, No. 1 size, from 4 to 6 inches in circumference, £1 10s. per 1000. " No. 2 " " 3 1/2 to 4 1/2 " " £1 5s " We have arranged for special low freight by steamer direct to London. Remittances to accompany Orders.

ROBERT BUIST, JR., BULB AND SEED GROWER, PHILADELPHIA, U.S.A.

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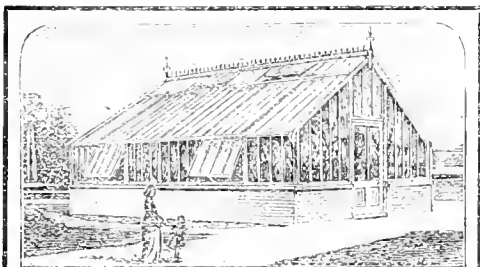
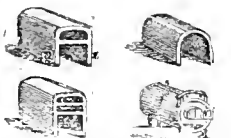
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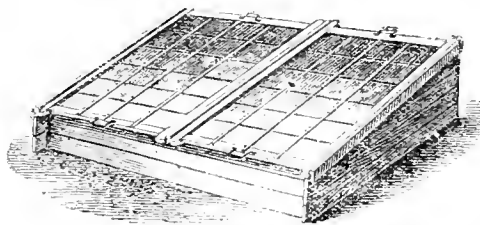
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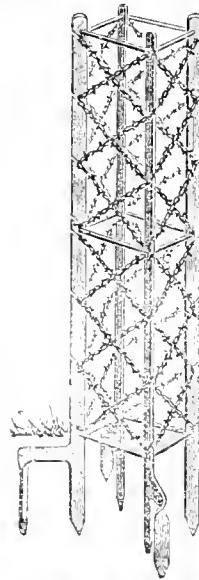
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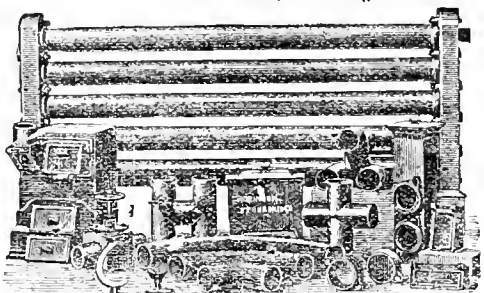
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Large flower, broad primrose perianth, with a very expanded yellow crown, slightly shaded with orange.
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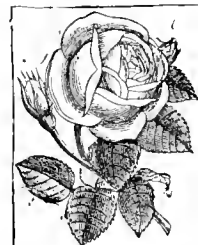
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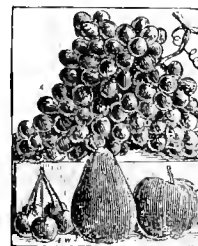
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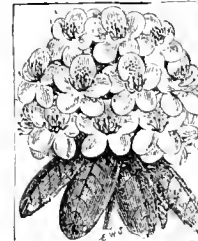


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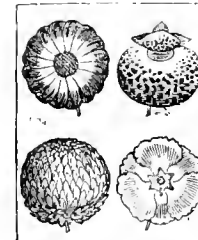


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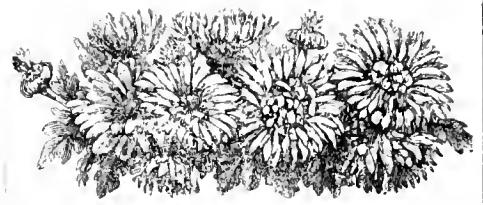
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THE
Gardeners' Chronicle.

SATURDAY, NOVEMBER 7, 1891.

CROXTETH HALL.

THIS is the beautiful seat of the Earl of Sefton, and those who follow the movements of royalty will remember the visits of the Prince of Wales to Croxteth Hall, and of the Duke of Clarence and Avondale this year, when he opened the Royal Infirmary at Liverpool. The original seat of the family of Molineux was at Sephton, a place some miles distant, on the sea-board, near the mouth of the River Mersey, where a range of dreary sand-hills forms a barrier along the shore, which is lined with marshes, and covered with rabbit-warrens.

The Earls of Sefton trace their descent from William de Molineux, who is mentioned in the Norman chronicles, before the Conquest, as a man of noble origin, much esteemed by Duke William. Soon after the Conquest, this first Molyneux known to fame received the grant of Sephton, and made it his chief seat. Among many distinguished soldiers of a family of soldiers, from Duke William's favourite downwards, was Sir William Molineux, who was dubbed knight-banneret by the Black Prince on the field of battle, and of whom it is recorded in his epitaph that the third Edward "loved him as a friend." His son, Sir Richard, eminently distinguished himself at the battle of Agincourt, where he obtained his knighthood. The next Sir Richard married a sister of Thomas Stanley, Earl of Derby, and died the death of a soldier in 1459. His grandson, another soldier of much renown, fought at Flodden; and, next in order, may be mentioned the Sir Richard of Elizabeth's reign, whom that queen knighted, which is pretty good evidence that he deserved the honour. On the institution of the order of baronets, Sir Richard Molyneux was the second person advanced to the dignity. Rising to a higher seat, he was made an Irish peer by Charles I., with the title of Viscount Molyneux. The second viscount was engaged on the king's side at Worcester, and escaped that disastrous battle with difficulty. The next viscount was created Earl of Sefton in the peerage of Ireland, and his son became a peer of the realm by the title of Baron Sefton of Croxteth. Many of this distinguished family—lords, tenants, constables of Liverpool, or chief foresters of the royal parks and forests in Derbyshire—lie buried in Sephton church, which holds as much dust of once-eminent men as almost any village church in England. Sephton Hall, a stately pile surrounded by a moat, stood opposite the church, on high ground. But this earliest English home of the family of Molyneux was razed to the ground, and even the farm-house, which occupied its site, was removed four-score years ago. At the present time, a few heaps of stones, from the massive walls of the castle, are the sole witnesses of its existence.

The old family, however, have outlived their house, and Croxteth Park is, without doubt, a much more comfortable and elegant residence than its predecessor. It stands some 3 miles distant from Knowsley, in the parish of West Derby, and tram-cars from Liverpool run within less than a mile of its doors. The Hall is a very handsome house, built of brick, with stone "dressings" to the doors and windows, in Queen Anne style, which succeeded the mullioned windows and heavy gables and chimneys of the Jacobean and Elizabethan periods. The front was erected in 1702, and the back, formerly of wood and plaster, was rebuilt in 1802, and large additions were made in 1874, so that the present house covers a great deal of ground.

An extensive lawn has been tastefully planted with flower-beds and clumps of shrubs, and with timber trees not too thickly set, and not too near the house, so as to darken the windows, or obstruct the view into the park beyond. The most conspicuous of all the trees on the lawn, though not by any means the largest, is a variegated Evergreen Oak, with branches drooping on the grass. There are lawns, and flowers, and shrubs, on three sides of the house, and the approach-road, covered with white and grey gravel, winds pleasantly through thick clumps of evergreens, amongst which the Rhododendron and Yew abound. Outside is the park, with a capital cricket-ground on the east-side of the house, where the favourite game is often played, gentle and simple joining in it together. Looking back to the house, we see that its first floor, which would have been the ground-floor, is lifted 12 feet above the ground by a terrace, which is covered with handsome creepers.

In the kitchen garden department (ably managed by Mr. Barham), there are twenty-four houses, including six vicarries, a Pine-stove and Pine-pit, Melon-house, Cucumber house, Cherry and Plum-houses, two stoves, and several houses filled with flowers; Rose-house, and Azalea-house. A favourite Melon here is Conquering Hero, which is planted in 7-inch pots, covered with charcoal, to prevent canker, and plunged in 16-inch pots—a system found very successful. The garden walls are covered with fruit trees, especially Pears and Morello Cherries, each bearing good crops this year, though the former, in August was waiting for sun. Among the most successful Pears are Pomaston Duchess, Brockworth Park, and Bon Chrétien. In the Cherry-house, the trees planted in the borders do better there than those in pots. May Duke sets well, so does Elton and Black Tartarian. Among the Plums, planted in the border of a house, and doing well, we noted Jefferson, Kirke's, Reine Claude de Bavay, all favourites, especially the last, one tree of which bore a great crop this year on a little standard 6 feet high. Golden Drop is another favourite. Muscat Grapes were in capital order, good bunches ripening fast. The Black Hamburgh, in four houses, have all been specially successful. In one of these houses might be noted white paper-guards over each bunch, to keep off the drip from a roof which is somewhat flat.

In the three Peach-houses, the fruit, trained on iron trellises, and well-exposed to light, were full of colour; and, in fact, everything here betokens skilful and vigorous management, and an adroit handling of the forces at command. Larger staffs of gardeners, in our experience, have proved less effective than the Lancashire corps at Croxteth Hall. H. E.

NEW OR NOTEWORTHY PLANT.

CATTELEYA LABIATA LUDDEMANNIANA.

An exceptionally large form of this handsome Cattleya is now flowering in the collection of E. G. Wrigley, Esq., Howick House, Preston. The sepals and petals are of a light rose-lilac tint, the latter being fully 4 inches long, one of them 3½ and the other not less than 3½ inches across. The lip is 3¾ inches long and 2¼ inches wide, and when expanded is seen to have the characteristic narrow form of this variety.

The front lobe is deep crimson-purple, the blotches on the sides of the throat light yellow, and the disc veined with dull reddish-purple. It is indeed a giant flower, and from the gardener, Mr. W. Hough, we learn that the many people who have seen it all agree that they have not seen its equal in size. It is sufficiently typical in other respects. R. A. Rolfe.

KEW NOTES.

FURCRAEA PUBESCENS.—This small species of *Furcraea* was described by Professor Todaro in 1879, and has been accepted as a good species by Mr. Baker. A plant of it is now in flower in the succulent-house at Kew. It has lanceolate green leaves, 18 inches long, by 2 inches in width, the margins clothed with small spines. The scape is central, erect, 5 feet high, the upper half an elegant branched panicle bearing numerous flowers, each of which is 2 inches across, greenish-white and fragrant. The buds, ovaries, and pedicels are covered with a very fine grey pubescence. This species is elegant enough and small enough to deserve favour as a greenhouse plant. Its worst fault is its perishing immediately after it flowers, a fault which is common to all *Furcraeas*. W. W.

Streptocarpus Galpini, Hook. fil. (MS.)—This is a new species of *Streptocarpus* which has lately been introduced from the Transvaal to Kew, where it has just flowered for the first time. It belongs to the monophyllous section of the genus, and it has numerous many-flowered scapes which spring from the extreme base of the midrib of the leaf. The largest leaf so far is 8 inches long by 6 inches in width, the nerves very thick and fleshy, tinged with red on the under side. The whole leaf is clothed with a soft silky tomentum. The scapes are erect, 6 inches high, and the flowers develop in slow succession. A few days ago the Kew plant had fourteen flowers open together. Each flower is nearly 1½ inch across, and it differs from all other species of the genus in the shortness of its tube. The colour is a rich mauve-blue, with a conspicuous area of white in the throat. This is the prettiest of all the introduced species of *Streptocarpus*. Seeds of it were received from Mr. E. Galpin, of Barberton, last year. W. W. [The plant is figured in the current number of the *Journal of Horticulture*, Ed.]

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM SPECTABILE IN WESTERN CHINA.

THE discovery, a few years ago, of the Canadian *Cypridium arietinum* in the Chinese province of Yuonao, by the Abbé Delavay, was an interesting discovery to the student of plant distribution. Dr. Henry has since collected it in Central China, and Mr. A. E. Pratt nearer the Tibetan frontier. But in the collection recently made by the latter gentleman, now being determined at Kew, are some fine specimens of another Canadian *Cypridium*—namely, *C. spectabile*, whose presence in a wild state in that interesting region may therefore be taken as an ascertained fact. The collection is localised as "West Szechuen and Tibetan Frontier; chiefly near Tachienlu, at 9000 to 13,500 feet." Many other plants are common to China and Japan, and North America, but as Orchids are not usually very widely distributed, the above discoveries are certainly interesting. These are not quite isolated instances in the genus, however, for *C. guttatum*, which also occurs here, ranges right through Eastern Asia to Alaska, in North-western America. It is also interesting to note that Dr. Henry collected *C. japonicum* in Central China, as formerly it was only known from Japan. R. A. Rolfe.

CATTELEYA BOWRINGIANA.

Everywhere this beautiful and free-growing introduction of Messrs. Jas. Veitch & Son is flowering and brightening the Orchid-house with the cheerful

rosy-purple of its flowers. A sample of a remarkably large and highly-coloured variety comes from Mr. John Smythe, Bitterne Park Gardens, Ringwood, Hants, accompanied by the following remarks, which, as they express the general opinion of the plant, are worth quoting. Mr. Smythe says:—"I send you flower of a good form of *Cattleya Bowringiana*. It is one of my first favourites. I have plants with five spikes, and some of them bearing twelve flowers each. Is not this rather good? A grander sight for the dull season you could scarcely imagine. The plants have done well with me; I only had them three years ago, and they were then small, and with only one little break each. A houseful of it now would be a sight!"

RENANTHERA ROHANIANA

is an evergreen plant with distichous leaves, and in every respect its habit is similar to that of the *Vanda*, but the flowers differ from that genus in having a pointed and movable lip, which is destitute of any spur. The plant being a native of the warmest and moistest part of Borneo, it is natural to infer that it thrives best under cultivation in the heat of the East Indian-house; but it is quite surprising to see the low temperature these plants put up with during winter with impunity. We know a plant of R. Lowii which has been subjected to as low a temperature as 58° and 60° during the last three or four years, suffering only in not developing its flower-spikes, but the general health of the plant is not diminished. The flowers of this plant are borne upon long pendent spikes, those at the base being four in number, the ground colour being rich orange-yellow, thickly spotted with purplish-black. A considerable space is bare between these and the ordinary flowers, which are narrower, much undulated at the margins, and entirely of a different colour, having a white ground thickly blotched with large and irregular markings of blood-red. The plant likes a moist atmosphere when growing; and during the winter if kept cool, great care must be exercised in giving it water, but under no circumstances must it be allowed to suffer from drought. *Orchid Album*, vol. x., part 109.

TRIXPERMUM BERKELEYI.

As may be inferred, this is not a large-flowered and startling beauty, for its flowers are not more than 1 inch or 1½ inch across the widest part. Its leaves seldom exceed 6 or 8 inches across; the raceme is pendent, the flowers much crowded upon the stem, and, as before stated, measuring 1 inch or 1½ inch across; these are thick and waxy in texture, but we could not perceive any perfume arising from them. As the flowers of many Orchids are odoriferous at various times in the day and night, we can only say that at no time when we tried the plant did we perceive any odour. The plant is very free-flowering, and the bloom lasts a long time in perfection. It should be grown in small hanging earthenware pans, which should be well-drained, and hung up near the roof-glass, in order to let the plant have as much light and air as possible, but yet it must be shaded from the direct rays of the sun through the middle of the day. A little chopped sphagnum moss and some nodules of peat fibre and charcoal will be all that is necessary about its roots, but the plant must always be kept moist during the summer season by spraying with water from the syringe, a moist atmosphere, and by water to its roots; and in the winter by more careful attention to its wants. Under no circumstances should the plants be allowed to suffer through drought, and a warm part of the East Indian house suits it at all times. *Orchid Album*, vol. x., part 109.

CYPRIPEDIUM × ENFIELDENSE, n. hybr.

This handsome hybrid was raised in the collection of A. J. Hollington, Esq., Forty Hill, Enfield, by Mr. Ayling, from *C. Lawrenceanum*, crossed with the pollen of *C. Hookeræ*. It may be described as an improved *C. × marmorophyllum*, which it most closely resembles, though the latter differs in having *C. barbatum* instead of *C. Lawrenceanum* for one

parent. The foliage of *C. Lawrenceanum* and *C. Hookeræ* are very similar, and that of *C. × Enfieldense* is naturally of the same type. The dorsal sepal is very broadly ovate and subacute, stained and nerved with purple on a light-green ground, paler towards the margin. The petals are reflexed, and much like *C. Hookeræ* in their bright-purple colour, but not quite so broad near the apex. The lip and staminode are intermediate in character. It is a bold and effective plant of good form and colour.

MICROSTYLIS METALLICA.

A plant of *Microstylis metallica* is now in bloom in the Birmingham Botanical Gardens, a lovely terrestrial Orchid, of dwarf habit, with a long slender raceme of flowers, of which the odd sepal is yellow,

dington, and Twickenham. Only two houses, and not large ones, are devoted to *Chrysanthemum*, for it is a very small place, and Orchids in considerable variety, with table and other small decorative plants seem to almost monopolise the houses. Our purpose just now is with the *Chrysanthemum*, for with the exception of a batch of *Cypripedium Spicerianum*, there is not much in the Orchid line in bloom. The collection comprises most of the best Japanese incurved, reflexed, and *Anemone* sections, perhaps not more than 200 plants in all, but then every one is carrying fine flowers. Mr. Furze always stands prominent in the competitions, and when his very limited area of glass is seen it is wonderful that he should do so well. Perhaps the secret of producing really good class flowers is found in moderation in

were the best, and the flowers superb, including the new hirsute variety *Louis Bœhmer*; it is evidently a first-class show variety, and is a robust grower. A fine yellow, Mr. H. Summers, blooming from the crown-bud, on a plant 2 feet in height, has a good flower; but on another plant, 3 feet in height, on which terminal buds were taken, are much finer flowers. Flowers of *E. Molyneux*, so beautiful on some plants, were very poor on others, the petals being thin and incurved. Mr. Coombs holds that when plants of this variety show such tendency, they should never be used for propagation, only the plants which have really fine reflexed flowers should be retained for that purpose. The new *Puritan*, a pleasing pink, was good; and the reddish chestnut, *Gloire de Rocher*, seemed to be a flower that will appear well on the show-boards. A beautiful rich-coloured variety is *M. Bernard*, of others *Val d'Andorre*, *Jeanne Delaux*, *Sarah Owen*, *Madame J. Laing*, *Avalanche*, *Stanstead White*, *Condor*, *Sunflower*, *Belle Paule*, *Mons. Tarin*, *Volunteer*, *Charlie Sharman*, *Gloriosum*, *Etoile de Lyon*, terminal flowers of fine colour; *Madame J. Pigny*, *John Lambert*, *Madame C. Audiguier*, *Maitha Harding*, and *R. Brockbank*, made up numerous and high-class flowers. Perhaps because standing somewhat thinly, and especially near the glass, the blooms seem not to have suffered at all from damp, and yet so near the river Thames, in a low-lying district, and with such a continuous rainfall, such a misfortune as bloom-damping might have been looked for. Judicious firing, with plenty of air, however, has admirably kept down that trouble at Teddington. *A. D.*

PICEA PUNGENS.*

We avail ourselves of the opportunity afforded us by Mr. Anthony Waterer to figure the cone of this beautiful Spruce. Up to this time the cone has, we believe, not been illustrated. *Picea pungens* is now gradually becoming known, but it is worth while mentioning that it varies in colour from dark apple-green to the most beautiful silvery tint, as in the variety known as *argentea*, which is even more beautiful than the var. *glauca*, originally known as *Parryana glauca*. It is widely different from, and, in this climate, far inferior to, *P. Engelmanni*, which is often confounded with it. *P. pungens* is perfectly hardy, and its colour remains throughout the year, though naturally brightest in spring. It does well even in the vicinity of towns, so that we can strongly recommend its extended culture as an ornamental tree. It is too early to say anything definite about it as a timber tree, but at least we may say that it promises well, as it grows fast, and is very hardy. We add in a note a few particulars for the use of the botanist. *M. T. M.*

FLORISTS' FLOWERS.

THE PENTSTEMON.

The question was asked recently if the garden varieties of the *Pentstemon* were hardy. These plants are generally considered to be hardy, but it is really only to a certain extent, and in some parts of the country. In the neighbourhood of London they are not hardy, although in mild winters most of the plants will survive, and make beautiful objects, well-furnished with flower-spikes the following season. In a severe winter most of them will die, therefore it is always desirable to make sure of

* *Picea pungens*, *Engelmann* (syn. *Parryana* and *commutata*, hort.).—Fragrance aromatic. Bark rich orange. Pulviti orange, flask shaped, but four-sided; truncate. Leaves on old branch, arcuate, linear-acuminate, four-sided, 10 to 15 mill. long. Leaves on the growing branches 2 to 3 cm. long, arcuate, linear mucronate, four-sided, with four to six rows of stomata between each of the prominent green angles. Buds ovoid cone, sparsely scattered. Scales oblong, membranous, light brown, recurved at the edges above. Male flowers not seen. Cones pendulous, 7 cm. by 4, oblong, conoid. Bracts much shorter than the scale, membranous, cuneate, rhomboidal acuminate, lacinate at the upper edge. Scales light glossy brown, undulate, broad at the base, orate obtuse, wavy, lacinate, and more or less recurved at the tips. Seed with an obovate wing.

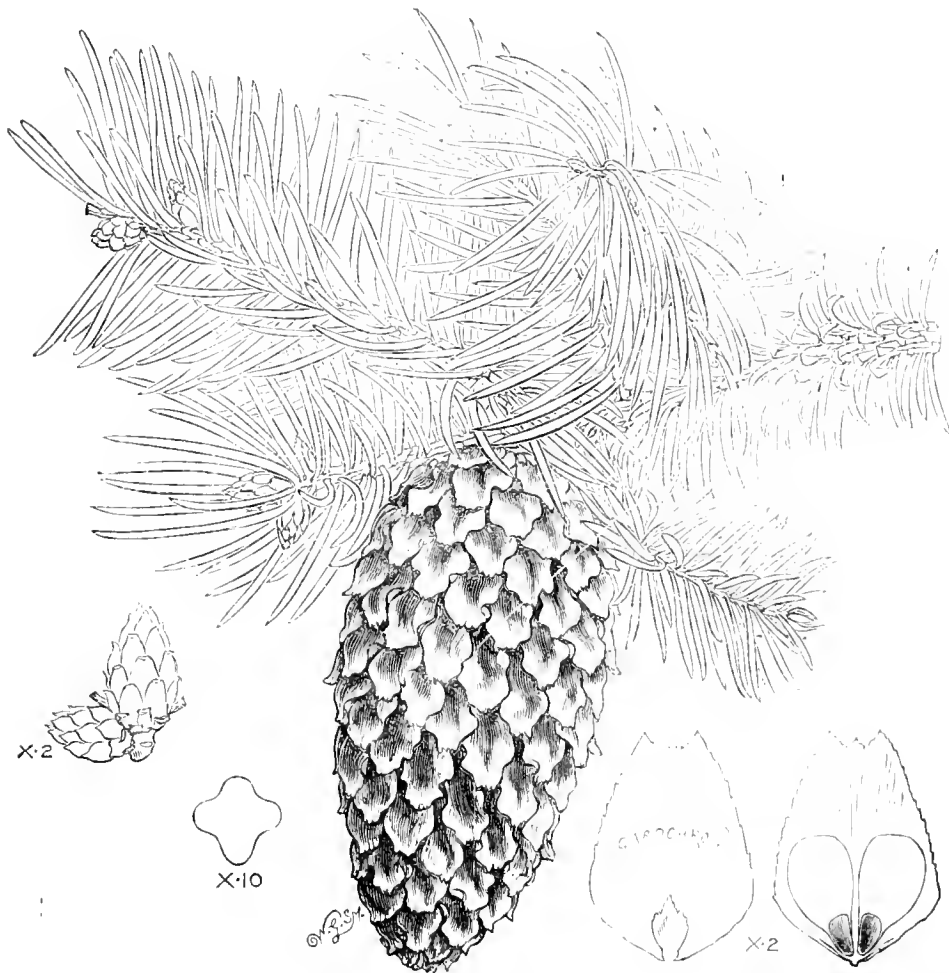


FIG. 73.—CONE OF PICEA PUNGENS.

lateral sepals one side rose-coloured, the other yellow, petals rose, and peduncle violet. Leaves oblong acute, of a deep metallic blackish-purple colour above, and rose-coloured underneath. It is a Borrean species.

CHRYSANTHEMUMS AT MR. FURZE'S.

CHRYSANTHEMUMS are well done in the garden of Mr. Furze at Teddington, by his gardener, Mr. Coombs. There is one characteristic about Mr. Furze in regard to exhibiting, which merits commendation. He regards local shows with chief favour, holding that he grows the flowers first for his own pleasure, and, in the next place, for the gratification of his neighbours, hence his exhibits are mostly found in the shows at Kingston, Ted-

effort, so that what plants are done are done well. Amongst the reflexed varieties, Mr. Coombs shows with special satisfaction, *W. Earley*, of a rich reddish-rose colour, which he regards with special favour. *Madlle. Madeline Tesier*, *Cullingfordii*, *King of Crimson*, *Amy Furze*, the *Christines*, and others are all in capital form.

The best *Anemones* expanded were *Jeanne Marty*, *Grande Alvéole*, *Nelson*, *Annie Low*—a primrose-coloured sport from *Lady Margaret*; also that variety and others. Of incurved flowers, that excellent white *Mrs. Heale*, was very fine in form and substance. Good also was the dark-coloured *Refulgence*, and the golden-buff *Barbara*; very fine were the new sport variety *Alfred Lyne*, the new French variety *M. A. Brahaut*, and *Mrs. Coleman*, and *Violet Tomlin*, one of the handsomest incurved.

In the favourite Japanese section the varieties

keeping the stock by taking cuttings during the month of October. They will succeed very well with the same kind of treatment as that usually afforded the bedding Calceolarias—i.e., the cuttings may be planted in a border, sheltered from the east and north, and covered with a hand-light, or they may be planted in boxes, and be placed in a cold frame, or they may be planted out in the frame. If severe frost sets in, the frame should be banked up with cocoa-fibre refuse, and mats or litter placed on the glass. The frame where our Calceolarias and Pentstemons were wintered last season was so treated, and they passed safely through the winter, although the temperature fell nearly to zero, and low temperature continued for many weeks. This was a sure test of their capabilities of endurance. The garden varieties of *P. gentianoides* are useful for producing flowers during October and early November, and their varied colours give an interest to the garden at this late period of the year. Pentstemons seed freely, and unless the capsules are removed, the plants soon cease to flower; but by their careful removal, flowering goes on into the winter if the weather is mild.

THE GARDEN AND FORCING PINK.

Readers of the *Gardeners' Chronicle* will remember that I have urged the importance of planting out the laced Pinks as early as the first or second week in September, so that the roots may get a firm hold of the soil. All varieties of the Pink are so perfectly hardy, that there is no need for storing any of them in pots; moreover, I have noticed that if any of the plants should die in the beds during the winter, and they have to be replaced with plants wintered in pots in the spring, these plants seldom produced as well-laced flowers as did the permanent occupants of the bed. It is necessary to stir the surface of the beds in dry weather, and make firm any plants loosened or thrown up by frosts. The plants have a prettier effect when in flower if they are not planted too wide apart, 8 or 9 inches asunder is a sufficient distance; larger plants put out earlier in the season may be from 10 inches to 1 foot asunder at the outside.

Pinks grown to force for early bloom are as much garden Pinks as any others we have, and succeed equally well out-of-doors; but many garden Pinks cannot be classed as forcing Pinks, because the flowers are generally out of character when forced, and none of the laced Pinks flower in their true character when forced. The best varieties for forcing are the white ones. The old fringed white, grown in the fields about here, is a useful and very pretty variety. It is able to withstand rough treatment, and produces masses of flowers, which are never so double as to force the calyx open. The prettiest variety for pot culture is Lady Blanche, the flowers of pure white, and of exquisite form; but I fancy it has become too delicate to produce the large masses required for the production of a good head of bloom. I have not grown it for several years. The new one, raised by Hooper, of Bath, and named Her Majesty, will be a valuable variety if it force well, and in that event it should take the place of the older ones. By putting in the cuttings of these under glass early in the year, as I have frequently advised, and planting them out in good soil, they form big clumps, and should be potted up in October or early this month. They may be placed in an airy frame until they are required for the forcing-house. *Jas. Douglas.*

NURSERY NOTES.

CHRYSANTHEMUMS AT ST. JOHN'S NURSERY, PUTNEY.

MR. STEVENS is well known as a large grower of Chrysanthemums, not only for exhibition in plant groups, but also for market; hence his quantities are considerable. Thus we see at his place large clumps, as it were, of such effective varieties as Mr. W. Holmes, E. Molyneux, Elaine, Sunflower, Amy

Furze, Source d'Or, and others, which are so striking as to suggest the desirability of inviting groups of a dozen plants of one sort only at shows, as in that way a very fine result is obtained. Damp has done much harm to many of the earlier flowers of some varieties, whilst others suffer nothing. The chief show-house is 80 feet by 25 feet, enabling a very fine display to be made, but the roof is too low and the ventilation imperfect; hence, largely, the damping complained of. Still there are plants enough to form twenty such groups as Mr. Stevens puts up at the Royal Aquarium, and which invariably take a good place in the competition.

Of Japanese, very fine and abundant, are Mons. Bernard, a rich dark magenta-coloured flower, of great beauty; W. H. Lincoln, a fine, broad, incurved, rich yellow variety; Edouard Audiguier, rich crimson; Maiden's Blush, very fine; Avalanche, Stanstead White, E. Molyneux, a beautiful Japanese Anemone; M. C. Lebosqz, primrose-buff; Sunflower, in grand form, and blooming freely on cut-back plants; Etoile de Lyon, Criterion, &c. Beyond those previously named as good for market, are William Stevens, Miss Stevens, Gorgeous, Mons. Lemoine, and for later cutting Albel, Golden Ethel, Golden Gem, Mrs. H. J. Jones, and that very dwarf late variety, Princess Blanche, Mr. Stevens specially recommends for market cutting. There are some three or four large houses crammed full with plants to furnish cut flowers, and the supply it is evident will be well maintained until Christmas. There are also in the collection some good incurved flowers, notably Princess of Wales, on one plant of which is also one bloom of Mrs. Heale, so pure white is the sport. Mrs. Coleman, Miss Haggas, Violet Tomlin, John Doughty, Sarah Owen, and Antonelli are a few of the many excellent incurved sorts here. Few blooms are grown to exhibit on show boards. All are shown on the plants, with the exception perhaps of a few for a special purpose. Growers for market do not care to grow flowers, which, after being cut and exhibited, are of little further value. It certainly looks at present as if Mr. Stevens would not put up one of the least meritorious of the Chrysanthemum plant groups at the coming show of the National Society.

CAMBERWELL NURSERY.

MR. NORMAN DAVIS, at Camberwell, has a high reputation as a provider of first-class Chrysanthemum novelties, and enjoys, further, the distinction of being enabled to show how possible it is to grow an extensive trade collection of Chrysanthemums well in the densely populated district of South London. His plants also differ materially from those generally found in the public parks and other show places, because he propagates so late as March and April; hence his plants are dwarfer, not one exceeding 4 feet in height; and as we look over the large collection which fills the very fine light span-house of some 60 feet by 25 feet at Camberwell, it is easy to see every bloom below the eye-line. As one result of the late propagating, generally the blooms are later, but the plants ranging from 2 to 4 feet are so stout and well-foliaged that they could hardly be excelled. Really grand on these late-struck plants are blooms of Vivian Morel. What a grand reflexed flower this is! quite putting into the shade altogether that flat coarse flower, Etoile de Lyon. Louis Bohmer is promising some good flowers, although Mr. Davis thinks the centre of this variety hard to expand. If so, that will affect its exhibition value. Of varieties less known yet, Miss Annie Hartsborn, white incurved Japanese; Mrs. Frank Clinton, yellow incurved; Elliot F. Sheppard, straw-yellow ribbon petal; Mrs. Walters, rich deep crimson, sport from E. Audiguier; Caesar Costa, like E. Molyneux, but has shorter petals; Bouquet de Dames, white, short stout petals, very free and robust; Florence Davis, after Meg Merrilies style, tulle flower; W. H. Lincoln, beautiful yellow, very dwarf, robust and free; and Gloire de Rocher, rich reddish-chestnut, are all admirable varieties. Of course, the collection includes most of the older sorts, but these need not here be particularised. Of

incurved forms beyond the now almost common M. A. Brahaat is May Tomlin, a deep rosy-lilac sport from Princess of Wales, which will doubtless be a welcome addition to this section. The pretty Barbara is largely grown, and promises to produce many beautiful flowers. Of new reflexed forms, Marquise de Clapiers, of a rich pink colour, promises to make a fine variety. Princess Blanche, very dwarf and late, is, perhaps, the best pure white incurved to grow for Christmas cutting. The plants run about 2 feet in height.

Of Pompons, of which there is a very large collection, Miss Bateman, reddish buff; Helène, amaranth; St. Michael, rich yellow; Cendrillon, rosy-pink; Miss Wheeler, William Westlake, Maid of Kent, and Blanche Douglas, were all excellent. Of single Pompons, exceedingly pretty were Miss Rose, pink, very free, and carrying a charming head of bloom; Mary Anderson, white; Terra-Cotta, reddish-buff; Mrs. Langtry, and Jane, the pretty white Japanese Pompon.

FRANKWELL NURSERIES, SHREWSBURY.

THESE are pleasantly situated on the outskirts of the ancient and very picturesque town of Shrewsbury, and are owned by Messrs. Pritchard & Sons. Both the grounds and glasshouses have been considerably extended during recent years; indeed, at the present time there are two large span-roofed houses being completed for the growth of Tea Roses and Tomatos. The latter are growing in pots, with single stems, the shoots and leaves being kept well thinned and stopped; the plants being very healthy, and carrying heavy crops of good clean fruits of Hathaway's Excelsior type. The houses contain a remarkably well-grown lot of decorative plants in great variety, and a portion of which, covering about 40 yards of staging in one of the large tents at the recent grand show of the Shropshire Floral and Horticultural Society, and capitally arranged, showed to great advantage, and were greatly admired. Amongst them was a batch of *Lilium auratum* growing in $4\frac{1}{2}$ -inch pots, with spikes about 2½ feet high, having six or seven large flowers each, and a profusion of clean foliage. I also noticed a fine batch of seedling plants of *Grevillea robusta*, growing in 48-pots, which were very pictures of health. These light, erect-growing plants, with their Fern-like foliage, are very telling when judiciously intermixed with variegated and bright-foliaged and flowering plants. Mention may also be made of large batches and good assortments of Pelargoniums and tuberous-rooted Begonias, which made quite a fine display in one of the houses.

The nursery grounds cover an area of about 12 acres, and occupy an elevated situation, from which charming and extensive views (eastward and northward) over the town of Shrewsbury and the landscape beyond, are obtained. Northward is Hawkstone, the beautiful seat of Lord Hill, and three miles eastward is Sundorne Castle, and the "Wrekin," a beautifully wooded hill, near Wellington, about 10 miles distant, with occasional glimpses of the Severa winding its course through the fertile Shropshire valleys within a few hundred yards of Messrs. Pritchard's nursery.

Trees of every description growing in such a high and exposed situation necessarily make a sturdy growth, and transplant well. The stock of Apple and Pear trees is very promising, being clean, and many of them bearing good crops for their size, of clean, bright fruit. Golden Holly, Yews, Cupressus, Juniperus, and other coniferous trees, bear evidence of being in congenial soil, and of being well looked after in their various stages of growth; the same remark applies to the quantities of white Arums, Spiræas, &c., planted out in trenches, &c., for putting up this month for winter and spring flowering. *Visitor.*

THE CULTURE OF ALPINE PLANTS.

(Continued from p. 481.)

THERE is just one thing more which I ought to notice while I am speaking of the utility of pockets which are on the level, or only on a gentle decline.

It is very helpful to some alpine plants during the scorching months of the year to give them a thick coating of cocoa-fibre. *Gentiana verna* e.g., is all the better for it at once, and will begin to run. *Ranunculus pyrenaica* responds with great acclamation, and in my part of the world a good mulching-substance is an exceptionally useful ally in defeating the rays of the sun. But the power to avail oneself of it entirely depends on the way in which the rockery has been built.

There is an immense satisfaction in the process of consulting for the wishes of one's plants, and in getting them to feel at home in one's hands. This only can be done by incessant experimentation, but the efforts bring their own reward along with them. "Consider how they grow," are words with which we are all familiar, and they are of a very intensive description, and I submit that it is only

On the other hand, the strangest surprises sometimes happen, and these in the right way. *Ranunculus parnassifolius* was sent to me some time ago, and partly because I was busy at the time, and partly because I did not in the least know what to do with it as I had failed so often before, I planted it at haphazard, I might almost say, and never thought of seeing it again. But this time it is doing wonderfully well, and there must be some lesson to be learnt there, for its prosperity is against, and not because of, the instructions I had received with regard to it.

Last year I came across a delightful little alpine *Morisia hypogaea*—in the Jardin d'Acclimatation at Geneva. M. Correvon had got it from the mountains of Sardinia, and he was loud in its praise. Of course, such a gem could not be left unnoticed; but I remember thinking at the time that the chances were largely against its doing well under an English

ceased, as a rule, to give exceptional trouble, and the memory of their former behaviour is no small reason for welcoming them under better conditions.

Of course, as I have said before, all this is not meant to imply that the method I have described is the only one to be taken; nor do I, even for a moment, go so far as to assert, that it is the best way. I do not believe in any wonderful nostrum or specific for growing plants. There is no *elixir vite* for alpinists. I wish to limit myself strictly to an answer to the question put by the Editor to me, and to tell his readers what I have done, whether it be right, or whether it be wrong. A writer of a very interesting letter to the *Guardian*, a few weeks ago, under the initials, "M. H. M.," about the culture of alpinists, animadverted strongly on "bell-glasses, wooden or woven screens, labels, and other devices." He might almost have had my garden in his mind, and have



FIG. 71.—*TILIA PUNGENS*, VAR. *ARGENTEA*: A HARDY EVERGREEN; COLOUR, SILVERY BLUE. (SEE P. 517.)

in line with them to disbelieve in any wholesale proceedings, and to try to individualise our flowers. Sometimes it must be allowed that experiments fail altogether, and when one still believes that there should be success, it does not seem to be attainable. I have entirely failed to establish *Pulmonaria maritima* in my garden, though I have tried it over and over again, and yet it is a thing to be done, for I saw it myself in Mr. Wood's garden at Kirkstall, and he has no trouble about it. I never can induce *Pyxidanthera barbulata* to stay with me any length of time. I had it again this year, but it was all in vain, whereas a few years ago I came across it in Sir W. Bowman's garden in Surrey, and it was as happy as could be, and now it is very happy at Kew. I never once have been able to carry *Primula Reidi* through the winter on my rockery, though I have minutely followed the directions of those who seem to have done so, but I do not despair.

sky. This fear has, however, by no means been borne out by the result. With much of trepidation about it, I planted my little acquisition in the most suitable place I could find on my rockery, and I consulted for its wishes as best I could do it. Instead of failure, there has been the greatest success, and this experiment has, at any rate, answered in an unexpected degree.

But all this keeps up the excitement, if I may so say, and it is a legitimate and proper excitement, which the cultivation of alpinists affords. Moreover, there is the very highest reward in having plants on the rockery which are now quite docile and doing well, but which once were heartbreaking in the extreme. I would not on any account be without *Pulmonaria dahnrica* if I could help it. It now does quite well, but it used to fail utterly with me, and so it is also with very many other things. Many *Primulae*, once very bewildering, have now

meant to condemn it, and he recommended a very wholesale way of doing things, which he said was sufficient to ensure good effects. He may be perfectly right, from his own point of view, in everything he said, but I noticed one ominous sentence at the beginning of his communication, which ran thus: "If a plant dies, die it must." Those few words are sufficient to show that his point of view is not my point of view, and we aim at very different things. If "M. H. M.," whoever he may be, can throw light upon the cultivation of really difficult alpine plants, I should like to pull my rockery to pieces, from the top to the bottom, and to imitate him; but, at present, I do not see that it is so. It seems to me that they must be individualised in our hands, and no general treatment will do for them all. I agree with him when he says, "Nothing to my mind is uglier than a rockery;" but I have noticed that there is a sort of compensation for the

criticisms which mine has called lorth—and it is this which consoles me. At first, my friends used to exclaim, in wonderment, "What in the world are you doing?" Afterwards, the words ran thus—"It does not look quite so bad as it did last year;" in a little time they thought it seemed beginning to be pretty in some parts; then the perforated wall was actually admired, and I expect that in a couple of years from now, when the plants have grown properly over it, and have become more established, and they are clearly showing their distinctive habits of growth, not a few of my visitors will be so bold as to declare about the rockery itself and its multifarious occupants, "we admire it greatly;" in other words, the moral which I should deduce from my experience is this—take care of the plants; do the very best that can be done for them, and the rockery will take care of itself. *H. E., Ryde.*

THE APIARY.

GRANULATED HONEY.

Owing to the low temperature, honey granulated early this season. It is scarcely advisable to offer it for sale in this condition, and the best way to bring it back to its former consistency is to stand the bottles or vessel containing it in a slow oven after first taking off the covering. If there is any danger of the oven getting so hot as to bring the honey to boiling point, the door should be left open, as a higher temperature than about 190° would impair its flavour. The uninitiated generally seem to have the idea that granulated honey has been brought to that state by mixing flour with the genuine article instead of its being a perfectly natural process, and therefore a proof of pureness, and for this reason it is an excellent plan to affix an explanatory label to bottles intended for sale. Honey sometimes granulates in very coarse grains, and according to the authority of *Le Bulletin Apicole*, a French bee journal, if this honey is melted in a water-bath and then exposed to cold, it will afterwards granulate very fine. The same paper also states that honey can be made to granulate by churning it, as is done with cream to obtain butter, a few days after it has been extracted, and that this process causes a very fine grain.

In order to prevent sections granulating, they should be kept in a dry place at a temperature as near 60° as possible, and a cupboard next a fire-place would be very suitable for the purpose.

NEW APPLIANCES.

Two inventions likely to be heard of in the future were submitted for the inspection of bee-keepers present at the quarterly *conversazione* of the British Beekeeper's Association on October 21. One was an automatic smoker invented by M. Layens, a French beekeeper. It has a clockwork mechanism which has the effect of fanning the burning fuel, and the amount of smoke emitted can be regulated by means of a break. It can be set down without any fear of its being out at the moment required, as it holds enough fuel to last for a long time. It is made in Switzerland, but the price of 11s. 6d. is rather a drawback. The other invention is what may be termed an automatic swarm liver. This arrangement, on which is placed an empty skep, is put in front of a hive expected to swarm. The queen, not being able to get out, ascends into the skep, where the bees find her out, and cluster, and are then removed and hived in the ordinary way. It met with the general approval of the bee-keepers at the meeting, and the appliance-makers present signified their intention of making them for sale. *Expert.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

CATLEYA HOUSE.—Our house is very gay with *Catleyas*, gayer than was at one time possible, and *Cypripediums* may differ as to which of the autumn-

flowering ones is the true *C. labiata*. Many amateurs would undoubtedly be glad to have the pretty *Catleya Percivaliana* in flower at the end of the year; but unless the plants are very strong, and the growths have been matured at an early period, and few plants in this collection were sufficiently ripened to take in hand this year, no good results will follow. Suitable plants being selected, they should be placed in the lightest and warmest part of the house, and no water afforded till the first days in December, when the flower spikes will be easily seen making their way in the sheath. I would recommend those who may have a good supply of flower spikes on white *Lælia anceps* to put them in a position facing south, and may so train the spikes that the flowers can be seen in front or much of their beauty will be lost. Those who have but a small collection of these plants should buy *L. a. Schroderiana*, it being by far the best of the section, the grand *L. a. Dawsoni* not excepted. I am glad to hear from many sources that these varieties are flowering generally, but it seems to be an undoubted fact that *L. a. Sanderiana* is much freer to flower than the others. I have been asked if there is any difference in the treatment required to bloom the others; I can but tell those who may be in doubt that our plants bloom freely with the treatment which I have advised in these columns.

Catleya exoniensis will not be found in a flowering condition in many collections at this date, but where rich colour and good quality are required, I think nothing that I have yet seen will compare with it except a few varieties of *C. Hardyana*. Like many other things, *C. exoniensis* should be bought in flower, for though all are beautiful some are much finer than others. Day's variety is perhaps the best. Early in the year I recommended the breaking up of large old plants of *Cælogyne cristata*, and the placing of them into pans hanging to the rafters after the new pseudobulbs were completed, which may now be done. If a long season of bloom is looked for from *Cælogynes*, some of them may be placed in the intermediate-house, keeping them dry, or nearly so, to prevent the decay of the pseudobulbs. Others should be placed in the warmest division, but little water must be applied in any case, or the flower spikes now pushing up will turn black. The temperatures of the various houses may remain as advised in the previous calendar, and if any alteration be made, it should not be more than 2°, and that downwards. *A. G. Catt, Parkfield, Hallow.*

PLANTS AND THEIR CULTURE.

THE COOL CONSERVATORY.—There is no lack of flowering subjects wherewith to keep this structure gay for some time to come, as the *Primula sinensis* early sown are in full bloom, and will require care in applying water at the root; zonal *Pelargoniums*, *Eupatoriums* in variety, and *Bouvardias* which have been grown in pots all the season. Those *Eupatoriums* and *Bouvardias* which were lifted from beds where they had grown during the summer, have not been affected in the least by their removal to pots, and at the present time are flowering abundantly. *Heliotropes*, now very useful, are always prized on account of their fragrance, and these, with the late-flowering *Fuchsias*, early-flowering *Ericas*, Roman *Hyalanthus*, and *Chrysanthems*, will enable a display of bloom to be maintained till the end of the year. The watering of plants should at this season be performed in the early morning, so that floors, stages, and paths may become dry again before night-fall. Decayed leaves and blooms should be removed from the plants before they become unsightly, and the pots, tubs, and every part of the structure kept scrupulously clean. The temperature at night may range from 50° to 55°, and by day 10° higher, admitting air by day on every favourable occasion.

LACHENALIAS.—These plants should be kept well up to the roof-glass, to prevent drawing of leaves, affording them plenty of air when the weather is favourable for doing so. A cool pit will be found a very suitable place for *Lachenalias*, or, failing this, they may be grown on a shelf near the glass, in a cool greenhouse. Now that these plants are starting into growth, an occasional watering with clear manure will be very beneficial in improving the colour and size of the foliage and blooms.

EPACRISSES will require special attention when affording water; my practice is to allow the plants to get fairly dry before watering, and then sufficient is afforded to thoroughly moisten the ball. *Epacris* may be had in bloom throughout the winter and spring months, if a proper selection of varieties be

made. A cool pit, from which frost can be excluded, is a suitable place in which to grow them, and should any be required to bloom early, a few of the earlier-flowering varieties may be brought into the greenhouse. *Epacris* differs but little as a whole in the time in which they flower. The latest are *variabilis*, *pulchella*, *miniata* and *m. splendens*, *impressa*, and *Butterfly*.

ERICAS.—*Erica hyemalis*, *E. Willmoreana*, *E. melanthera*, *E. gracilis*, *E. vernalis*, &c., will now be found very useful for furnishing purposes, and, considering the ease with which they may be grown, should make them more popular than they are. *Ericas* may be bloomed in a low pit, such as would suit *Epacris*, admitting plenty of air at all times when the weather is not frosty. By this time the pots will be found well filled with roots, and care must be taken that the soil does not become dry, or the flowering shoots will become permanently injured, and perhaps the plant will not recover. *R. Milner, Penrice Castle, Swansea.*

THE FLOWER GARDEN.

NOISETTE ROSES.—The following are excellent garden varieties:—*Aimée Vibert*, pure white, small blooms in clusters; *Celine Forestier*, bright yellow, highly fragrant, and free growing, the opening buds useful for button-holes and bouquets; *Cloth of Gold*, pale yellow, with deeper centre, large and vigorous; *Madame Caroline Kuster*, beautiful orange-yellow, large and globular, and of vigorous growth; *Madame Massot*, white blooms in large clusters; *William Allen Richardson*, orange-yellow, flowers small, and best as buds. All the *Roses* in this and the Tea-scented sections are best when grown against a south or a west wall or fence, the shoots being laid in about 4 inches apart.

SINGLE ROSES.—Single *Roses* are decoratively valuable in the flower garden or shrubbery in masses or otherwise. The flowers of various shades of colour, ranging from the white Japanese *Rosa rugosa-alba* to that of the Copper-coloured Austrian Briar, are effective for making bouquets and filling vases. The following are distinct:—*R. berberifolia Hardii*, single yellow, with maroon; *Camellia japonica*, pure white flower, with yellowish stamens; Copper Austrian Briar, nankeen-yellow, very distinct; *Macartney simplex*, large single white, with shining evergreen leaves; *rugosa*, a very handsome species, which grows about 3 feet in height, and produces a quantity of carmine-crimson flowers, and bunches of large coral red berries, that remain on the plant all the winter if pheasants do not eat them; *rugosa alba* is a white variety of the last-named.

TEA-SCENTED ROSES.—The Teas named in this list have a fairly hardy constitution, and they are good bloomers; *Belle Lyonnaise*, deep canary-yellow, tinged with salmon, large and full—a seedling from *Gloire de Dijon*; *Catherine Mermet*, delicate flesh-coloured rose, large and full, fine form, and a fine Rose for training under glass-roof in a greenhouse; *Comtesse de Nadaillac*, apricot-yellow, fine globular shape and double, vigorous grower; *Devoniensis*, creamy-white, tinted rose, large; *Etoile de Lyon*, sulphur-yellow, with bright yellow centre, large and full; *Gloire de Dijon*, buff, orange centre, very large, fine strong grower, and a popular Rose; *Isabella Sprunt*, sulphur-yellow, free bloomer [Not good everywhere, Eo.]; *Letty Coles*, beautiful pink, of good form and free habit; *Madame Falcot*, rich orange-yellow, nice in bud or half-opened; *Maréchal Niel*, the blooms being large, full, globular in shape, and of deep yellow, and the shoots clothed with large shining leaves; *Niphotos*, pale lemon, often white, with fine Magnolia-like petals, blooms large and full, very nice in bud. The climbing variety of this Rose, introduced by Messrs. Keynes, Williams & Co., of Salisbury, is admirably adapted for growing under glass or against a warm aspect in southern shires. *Rose Marie Henriette* is a red *Gloire de Dijon*, and has the good properties of that favourite Rose.

AYRSHIRE ROSES.—These make compact bushes, and are well adapted for planting, either singly on lawns or in shrubbery borders. They bloom freely and the flowers are small, of white, rose, and other colours. The varieties I should recommend are:—*Alice Gray*, *Dundee Rambler* (*Myrrh-scented*), *Queen of the Belgians*, *Ruga*, very sweet; and *Splendens* (*Myrrh-scented*).

WINTERING PLANTS OF ECHEVERIA SECUNDA GLAUCA.—These succulent, useful, and very effective

carpet-bedding plants, where growing in high and dry situations, are quite hardy in the south, but in other parts, as well as in low, damp places in the south, it is necessary to take them up, remove the offsets, sort into different sizes, and then pack them close together in shallow boxes, working a little light soil about the rooted stems when doing so; water them, and place the boxes in an orchard-house, cold pit, or frame, where, with a slight covering in frosty weather, they will be quite safe. The old plants, if they are wanted, may be stored away in like manner, but cutting off an inch or two of the old stems. *H. W. Ward, Longford Castle, Salisbury.*

FRUITS UNDER GLASS.

MELONS.—A high temperature must be kept in the Melon pits to finish the fruits; and but little moisture afforded at the root, air being admitted by upper ventilators whenever it may safely be given, that is, in very mild weather. Disused Melon pits are usually occupied with plants in the winter, so that when a start is made in the new year with Melon growing, much cleaning is required to make them fit for the work. All painting, &c., should be finished at an early date, the young plants not liking air about them which is contaminated with the fumes of fresh paint; moreover, if dung and leaves are employed for affording heat, the paint soon gets discoloured if it be not thoroughly hardened by long exposure.

SOILS AND MANURES FOR FRUITS.—Now is the time to collect and stack soils for next season's use. I prefer the plan sanctioned by long usage, of placing layers of manure between the layers of turf, especially if the soil is infertile or sandy. As is well-known, the surface-soil of a sheep-run or deer pasture if loamy makes the best materials for Vines, Pines, Melons, &c.; but it is not always to be obtained by the gardener, and means must be taken to enrich the poorer materials which he has. Melons like a heavy soil; and Vines do best in fibrous loam neither too light nor too clayey.

SELECTING FRUIT TREES, POTTING AND PLANTING.—If any additions to the trees in the fruit-house are contemplated, no time should be lost in selecting the trees if they are to be bought in, as it is well known that the earlier purchasers have the finest choice, and as the nurserymen despatch their orders in rotation, those ordered early can be planted before the hard weather sets in, whereas late ordering means late planting with all its disadvantages. Vines for planting, when not home-grown, should be bought soon, choosing those with short-jointed, round, and hard canes, in preference to flat, long-jointed ones, full of pith. Peach and Nectarine trees are now ready, and should be planted, and if the treatment afforded is a proper one they will feel no check. If any house-repairs require to be done, the new trees may be placed in an upright position in the open air until these are finished. Trees for pot-culture may be potted-up without delay now that the leaves have fallen. Plunge the pots to the rim in a border in the open, and they will be ready to take indoors when wanted. For forcing in pots, I prefer the older varieties of Peach, notwithstanding some of the new ones are larger. A few trees in pots of Hale's Early, Alexander, and Waterloo, will afford nice dishes; and if space can be given, those fine early Nectarines, Lord Napier, Early Orange, and Advance, they should be grown. When planting in borders, be careful to place the roots not further from the surface than 4 to 8 inches, to cut off all injured roots, and to mulch with half-decayed manure. *G. Wythes, Syon House, Brentford.*

THE HARDY FRUIT GARDEN.

PLANTING FRUIT TREES.—The present being the best month for planting, shifting, and regulating the fruit garden, work of this kind should at once be pushed on with vigour. Belonging to this section is the making of new borders and stations for wall trees and espaliers, draining land, and getting everything in a forward state for orchard planting. Remove much of the soil if fruit trees have stood on the location previously, at least for several yards round the site of the future tree, and replace it with sweet loam. The soil should not be made rich with manure, and this should be laid in most cases as a mulch over the roots; only soils that are much impoverished need manure to be dug in.

PEACHES, NECTARINES, ETC.—These fruit trees may be lifted and replanted, as well as Pears and bush fruits, at once; but it is almost too early to expect

fruit trees from the nurseries. In lifting large trees open a trench 5 to 7 feet away from the stem, and 2 feet deep, and remove the soil from about the roots with a fork, undermining them, and shaking out the soil; and when a good handful of roots is got out, wrap them in wet mats, sacks, &c., and so proceed till the whole of the roots have been liberated. The tree should have previously been detached from the wall, and held against it by a few strong ties, the stations being prepared, and the hole made 12 inches wider than the stretch of the roots. Carefully spread these out in all directions, and at various depths, pruning the wounded tips, and filling in amongst them with the finer particles of the soil; tread all firmly, if the soil be not wet, then level, and make smooth. In replanting, the stem should not be lower in the soil than just to cover the point of junction of the main roots with it. Lightly secure all the larger branches to the wall or fence, and afford a mulch.

Bushes of Gooseberry, Currant, &c., may now be planted. In planting, care should be taken to keep early separated from late varieties, and not to mix up Currants with Gooseberries, the protection of the fruits from birds being rendered more convenient. *H. Markham, Mereworth Castle, Maidstone.*

THE KITCHEN GARDEN.

BROCCOLI.—The luxuriant growth made by Broccoli this season will make them an easy prey to frost; and when the latter threatens to be severe, protecting materials should be made use of, and the stems protected by it up to the leaves. In well-sheltered and naturally-warm gardens, a covering of bracken or litter put over the plants in frosty weather will suffice to protect from frost. Where the heads are already formed, as will be the case with the earliest varieties, the leaves should be tied together with matting over them, or the plants may be lifted and heeled-in in a cool shed or cellar. The practice of partially lifting Broccoli reduces the size of the heads, but as small as well as large heads are required this does not much matter. Autumn Giant Cauliflowers and the self-protecting Broccoli may be lifted when a fair-sized head is formed. This partial lifting of the early varieties is done by the workman commencing with the end plant in a row, and taking out a spadeful of earth on the north side, say at 6 inches from the stem, pressing the plant over towards that point with the foot, and then putting the spadeful of soil dug from behind the next one over the stem of the preceding one, and so on through the entire row. Later varieties are better if inclined to the south. The plants should lean over at an angle of 40°, or thereabouts, with the level of the land.

TURNIPS.—White Turnips should now be stored, after the tops are removed, in a cool cellar, or in small heaps in the open, and covered with soil. Chirk Castle Blackstone, is a variety that keeps plump and firm longer than any other variety I know of.

FORCING GROUND.—Where early-forced vegetables are required, forcing should begin early this month, and heaps of tree leaves and stable manure be thrown together for forming hotbeds, not much dung being employed for beds requiring a mild steady heat.

Seakale and Rhubarb, if forced by dung and leaves out-of-doors, should have these materials placed over the stools in a warm state about the third week of the month. Before placing the pots or boxes on the stools, remove all leaves from around the crowns, and put a small heap of fine coal ashes, mixed with a little soot and lime added, over each. Let all materials used for this purpose be well mixed together, and got into a uniformly warm condition before using. See that the lids of the forcing pits fit close, or the ammoniacal steam may rot the crowns; and do not forget to place trial sticks here and there in the beds, or to examine these once or twice a week. At this season the warmth may reach 85°.

CHICORY AND DANDELION will be useful for salads now that Lettuces are getting scarcer, and roots of these plants in sufficient numbers should be put into a Mushroom house or other suitable place to sprout. *C. J. Waite, Glenhurst, Essex.*

PLANT PORTRAITS.

ACROSTICUM TOSAENSE.—A new Japanese species, described and figured in the *Japanese Botanical Magazine*.

ANTHURIUM RIDOLFIANUM × **ALBUM**, *Bulletin della R. Soc. Toscana di Orticultura*, August.

APHELANDRA TETRAGONA var. **IMPERIALIS**. A stove shrub with stalked, ovate acuminate leaves, and dense spikes of red flowers. *Gartenflora*, t. 1354.

ASPER SHORTI, *Garden and Forest*, October 7.

BEGONIA MDLLE, **EMILIE RODIGAS**.—A tuberous variety with flat erect flowers, of a circular form and deep red colour, nearly 7 inches across. Raised by MM. BLANQUAERT and VERMEIREN, of Ghent. *Illustration Horticole*, t. 137.

BOLTONIA ASTEROIDES, *Meehan's Monthly*, September.

CALADIUM SACITTATUM.—A Brazilian importation of M. LINDEN'S, characterised by its very narrow sagittate leaves, deep green, with the central and two basal nerves marked out with a broad irregular stripe of red. *Illustration Horticole*, t. 138.

CORYANTHUS LEUCOCORYS, *Rolfe*.—A Peruvian species, of extraordinary size and appearance. *Lindenia*, t. 293.

DENDROBIUM HIBIBUM, *Orchidophile*, July.

DENDROBIUM SUPERBIENS, *Rehb. f.*—An Australian species, with rose-lilac flowers, and undulated segments. *Lindenia*, t. 294.

DIACRYLUM BICORNUTUM, *Lindenia*, t. 296.

DIANTHUS CALLIZONUS, *Garden*, October 10.

ECHINOCACTUS PECTINATUS ROBUSTUS, *Westnik, St. Petersburg*, October.

ERIOGONUM HAUSSKNECHTI—A curious little species from Mount Hood, in Washington Territory. The leaves are spatulate acute, and from the centre of the tuft upriser a stalk bearing a globular head of yellow flowers. *Gartenflora*, 1891, p. 493.

FICUS STIPULATA, *Revue Horticole*, October 1. Dimorphic form, with fruit as figured in the *Gardeners' Chronicle*.

HAMAMELIS JAPONICA, *Revue Horticole*, October 16.

IRIS ROBINSONIANA, *Garden*, October 3.

LILIA AMANDA, probably a natural hybrid, perhaps between *Cattleya intermedia* and *Lilia crista* or *L. lobata*. *Illustration Horticole*, t. 135.

LILIUM AURATUM CRUENTUM.—A magnificent variety in the way of *L. Parkmanni* as to colour, having on each petal a broad central band of deep crimson, and numerous spots of the same colour. Grown by M. Ed. Pynaert. *Revue de l'Horticulture Belge*.

LOBELIA SYRITICA, *Revue de l'Horticulture Belge*, October. Perennial, dwarf purple flowers.

LONICERA TATARICA, var. **GRANDIBRACTEATA**.—A form in which the usually minute bracts are replaced by two shortly-stalked leaves. *Gartenflora*, 1891, p. 457.

MASDEVALLIA CORISCEA, *Lindenia*, t. 295.

MORISIA HYPOGAEA, *Garden*, September 12.—Dwarf crucifer for rockery, with sinuate leaves and yellow flowers.

NOTHOLYNA OVALBATA, *Meehan's Monthly*, t. 1.

ODONTOGLOSSUM CRISPUM, var. **BLUTHIANA**.—A form in which all the segments are deeply flushed with lilac. *Gartenflora*, t. 1356.

ORPHANOGESIA GUALTHERIOIDES, *Gartenflora*, September 1, 1891, p. 469.

PEAR CHARLES COGNÉE, *Gartenflora*, t. 1357, October 15.

PEAR DOYENNE D'HIVER, *Westnik, St. Petersburg*, October.

PHILADELPHUS MICROPHYLLUS, *Garden*, September 26. An elegant hardy shrub, small in flower as well as in leaf.

PRIMULA IMPERIALIS, *Garden*, September 19.—A tall species with tints of yellow flowers. It has been long waited for, but scarcely justifies expectations.

PRIMULA POISSONI, *Garden*, October 17.

ROSE QUEEN NATALIE OF SERBIA, *Rosenzeitung*, n. 5, 1891.

QUERCUS PONTICA, *Gartenflora*, p. 512, October, 1891.

SIENANDRUM LINDENI, a stove plant with oblong dark green leaves with transverse yellow nerves. The plant is a Peruvian Acanthad, described by Mr. N. E. Brown in *Illustration Horticole*, t. 136.

STREPTOCARPUS ELWENSIS ×, *Illustration Horticole*, August 15.

STREPTOCARPUS WATSONI ×, *Illustration Horticole*, August 15.

TILLANDSIA BIEROGYPHICA.—Leaves oblong, strap-shaped, entire, with irregular transverse bars, flowers yellow in a panicle. *Revue Horticole*, September 1.

TILLIUM GRANDIFLORUM, *Garden*, September 5.

TULIPA KOLPAKOWSKYANA, and **T. LEICHTLINII**, *Garden*, August 22.

VIBURNUM MOLLE, *Moller's Lantsch Gartner-Zeitung*, Aug. 10.

EDITORIAL NOTICES.

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

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

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

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Nov. 10. Royal Horticultural Society: all Committees meet.

SHOWS

MONDAY, Nov. 9.—St. Neots.

TUESDAY, Nov. 10. National Chrysanthemum Society, Royal Aquarium, Westminster (three days). Kingston-on-Thames Horticultural Society (two days). East Grinstead. Leeds Paxton Society, Horsham. South London.

WEDNESDAY, Nov. 11. Croydon (two days). Birmingham. Northampton. Torquay.

THURSDAY, Nov. 12. Bourne mouth. Bath (two days). Tiverton. Cirencester (two days). Reading. Swansea.

FRIDAY, Nov. 13. Eastbourne (two days). Chichester (two days). Oxford, Durdley (two days). Chelmsford and Essex. Teddington, Wimbledon.

FRIDAY, Nov. 13. Devon and Exeter. Hitchin and District, Cheshunt.

SALES.

MONDAY, Nov. 9.—Dutch Bulbs at Stevens' Rooms

TUESDAY, Nov. 10. Dutch Bulbs at Stevens' Rooms. Dutch Bulbs and Libum anatum at Protheroe & Morris' Rooms.

WEDNESDAY, Nov. 11. Dutch Bulbs, at Stevens' Rooms. Clearance of Greenhouse Plants at Dorset Cottage, Fulham, by Protheroe & Morris.

THURSDAY, Nov. 12. Dutch Bulbs, at Protheroe & Morris' Rooms. Importation of *Cattleya labiata*, &c., at Stevens' Rooms.

FRIDAY, Nov. 13. Established and Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Nov. 14. Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—43°·1.

At a meeting held at the Cannon Street Hotel, on Friday last, Sir JAMES WHITEHEAD in the chair, it was determined to hold a great Fruit Show to last for some ten days, in London next autumn. The chairman began by inviting the co-opera-

tion of all horticultural societies, indicated a site on the Thames Embankment as most suitable for the purpose, and as one which he thought could be obtained, at no cost, from the corporation, and further showed his sincerity in the matter by offering £500 towards a Guarantee Fund. This was afterwards augmented by Mr. SMEE and by others. The matter is, therefore, started in a business-like manner. A proposal to exclude foreign fruit, and to make the exhibition exclusively national, was very generally condemned as unwise. The only source of friction, so far as we can see, is in the question of co-operation. Is this to be as the great International of 1866 was, a private enterprise? Is the Royal Horticultural Society to repeat the error it then made, or is it willing to take the lead, so far as technical matters are concerned, leaving the financial business to be undertaken by the City magnates, or by whomsoever may have the power of the purse. It is obvious, that in spite of the great revival in the affairs of the Royal Horticultural Society, it has not the command of funds, but in the matter of brains, experience and specially in pure disinterestedness, it has greatly the advantage over any private enterprise.

History, past traditions, and, we are sorry to say loyalty, do not go for much in these times; we must look to the present. Consider what the Society has done of late years—what it is doing now! Look at its fruit garden, its Fruit Committee, and its fruit congresses! What has the Fruiterers' Company—till lately an obscure, if not effete body—done to command the sympathies of the horticulturists? Absolutely nothing, but get up a successful fruit show in the Guildhall last year. And yet we are asked to allow this body virtually to take the lead in a great national enterprise of this kind before, if we are correctly informed, the Royal Horticultural Society has even informally been consulted on the matter.

Ultimately, it was resolved, that a provisional committee be appointed to formulate a scheme, and to report thereon to a future meeting. And, it was further resolved, that the Royal Horticultural Society, the Fruiterers' Company, the Royal Agricultural Society, the British Fruit Growers' Association, the Gardeners' Company, and other horticultural societies, should be asked to co-operate in the movement. So far well; but the resolution went on to say, "One member from each of the above-mentioned societies, and one member of the corporation, and six other gentlemen, will constitute the provisional committee." Of these six, so far as we understood, five are to be nominated by the Chairman, Sir JAMES WHITEHEAD, the Master of the Fruiterers' Company. We sincerely trust we are mistaken in this, as we can hardly think the horticulturists desire to efface themselves in such a fashion even in favour of so courteous and able a chairman as Sir JAMES WHITEHEAD. But, after all, these are matters of detail. The great matter is, shall we have such a show or shall we not? The feeling of the meeting, as of that of the horticultural body at large, was, and unmistakeably is, in the affirmative. If the Royal Horticultural Society cannot or will not take the lead in the matter, then, as Sir JAMES WHITEHEAD said, "we shall be constrained to go on."

ARISTOLOCHIA GIGAS.—The large *Aristolochia* exhibited from Kew at a recent meeting of the Royal Horticultural Society, under the name of *Aristolochia grandiflora*, is one of the most remarkable plants in the Royal Gardens. It was quite new to the Society, though another species

of *Aristolochia* bearing the same name was not unknown to some of the members. The question of the accuracy of the name having arisen, it was considered desirable to investigate the matter, with the result that great confusion was found to exist in the synonymy of this and some of the allied species. The history of the plant is briefly as follows:—It was sent to the Horticultural Society from Guatemala by HARTWEG, about the year 1840, and in 1842 Dr. LINDLEY figured it in the *Botanical Register* (plate 60), under the name of *A. gigas*. In 1848 the same species flowered at Kew, where it was believed to have been raised from seeds sent from Jamaica by PURDIE, and Sir WILLIAM HOOKER figured it in the *Botanical Magazine* (plates 4368 and 4369). On the strength of this record, it would appear, HOOKER reduced it to *Aristolochia grandiflora* of SWARTZ, a common species in Jamaica. He also referred *A. cordiflora*, MUTIS, a native of New Grenada, to the same species, and he further mentions that his friend, Mr. MIERS, recognised it as a Brazilian species. DUCHARTRE (DC, *Prodr.*, xvi, i, p. 472) followed HOOKER, with the exception that he excluded *A. cordiflora*, which he described as having a tailless perianth. An examination of the West Indian *A. grandiflora* convinces me that it is a distinct species, from which, however, *A. tetens*, LINDLEY (*Bot. Reg.*, pl. 1824), does not materially differ. The two species, *grandiflora* and *gigas*, are very similar in foliage, but the flowers of the former are not more than a third the size of the latter, and quite different in shape, as is evident from the figures cited. The synonymy of the two species may be summarised thus:—1, *Aristolochia gigas*, LINDLEY, in *Bot. Reg.*, 1842, t. 60; *A. grandiflora*, HOOKER, in *Bot. Mag.*, t. 4368, 4369 (excluding synonyms), repeated in *Flore des Serres*, pl. 351 to 354; *Garden and Forest*, iii, p. 596 and 598, figs. 79 and 80, not *A. grandiflora*, SWARTZ. 2, *Aristolochia grandiflora*, SWARTZ, *Flora Indue Occidentalis*, iii, p. 1566; *Tussie Flore des Antilles*, i, p. 181 to 190, t. 27. GRISEBACH, *Flora of the British West Indian Islands*, p. 299, excl. syn. *A. gigas*, LINDL.; *A. tetens*, LINDLEY, in *Bot. Reg.*, t. 1824. DUCHARTRE (DC, *Prodr.*, xv, i, p. 475), treats *A. gigantea*, HOOKER, in *Bot. Mag.*, t. 4221 (not of MARTIUS, *Nov. Gen. et Sp.*, i, t. 48), as a variety of *A. grandiflora*, but I think it is a distinct species, though I am unable to clear up this point at present, as I can find no specimen of it in the Kew Herbarium. There are specimens in the Kew Herbarium of another allied *Aristolochia* "from a garden at Bonchurch, Isle of Wight," received through Messrs. VEITCH in 1837, and then named *A. grandiflora*, but the flowers differ from those of this species and from those of *A. gigas*. The dimensions of the Kew flower of *A. gigas*, exhibited at the Horticultural Society's meeting, were, roughly, 18 inches wide by 22 inches long, with a tail 34 inches long (fig. 75). In the case cited in the *Garden and Forest*, the dimensions of a flower are given as 12 by 18 inches, with a tail 42 inches long, though the plant now flowering at Kew was originally a cutting from that described and figured in *Garden and Forest*. *A. gigas* grows very rapidly, and flowers freely, the plant in the Victoria-house at Kew having borne over thirty flower-buds about seven weeks ago, when the first flower opened. Mr. WATSON informs me that *A. gigantea* of MUTIS is in cultivation in several gardens in England, but has not yet flowered. There are specimens of *A. gigas* in the Kew Herbarium from Guatemala, collected by HARTWEG, SKINNER, and SALVIN. *W. Botting Hemsley.*

THE ROYAL HORTICULTURAL SOCIETY.—The various committees will meet as usual on Tuesday, November 10, in the Drill Hall, Westminster. It will probably interest growers of Chrysanthemums to know that large money prizes and silver-gilt medals will be awarded to the most successful competitors, according to the society's schedule, copies of which may be obtained from the secretary, 117, Victoria Street, or from the superintendent, Chiswick Gardens, to whom all entries should be sent.

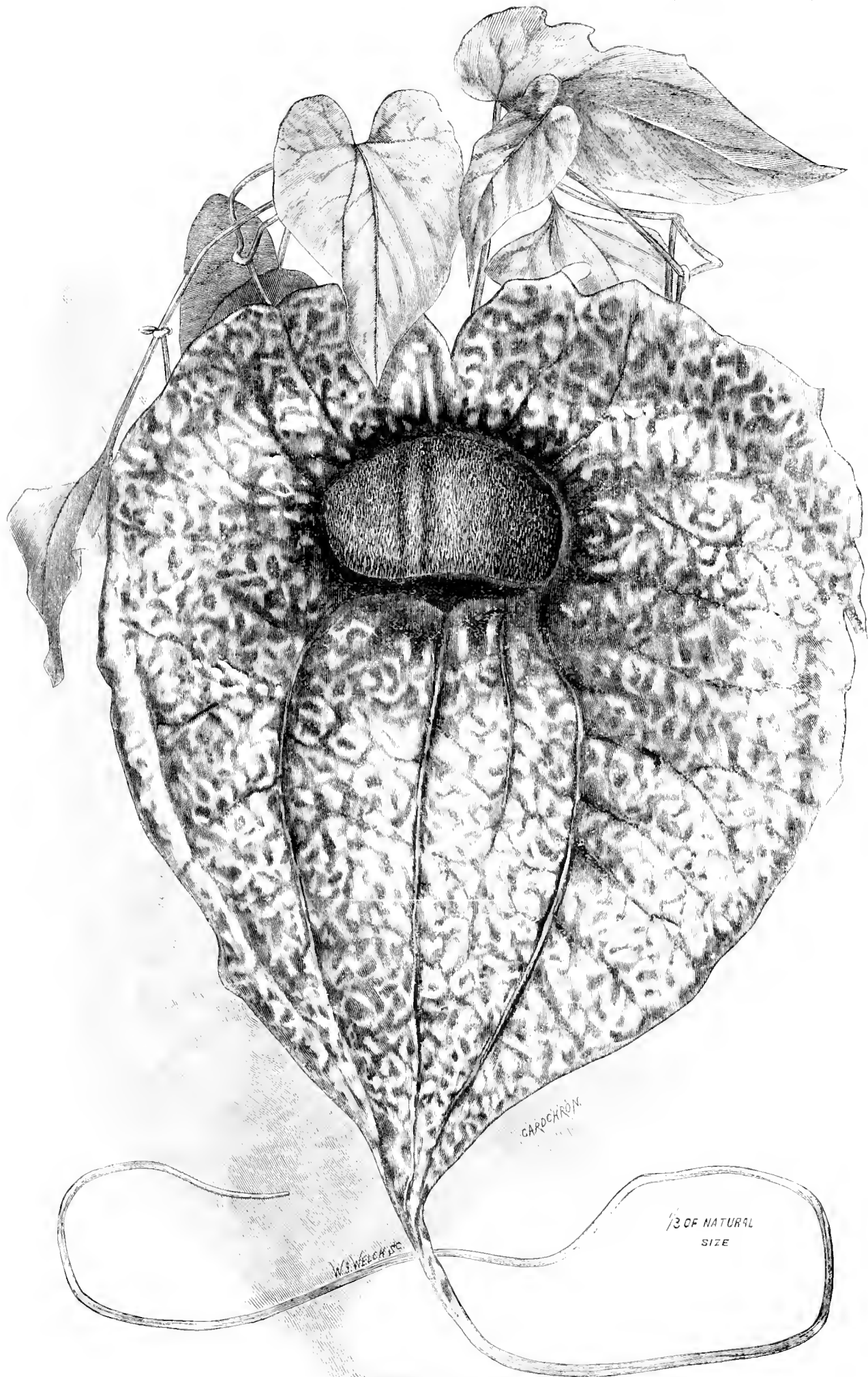


FIG. 75.—ARISTOLOCHIA GIGAS: CREAM-COLOURED, FLUSHED WITH ROSE; VEINS, PURPLE; THROAT, DEEP VELVETY BLACK. REDUCED BY TWO-THIRDS. (SEE P. 552.)

EDINBURGH CHRYSANTHEMUM SHOW.—The entries for the above, we are informed by Mr. R. LAIRD, the Secretary of the Society, will close on November 13.

NATIONAL CHRYSANTHEMUM SOCIETY'S CATALOGUE.—As several inquiries have recently been addressed to me, says Mr. C. HARMAN PAYNE, concerning a re-issue of our official catalogue, may I be allowed to say, through the medium of your paper, that it is not intended to publish a new edition this year, nor have the committee proposed to issue an appendix or supplement to the existing centenary edition, which, having been brought close up to date, will answer all practical purposes for the ensuing season.

THE LATE FRUIT SHOW AT EDINBURGH.—Mr. W. K. MUNRO, 16, Pitt Street, Edinburgh, has forwarded us a copy of a photograph representing the judges and members of the committee at the late great International Fruit Show in Edinburgh. Many will be glad to possess so interesting a memorial of so important a meeting.

THE ROYAL LANDSCAPE GARDENER.—The King of the BELGIANS has, as previously mentioned, been exercising his well-known love for horticulture and landscape gardening in the palace and grounds of Ciergnon. For ten years His Majesty has been planning and personally superintending alterations, which, until completed, he kept quite secret, wishing to give the Queen a pleasant surprise. Ciergnon Castle is erected on the site of a small hunting-lodge, used by the late LEOPOLD I., and now includes a fine and well-stocked conservatory, wherein, on pressing a button, a little electric light gleams out at the base of every plant. The grounds around the palace extend for 8 miles, sloping downwards from the chief entrance for some distance, and then rising sharply to a Pine-clad plateau. Although the river Lesse runs by the palace, the plantations in the park formerly suffered much from drought. To remedy this, the same engine which is employed for the electric light now pumps up the river-water into a large concreted reservoir. The tank is made ornamental as well as useful; little cascades, torrents, and streams have been arranged, and the ground around them so planted as to look as natural as possible; rustic bridges cross the water at convenient places, and many pretty vistas and peeps at the adjoining country have been opened out. All the alterations made have much enhanced the natural beauties of this favoured nook near the woods of the Ardennes, and say much for His Majesty's good taste and skill in landscape gardening.

ROYAL NETHERLANDS HORTICULTURAL SOCIETY.—The second National Chrysanthemum Exhibition will be held at Amsterdam (Damrak, near the Exchange) from November 12 to 16. The number of entries is 109, with twenty-six different competitions. It is said that the blooms and plants will be better than last year. At the same time there will be a Chrysanthemum *plébiscite*. The Editor of *Sempervirens* puts the following questions:—1. Name ten elegant and curious-shaped Chrysanthemums; 2. Name six Chrysanthemums which produce large flowers; 3. Name six Chrysanthemums of compact-growing habit and free-flowering; 4. Name six Chrysanthemums, high-growing varieties, and free-flowering; 5. Which are the six best Pompon-flowered Chrysanthemums; 6. Which are the four best Anemone-flowered Chrysanthemums; 7. (Specially interesting for nurserymen.) Name six of the best white Chrysanthemums for cutting purposes; 8. Name the six best yellow for the same purpose; 9. Name ten Chrysanthemums with different colours for cutting purposes. Printed forms may be had either at the show, or of the Editor of *Sempervirens* at Amsterdam. The result of the above *plébiscite* will probably be published in the *Gardeners' Chronicle*, J. K. Budd, Haarlem.

LINDEN'S SALE AT PROTHEROE AND MORRIS' ROOMS.—The expectation of seeing over 200 specimens of *Cattleya labiata vera* in flower brought together such a company that there was scarcely standing room. The plants made a grand show, and prices may be said to have ruled high. The plants of a supposed new form of *C. labiata*, named *majestica* looked good, and the best pieces fetched from five to eleven guineas. *Dendrobium leucolophotum* averaged three guineas, and the unflowered plants of *Cattleya labiata autumnalis* realized about the prices they have hitherto fetched, viz., for anything like quality, from thirty shillings to two guineas. Then came the plants of that variety in flower, and some of the earlier lots fetched twenty-eight, twenty-four, thirteen, and ten guineas, toning down towards the end to from three to five guineas, and even less where the varieties were not good. The best lots of the *Dendrobiums* from New Guinea brought two to six guineas, and a plant each of *Cypripedium Arthuri-anum* and *C. cœnanthum superbum* eight and a half guineas each. The *Mesospidium volcanicum grandiflorum* and the pretty *Cochlidoda Noezliana* also sold well, and the total amount came to something like £700.

A GIGANTIC CATTLEYA.—One of the largest *Cattleyas* ever imported is now in the nurseries of Messrs. SEEGER & TROPP, 112, Lordship Lane, East Dulwich, and, setting aside the value of such an enormous mass, the cost of its removal from the virgin forests of Venezuela, and carriage to its present home, must have taken a goodly sum of money. The plant in question is on the native wood as collected. It is in grand health, and of such proportions that the counting of its bulbs would be next to an impossibility. It is a *Cattleya Mossiæ*, the whole being made up of three varieties growing together, viz., the typical form, another larger and brighter coloured variety, and a third portion consisting of the valuable white petalled kind known as *C. Reineckiana*. The plant bids fair to flower well, and when in bloom it will be a grand sight.

VANDAS AT EAST DULWICH.—Vandas, and especially the forms of *V. suavis* and *V. tricolor*, are so often badly grown in gardens, that we are always glad to note their successful culture, as it proves that the plants are not difficult to grow, if but properly treated. In Messrs. SEEGER & TROPP'S Orchid Nursery, 112, Lordship Lane, E. Dulwich, there is a grand bank of these plants, comprising most of the best and rarest species and varieties. The secret here, as in other places where we have seen Vandas good, seems to be to keep them in a fairly low temperature, and in a house which is light, but not too bright with sunlight in summer; while the atmosphere in the house is carefully ventilated, to keep it as pure as possible at all seasons. The general collection of Orchids here improves steadily in good looks, and many very rare species and varieties are to be found in it, such as *Laelia Perrinii alba*, *Sobralia macrantha alba*, &c.

NURSERYMEN AND THE PARCEL POST.—In view of the increase at this season of post parcels of young plants, shrubs, and trees, a notice has been issued from the General Post Office suggesting the following methods of packing, the greatest length allowed being 3½ feet, or a length and girth combined of 6 feet:—Shrubs and dwarf trees should have the roots encased in bass matting, and the branches and twigs tied together with bass or string. Dwarf standard Rose trees should have bands of hay or of bass matting wound round their entire length. Wooden boxes should be used for flowers and soft or tender plants. The address label attached to such parcels should bear the words, "By parcel post, plants perishable." The rate of postage is 3d. for the first pound, and 1½d. per pound afterwards, up to the maximum of 11 lb.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—At a special meeting held by this society, a very interesting

and instructive paper was read by Mr. G. PAUL, of the Old Nurseries, Cheshunt, on "Fruit Culture on the West Slopes of the Lea Valley." Mr. PAUL'S remarks were illustrated by a very fine collection of fruit. The paper, which dealt particularly with the fruit-growing capabilities of the county of Herts, was greatly appreciated by the large number of the members and their friends who were present.

MR. OWEN THOMAS, on leaving Chatsworth, was the recipient of a very handsome plated ink-stand and pair of candlesticks from the gardeners employed under him, 60 in number, during seven and a half years.

THE GARDENERS' ORPHAN FUND.—The first meeting of the committee after the recess took place at the Hotel Windsor on Friday, October 30. Mr. JOHN LAING presiding in the absence of Mr. WILLIAM MARSHALL, the chairman. The Hon. Secretary, Mr. A. F. BARRON, announced the receipt of two donations of £5 each; and the following special contributions were also announced, viz., £2 2s. from the Bristol Chrysanthemum Society; £5 7s. 6d. collected by Mr. Wadde, the Gardens, Birdsall, York; and £11 7s. 2d. from various money-boxes. Mr. BARRON also announced that the total net proceeds of the late general collection was £250 2s. 1d. Mr. BARRON made the announcement that an influential district committee had been formed in Manchester, consisting of Mr. Bruce Findlay, Mr. R. Tait, of Messrs. Dickson, Brown & Tait; Mr. T. Robinson, of Messrs. Dickson & Robinson; Mr. W. Plants, Mr. E. Griffith Hughes, Mr. W. Elkin, and Mr. W. B. Upjohn, Worsley Hall Gardens, who will act as hon. secretary. Mr. Upjohn, by virtue of his office, becomes a member of the executive committee, and power was given to him, in the event of his being unable to attend the meetings of the executive committee in London, to delegate any other member of the Manchester committee to take his place. It was unanimously resolved to invite Alderman Sir JAMES WHITEHEAD, Bart., to preside on the occasion of the Annual Dinner of the Fund in February next.

FRUIT-GROWING AND MARKET-GARDENING AS IRISH INDUSTRIES.—Mr. W. H. (BULLOCK) HALL has printed, in the form of a pamphlet, the record of a recent trip to Ireland with Mr. RIVERS. It is well known that, through the liberality of Mr. HALL, suitable trees have been distributed in various districts of Ireland, especially in South Cork. The object of the visit was to see what progress had been made. We shall, on a future occasion, revert to the subject; but it may suffice to say now that, so far, the prospects are encouraging, and Mr. HALL'S wise beneficence is, in more senses than one, likely to be fruitful.

DAFFODILS.—Messrs. BARR & SON propose to offer for competition at the Royal Horticultural Society, medals of silver and bronze for Narcissi of all kinds, including Daffodils. The medals will be awarded at six meetings, from February to May. The details will be given subsequently. Suffice it to say, that they include prizes for forced Daffodils, new Daffodils, seedling Daffodils, and collections.

JAPANESE BOOKS.—Dr. RYŪKICHI YATANE, of Tokio, has issued the first part of a work, entitled, *Iconographia Floræ Japonicæ*, descriptions with figures of plants indigenous to Japan. It is published by Z. P. MARUYA & Co., of Tokio. Dr. YATANE, in his prefatory note, says that he intends to give figures and descriptions of all the plants known to be indigenous to Japan. The figures, moreover, will serve as illustrations to a compendious flora of Japan, by the same author. The undertaking is sufficiently formidable, but it has this great advantage, that should Dr. YATANE unfortunately be unable to carry out so vast a programme in its entirety, yet every item concluded has a distinct and independent value. The part before us contains twenty well-executed lithographic plates; the drawing is generally accurate, and the attention given to little points of detail connected with the

"habit" and mode of growth show that the artist has a well-trained eye. Among the plates is one of *Chrysanthemum sinense*, Sabine, var. *satsumensis*, Yatabe, a form growing wild in the province of Satsuma. [=C. *morifolium* var. *Hemslley* in *Gardeners' Chronicle*, November 23, 1889.] The text is in Japanese and English. *Phaius flavus* is also figured.—*Illustrations of the Flora of Japan* is a monthly publication edited by TOMITARŌ MAKINO, and published by KEIGYŌSHA, of Tokio. The illustrations are of a similar character to those mentioned in the preceding work, and are very creditable alike to the artist and the botanist. Tah. 48 represents another form of the wild *Chrysanthemum*, C. *sinense*, var. A. *sinense*, found abundantly at the foot of the mountains in the province of Tosa, Spikoku. [See Hemslley, *loc. cit.*] We may suggest in this case that the Latin names be placed on the plates, as well as the Japanese equivalents. Many native Orchids are figured, as *Sarcanthus scolopendrifolius*, *Oberonia japonica*, *Cirropetalum japonicum*, *Stigmatodactylus sikonianns*, &c.

THE ORIGINAL CHINESE PRIMROSE.—On several occasions we have adverted to the discovery of the original wild form in the mountains of Central China by Dr. HENRY and others. See *Gardeners' Chronicle*, November 23, 1889. We have also noted its introduction into this country where we first saw it in the gardens at Apley Towers, and subsequently with Messrs. SUTTON. Now we have received from Mr. EDMUND HYDE a flowering specimen. The calyx is tubular, cylindrical, scarcely at all distended, the sepals oblong, quite entire, free for about half their length. The corolla is 1½ inch (30 mm.) across, pale lilac, except at the throat, which is pale cream-coloured. The petals are obovate, and the anthers included. From such modest beginnings came the Chinese Primrose of our gardens.

SYRINGAS FOR FORCING.—The question has been asked in MÖLLER'S *Gärtner Zeitung*, which Lilac has the most enduring blooms when forced, S. *Marlyensis* or S. Charles X.? S. *Marlyensis* was said by importers of Paris blooms to be the best; but it is believed that there is no difference between them in that respect, and that the Paris gardeners employ S. *Marlyensis* for the excellent reasons that it will more readily force at an early period of the winter than others; and because the flower-spike is relatively small; and therefore well adapted for the florists' art; and moreover, when grown in darkness, the flowers are of a beautiful white or tender rose-colour. S. Charles X. is better adapted for late forcing, but its flower-spike is usually too large and full for bouquet work. It should be known that Lilac, of whatever variety, if it be forced early, or in great warmth, is never very enduring when cut; but from January onwards, if the flower-spikes are cut with a long piece of the matured shoot attached, and placed in a cool place, they would last at least from ten to fourteen days.

RUSSIAN APRICOTS.—However desirable the cultivation of the Apricot in the Orchard in this country appears to be, its success has hitherto been unattainable with such varieties as we possess. In the organ of the Royal and Imperial Horticultural Society of Steirmark (Styria), we read of two varieties of the Apricot which are cultivated in Central Russia, and are able to resist the intense cold of that region unprotected in any way. These are AUSTRIAN'S Large White and Small Late. As delineated, these fruits measure respectively, 1½ inch and 1¼ inch in their greatest diameter. They come almost true from seed, and are very prolific. These Apricots can be obtained from the National Arboretum, Zooschen, Merseburg, of which Dr. DIECK is the Director.

BOMBAY FERNERIES.—Mr. G. H. CARSTENSEN, Superintendent of the Municipal Gardens, Bombay, has published a paper on this subject read by him before the Bombay Natural History Society, and which contains interesting details as to the construction and maintenance of a fernery, and also some remarks on the conditions under which the

plants in question grow naturally in that part of India.

TASSO'S TREE, the famous Oak under which the great poet is supposed to have spent the greater part of the day during the last year of his life, when he had retired to the Convent of Sant Onofrio, was blown down during a violent gale recently. The tree, which all visitors to Rome used to visit, was kept standing by supports of masonry on all sides; but at last, notwithstanding all the care taken to preserve it, it has succumbed to old age. The trunk will, however, be kept as a relic in the Convent of Sant Onofrio.

DECAYED ELMS.—The stately Elms that line the terrace at Richmond are all internally rotten, and in a dangerous condition. Some must come down at once, and the rest, it is feared, cannot last much longer.

THE CONSTITUENTS OF THE FRUIT OF ILLICIUM ANISATUM.—What a wonderful lot of things a simple little seed like that of the Star anise, for instance, may contain. A German chemist, F. OSWALD, has recently found the following list of substances in this plant, to say nothing of other substances so well-known as to be unworthy of special mention:—Anchoil, safrole, quinol, ethyl ether, anisic acid, various terpenes, veratric acid, piperonal, cholesterol, protocatechaic acid, shikimic acid, phosphates, fatty and other glycerides. Sugar is not present in the fruit in any considerable quantity, hence its sweet taste is to be ascribed essentially to the presence of an ethereal oil. OSWALD'S paper is published in the *Archiv der Pharmacie*, vol. xxix., series 2, where it occupies some twenty pages.

TRAINS STOPPED BY INSECTS.—We have hitherto been rather inclined to regard the newspaper accounts of trains stopped by caterpillars as exaggerations, but investigation has proved that these tales were founded on fact. Near Luberton, North Carolina, the drainage and consequent improvement of once-swampy land is the cause assigned for a sudden and enormous increase in the number of Tent caterpillars (*Clisiocampa disstria*), which not only stripped the leaves from Oaks and Gums for 8 miles round, but collected on the railway line in such quantities as completely to stop a train. The wheels of the carriages went round as if the rails were greased, and the track was completely hidden by millions of caterpillars, of which so many were crushed, that the stench arising from them was described as unendurable. On another occasion, near Brighton Corners, New York, a similar stoppage to traffic was caused by enormous quantities of some water-beetle, thought to be *Belosstema*, *Dytiscus*, or *Hydrophilus*, and attracted to the spot by electric light. The line for a length of some 60 feet was covered with these creatures; the train could pass over them for but a little distance, yet the wheels crushed so many, as to cause a "number of loud, cracking noises like toy torpedos." Almost yearly, trains are stopped in various regions by insect pests, the army-worm, cotton-worm, tent-caterpillar, and certain species of locusts, being the usual offenders. The plants most frequently infested and destroyed are said to include species of the following genera:—*Quercus*, *Juglans*, *Fraxinus*, *Tilia*, *Rosa*, *Carya*, *Prunus*, *Acer*, *Cratægus*, *Fagus*, *Liquidambar*, and *Nyssa*. According to the report of the United States Department of Agriculture (*Insect Life*), the Gums and Oaks are the greatest sufferers.

SERVICE AND MEDLAR.—When dining with a friend in Worcester College, a trifling incident brought out one of his (Archbishop WHATELY'S) happiest *bon mots*. There were some Medlars on the table, and his host regretted that he had in vain tried to procure also some Services (*Pyrus domestica*), a fruit which grows wild in Kent and Sussex, and is there called "Checquers." One of the company asked the difference between a Service and a Medlar, to which Mr. WHATELY replied, "The same

kind of difference as that between "officium" and "officiosus."

LEGISLATION AGAINST INSECT PESTS.—In California the "horticultural interest of the State" is protected by an Act which requires that the Board of Horticultural Commissioners shall examine any fruit trees, vinerias, and nurseries which are supposed to be infected with insect pests. The Commissioners are further authorised to enforce the destruction of any injurious insects, their eggs, and larvæ, which they may find, as these are considered to be a public nuisance. Isolated cases of disease, if not summarily treated, frequently spread to all neighbouring plantations, when complete eradication becomes a difficult and often ruinous task.

"POPULAR GARDENING" AND THE "AMERICAN GARDEN."—An amalgamation between these journals is announced. In consequence, Professor BAILEY, the whilom editor of the *American Garden*, resigns his position, a distinct loss to progressive horticulture. The combined journals will henceforth be edited by Mr. ELIAS LONO, whose experimental garden enables him to speak with unusual authority. The publishing office will for the future be at Times Building, New York. We heartily wish all success to our American contemporary.

GISHURSTINE.—With returning winter, our welcome friend Gishurstine appears, to appease the gardener's dread of his peculiar maladies, rheumatism and the colds which follow on getting wet feet. We may safely say, that provided the boots or shoes are sound, a coating or two of the Gishurstine will render them impervious to damp.

COMMEMORATION TREES.—On Monday morning, November 2, their Royal Highnesses the Duke and Duchess of CONNAUGHT, on the termination of their visit to the Earl and Countess of RADNOR, at Longford Castle, near Salisbury, in the presence of other distinguished guests staying at the Castle, planted two trees of Cedar of Lebanon, on either side of an old Cedar which stands opposite the west front of the Castle, to commemorate their visit thereto.

NEW PUBLICATIONS.—*Garden-craft, Old and New*. By the late JOHN D. SEDDING. (KEGAN PAUL, TRENCH, TRUBNER & Co.) A notice will be given subsequently.

THE BULB GARDEN.

NERINE FOTHERGILLI MAJOR (CURVIFOLIA).

Of Cape bulbs none is more deserving of cultivation than the above, and it is surprising that the plant is seldom met with in private gardens, particularly where cool conservatories have to be gay, or choice flowers for cutting are in demand at this season of the year. Whatever may be the reason that this plant is not more grown, it cannot be that there are unsurmountable difficulties in its culture; for this is easy enough, provided suitable accommodation is at command, and a few simple points are attended to, and in the neglect of this lies the cause of some failures, *i.e.*, it sometimes happens that the non-success is due to codding the plant. The following cultural memoranda comprise the whole of our practice. We grow it chiefly for cutting, and during its season of flowering, when growth commences, it is kept on a stage near the glass, in a cool airy house; but when the scapes of flowers are removed, it is placed in a cool position upon shelves, close to the glass, and unshaded, so that they may get all the sunshine. Here they pass the growing season, with a free circulation of air, except when the weather is ungenial, and fire-heat only is afforded to exclude frost. Like some other Cape bulbs, the Nerine is impatient of a close wurm house, which causes its foliage to elongate, and the plant to get out of health. When the foliage dies away, and until flower-spikes appear, a place is found for the plants

on a bed of ashes in a cool dry but airy frame. During the resting period, from May until August, no water is afforded, the soil being allowed to get as dry as possible; and this condition, together with free exposure to air and sunshine, matures the bulbs and is most favourable to profuse flowering.

The ordinary course of watering the plants is followed whilst they are growing, and we find that well-rooted plants are benefited by moderate supplies of liquid manure. Frequent potting and large shifts do not suit Nerines. Indeed, this one grows best, and blossoms more freely, when it is pot-bound, and for this reason we are careful not to repot them oftener than once in two or three years, according to the condition of the plants; but top-dress when growth commences those which will not be repotted, the soil used being turfy loam, with a little sand mixed with it, but a very heavy loam should have a small portion of peat or leaf-soil added. *Thomas Coomber.*

THE CROWN IMPERIAL.

The late summer has not suited these plants, and bloom has been sparse and unsatisfactory in many places in consequence. In shallow soils and those naturally poor, the stations for this strong-feeding bulb should be dug out 2 or 3 feet wide and deep, and a good proportion of rich loam and coarse sand mixed with the staple. Above all, see that there is no stagnant water in the land.

The bulbs, either from the bulb dealer, or those which were formerly on the spot, may be planted forthwith, making the soil firm by treading it whilst dry previous to planting. Throw around each of the bulbs, which may be about 15 inches asunder, a handful of silver-sand, and make the soil firm about them. The depth to plant varies from 9 inches in very light, to 4 or 5 in heavy soil. Make a conical heap of coal-ashes or half-decayed leaves over each station, to keep out the frost.

NERINES.

Easy of cultivation as these bulbous plants are, they are seldom seen in gardens, and yet no plants are more worthy of culture. Years ago I grew them, but circumstances have interfered with my doing so for some time; and so rarely do I meet with them now, that on looking in recently at the Birmingham Botanical Gardens, I was pleased to see plants of *Nerine coruscaus* in bloom. It is a very pretty bulbous plant, with a truss of orange-scarlet blossoms. Other varieties are *flexuosa*, *Fothergilli*, *sarniensis*, and *crispa*. They do well with the treatment given to *Amaryllis*, and a 48-pot is quite large enough for them. *D.*

THE NEW CALIFORNIAN GLADIOLI.

A new strain, belonging to the *Gandavensis* section, has been raised in California, a strain that bids fair to make its mark in the annals of *Gladiolus* culture.

The *American Florist* thus describes this new departure: "Perfect in colour and markings. . . . nearly all colours of the largest of flowers so closely ranked that the flowers seem to be ranked in four rows on the stem; and, best of all, flowers to the stem of the cane, so close together as to give the extremity of the flower-stem a perfect cone of flowers, the petals entirely hiding the stem on all sides. The individual flowers are simply immense in size. We found numerous ones of many varieties 5½ inches from tip to tip of petals, with colours of every kind and marking known to the species."

To give an idea of colours, perhaps it would be well to pick out five descriptions of dwarf-growing varieties:—

No 1. Flowers closely packed all round the spike, like a *Hyacinth* (and are often double). Light cherry-rose in colour, striped lilac-crimson. An exquisite and striking variety.

No. 2. A lovely flower, large, open, and of unusual substance. It is of the purest white, striped and flaked with cherry-red. This is apt to vary, sometimes appearing almost pure white or cherry-red.

No. 3. Particularly attractive variety; flowers

dark flesh-pink, with a salmon sheen, streaked purplish-crimson, and sometimes with black; edges of petals charmingly tipped white.

No. 4 is a rich deep crimson.

No. 5. A striking variety, large open flower, varying from shrimp-pink to carmine; blazed and striped amaranth.

The raiser of this race intimates that, in producing this new strain, a million or more of seedlings have been raised, and a careful selection carried on for twelve years, the result being as before mentioned. It should be further added, that the petals are of much greater substance than the *Gandavensis* known to our English gardens, the Californian strain being distinguished by thick, stiff, nearly fleshy petals, which stand the Californian sun much better than the thin petals of our English kinds.

Whether this strain will withstand our changeable English climate has yet to be determined, but my impression is, that this race would prove of much value for conservatory decoration, and will doubtless meet with favour from amateurs who possess a glass-house, with little or no heat, and who are at a loss what to grow. Again, in the hands of decorators, and those gardeners who have to provide striking "changes" in the conservatories, &c., and who are at a loss for "something fresh," I fancy they have here valuable plants. *Pioneer.*

ON TREES AND SHRUBS IN LARGE TOWNS.

(Concluded from p. 514.)

2. *The selection of individual trees, &c.*—Anyone visiting a nursery with the view of purchasing will often meet with two styles of trees—the one with clean, straight vigorous shoots; the other with shoots of more compact and moderate growth. The former have been planted at considerable distances apart when in a young state and left to grow undisturbed for years, hence their vigorous appearance. They are the most tempting to the eye, but not really so good as the latter, which assume the less vigorous form, because they have been frequently transplanted from a young state. These latter are specially desirable for town planting. The conditions under which they have to live in the future are not over-favourable to growth and longevity, and it is always a harder task, even under the most favourable conditions, to transplant the former with success. The former will please the eye best when newly planted, but the latter will look and be the best at the end of the first year's growth and afterwards. And the cause of this is easily explained, even to those who have but a limited knowledge of tree-nature. A tree or shrub that has remained for a long time undisturbed in the same place pushes its main roots downwards to a great depth, and laterally to great distances, forming, as it does so, but few fibres. Now, in removing such a tree when sold, the roots are almost invariably shortened, and the chances of life and prosperous growth seriously diminished. But the frequently-transplanted tree has shorter main roots and more abundant fibres, all of which may be dug out with the tree, and replanted with it in its next home.

The question of how often should trees be transplanted in the nurseries to be safe for removal is sometimes asked, but it is not easy to give a precise and definite answer. Some trees, as the *Wellingtonia*, are best removed once yearly; others, as *Willows* and *Poplars*, will stand very well for four years, and there are intermediates cases; but none should be left undisturbed for more than four years. Here, in choosing the style of tree, a practical knowledge of gardening is almost indispensable, for it is not always easy for the uninitiated to feel sure of his ground. Anyone who has followed these remarks must see, on reflection, that the present mode of obtaining trees for new plantations is almost as bad as it can be. A list is prepared, names and heights given, and sent round to a certain number of nurserymen for prices. On their

return the prices are compared, and the lowest tender is usually accepted. This is the way to obtain the desired things for the least expenditure of money in the first instance. The articles are there by name, of the specified height, and of fair appearance. But the chances are—the process of cultivation for safe removal when sold, being a costly one—that the trees offered at the lowest price are of the least value, having been cultivated to sell rather than to prosper in the future. I have known many cases where plantations have been filled on this principle, and the owners have had the mortification of seeing numbers of subjects die off at once, and others drag on a miserable but short existence, which would not have been the case had they been frequently transplanted from their infancy upwards. It is a costly experiment to plant badly-prepared trees, however good-looking they may be, as the sum total of good ones is of small consideration in comparison with the total expenditure of what may be called cultural and collateral expenses. And then, what a loss of time and enjoyment are incurred in waiting for the bad trees to die before clearing them out and replacing them with good ones. I would here go so far as to say that a large tree may be removed with the same chances of success as a small one, provided it has been properly prepared for removal beforehand. The only qualifications of this remark are, the contingencies of a bad soil, an unfavourable season, or careless planting.

3. It now remains to speak of the planting and after-management of the trees:—

First, of Soils.—Soils are so various that it is impossible to particularise every one of them. If, however, we speak of loam, peat, chalk, clay, sand and gravel, we shall embrace the greater part.

Loam, in all its varieties, is a soil in which most trees and shrubs thrive well. It requires nothing more than loosening to the depth of 2 feet 6 inches, and enriching by the addition of manure, much or little, according to its natural poverty or richness. There may, however, be extreme cases in which the loam is so light, that it can be improved by the addition of clay or marl; or so heavy, that a portion of sand would be valuable.

Peat, if not wet or too sandy, will suffice for the prosperity of many trees and shrubs, and here manure and clay are valuable improvers. Many kinds of peat are precisely the thing for *Rhododendrons* and *Azaleas*, but we have found them thrive equally well in light fibrous loam. Wet peat bogs are a bad soil for most trees, because they are at once poor and sour, and are best improved by draining and exposure to the air for some months previous to the introduction of the trees, at which time manure may be added.

Clay should also be exposed to the air for some months before planting in it; if wet it should be drained, and enriched, and ameliorated by manure and sand, or old mortar, the *débris* of old brick buildings.

Chalk is not a bad subsoil, as it is cool, though poor; and if it comes within 2 feet 6 inches of the surface, it should be removed to that depth, and replaced with loam and manure. *Rhododendrons* abhor chalk, and should be kept from the influence of water containing its properties in solution.

Sand and Gravel are bad soils for trees, because poor and dry, and they should be removed to the depth of 2 feet 6 inches at the least, and replaced with loam and manure.

All soils that are wet should be drained, for few trees will thrive long if their roots are placed in stagnant water.

When preparing beds or borders for trees, the whole of the soil should be loosened by trenching to the depth of 2 feet 6 inches, and converted or improved where necessary on the above principles.

In planting single trees, it is a good plan to make what gardeners call "stations," to give them a good start in life. By a "station" is understood a square of ground, say, 3 feet in diameter, the soil of which is loosened to the same depth, and improved by the withdrawal or addition of materials if necessary, according to the suggestions already given.

If a good practical gardener is employed in planting, he wants no instructions from me or anyone else; but as this is not always the case, I will venture on a few remarks.

When planting trees, the roots should be carefully spread out, and fine mould settled between them before filling up the ground, which should afterwards be firmly trodden down above them. The careless and foolish practice of allowing the roots of trees, when planting, to be huddled together with their ends often turned upwards, instead of downwards, is often the cause of indifferent aftergrowth and premature decay. Trees should not be planted when the ground is soddened with water, lumpy, or sticky.

Large trees require staking, that the wind may not sway them to and fro, and hinder the formation of fresh rootlets. The tree-guard, too, is often a necessary adjunct as a protection against mischief or accidents.

For the first year after planting, trees and shrubs should be watered copiously, heads and roots, in dry weather, driving the water with moderate force upon the leaves, with the object of removing the impurities that will have settled on them. As time goes on, the pruning-knife will be called into requisition, to preserve the symmetry of the trees, and prevent an overgrowth that would interfere with the free-circulation of air, or prove an inconvenient obstruction of light. Nothing that I could say on this subject would be strictly applicable to the numerous individual cases which would continually arise. They must be weighed and decided on by the individual knowledge and good sense of an experienced practical gardener.

It may be thought that before concluding this paper, I should say something about the humbler denizens of the garden, the bulbs and flowering plants, which add so much to the beauty of our parks and recreation grounds. But this opens up a wide field, which can hardly be satisfactorily traversed within the limits of space at my disposal. I can only say that many bulbs and herbaceous plants are available here. By bulbs, I do not mean merely Hyacinths and Tulips, to which we have been long accustomed, but to many things, as Scillas, Narcissus, Iris, Gladioli, Crocuses, and Snowdrops, which would do well if planted in rich sandy soil.

One strong reason for the use of bulbs is, that they can be brought to their work in a prepared and efficient state, and can be renewed yearly where necessary. Perhaps there are but few instances in which they would prove satisfactory if allowed to remain to flower a second year, when the previous year's growth had been made under the trying influences of a town atmosphere. The same may be said of some bedding and herbaceous plants—they should be renewed annually. *Wm. Paul, Paul's Nurseries, Waltham Cross, Herts.*

HOME CORRESPONDENCE.

IRON v. WOOD IN GLASS-HOUSES.—This question still agitates the minds of some gardeners, notwithstanding the sifting the subject received some years ago in gardening journals. I know the general verdict of the gardeners was given against iron, and in favour of wood; but I personally, am not satisfied with that verdict, when it is viewed in the light of these latter days. In those days the sash-bars of iron houses were too close together, too heavy very often; were provided with no channels to carry off the water, that always will condense on iron in cold weather and during the night, and, so far as my knowledge goes, they were rarely galvanised. All these undoubted disadvantages of the iron house have now been got rid of, and in the system invented by Newton, of Hitchin, we find rolled steel used for the roof-bars, thus ensuring the utmost strength with the least possible dimensions; channels to avert drip; the non use of putty; and galvanising to take the place of paint—besides some minor "wrinkles" that are very convenient in practice. Houses built with these steel roofs are as air-tight as any plant-house needs to be, and practically imperishable; whilst owing to the reduction of the cross-section of the metal to the minimum, the radiation of heat—

that bogie of the older gardeners—exists no longer. And it was always a question that was not settled to my satisfaction, "if iron really allows the escape of more heat than glass itself?" The first cost of an iron-house is certainly greater than a wooden one, but this is greatly outweighed by the smallness of future repairs, and the non-necessity of paint, if the iron be galvanised. It would afford me much satisfaction to know what the readers of the *Gardeners' Chronicle* think of the matter. *One in Doubt.*

THE ORCHID COMMITTEE.—I do not think that the Royal Horticultural Society goes the right way to work to make itself popular with all classes of the community. Take, for example, the Orchid Committee. When a plant comes up for a Certificate, what happens? The members of the committee in favour of a Certificate are requested to hold up their hands; this, I contend, is a most unfair way of judging. The well-known firm of Messrs. A., having sold a plant to Mr. B., when the plant comes up for a Certificate, Mr. A., being on the committee, is obliged to hold up his hand, and others in the trade, although not thinking the plant worthy of first rank, are constrained to vote in its favour, otherwise their interests might suffer, were they not to do so. I am of opinion that the Committee should be composed of amateurs [it is largely so. Ed.], and that the judging should be by ballot. Under this system, to which no exception can, I think, be taken, it will be found that many who are under present circumstances unwilling to exhibit, will then do so, as it is a recognised saying that you must live close to London to have the merits of your plants publicly acknowledged. A friend of mine, well known in the world of horticulture for his writings and cultural skill, was asked and begged to come to London to read a paper on his mode of culture of a certain plant. This he at last consented to do, and at great personal inconvenience to himself, started for London. When he reached the place where he was to read his paper, only one member of the Council condescended to speak to him. He read it, and the secretary asked for, and got, his manuscript, and for which he was not even thanked. This is an example of the way many practical gardeners have been cold-shouldered by the Royal Horticultural Society, unless they happen to be within the charmed circle; and it is not the way either to extend the influence or usefulness of such a Society, which, whether the Council think so or not, is largely dependent on the reputation it bears in the estimation of practical cultivators for its success. *Justitia.* [We print this letter as expressing the opinion of many at a distance, who do not realise what the Society does. We think our correspondent has made a mistake in his signature. Ed.]

LILIUM OCHROLEUCUM. *Wallich*—At p. 526 of your recent issue, "J. M." writes:—"Wallich described his ochroleucum as 'dull yellow,' which admirably fits in with the colour of Mr. Baker's *Wallichianum superbum*." Will "J. M." be so kind as to give me the book and the page from which this quotation is made? I have not been able to find out that Wallich ever published any description of his ochroleucum. I know that he intended to do so, but I was not aware that this intention was ever carried out. As I said before, David Don published the plant as *Lilium nepalense*, and in his *Plante Asiaticae Rariores*, vol. iii., p. 67, Wallich adopted this name. The plant was gathered by Wallich's collectors in the mountains of Nepal, and there is no reason to suppose that he himself ever saw it alive. Sir Joseph Hooker is engaged at present in working out the Lilies for his *Flora of British India*, and we have drawings of three of the new Burmese Lilies ready for the *Botanical Magazine*. *J. G. Baker.*

ESTATE FRUIT NURSERIES.—Mr. Crump's advice, as given at Manchester, with respect to the establishment by landowners having large estates, of fruit tree nurseries, specially for the furnishing of trees to their tenantry, is good; but, I think, should be qualified so far that it would be best to purchase all such trees in the form of maidens from the trade, because that course would almost invariably ensure the securing of properly-worked trees, and the proper stocks. If it were resolved to raise stocks on an estate from Apple pips, these being very incorrectly termed crab stocks, all sorts of stocks would result, with the most irregular effect upon the future trees; in the same way, if unevenly selected, or unsuitable forms of dwarfing stock be used, the effect on the future of the trees is usually disastrous. I very much

doubt whether there could be found outside of nurseries, just the technical knowledge, born of wide experience, which nurseries alone afford. Few gardeners know one tittle concerning stocks and tree working, which those who have had long terms of service in fruit nurseries possess. No one would wish to see badly worked or inferior trees supplied to estate tenants, whether they be farmers or labourers. On the other hand, there seems to be no present means of solving the difficulty as to the furnishing tenants with trees to plant on other's land so satisfactorily as the landowner providing them, because every such tree planted adds something to the value of an estate. Probably few gardeners are in a better position to give good advice on this matter than Mr. Crump, because the plan advised has long been in operation at Madresfield Court. He and I would probably differ only in reference to the best place for the stock selecting and working of them, and if I incline to the trade nursery for such work, it is because what I have seen leads to that opinion. *A. D.*

DAHURICUS?—May I ask the meaning of the specific or varietal epithet *dahuricus*, which I find applied to several plants? I suppose it to be geographical, and in old atlases I find a name "Dauria," given to a district on the upper Amoor, to the east of Lake Baikal; but I can find no *Dauria* either in atlas or gazetteer. But my newest atlas, Bartholomew's, published in 1889, which has a list of 100,000 names of places and countries, gives no *Dauria* or *Dahuria*, either on the map or in the index. It is well, therefore, that an explanation of the word should be given now, or posterity may dispute about it, as some of us have recently been doing about Jerusalem. *C. W. Dod, Edge Hall, Malpas.*

JERUSALEM ARTICHOKE (pp. 482, 526).—Perhaps I ought to have replied to Mr. Dixon's remarks, but he seemed so determined to misunderstand what I wrote that I did not do so, and am quite contented that Mr. Wolley Dod should have done it for me. I may, however, be allowed to state that the Jerusalem Artichoke was never called *Girasole* in Italy, that the name was applied to a quite different plant, and that the derivation of Jerusalem from *Girasole* is a modern guess, which I unhesitatingly place among those "vulgar errors" in philology, which spring from basing derivations on similarity of sound. But I should like to ask what is the objection to "Jerusalem"? If it is that the plant does not come from there, Mr. Dixon must somehow explain away the other instance that Mr. Wolley Dod quotes (and there are more); he must explain the Star of Bethlehem, and he must refuse to eat turkey at Christmas till he has found out how an American bird is called a Turk. *Henry N. Flacombe, Bliton Vicarage, Gloucestershire.*

GOOSEBERRIES TRAINED ON WALLS.—Bare spaces between the permanent occupants of the wall might be planted with the Gooseberry, and it matters but little what the aspect may be, an eastern one will afford fruit fully a fortnight before that from the open quarter is ready. A western aspect affords a continuance of the supply of ripe fruit after all has been gathered from the open quarters; and plants standing on a northern aspect will supply the latest fruit—and indeed as late as October, if birds and wasps are kept from it. In a wet cool season the fruit from walls exceeds in flavour that from the open, and seldom do the berries split as is common on the latter. A capital variety for wall culture is the Warrington, which keeps a long time, and is of good quality, but not better in that respect than Champagne, which in spite of its small fruit is also well suited for the wall, in which position the flavour improves by keeping up to a certain period. The branches of Gooseberries should be trained upright, allowing a space of 3 inches between the bearing branches. Numerous growths will spring from the front of the main branches, and these should be cut off directly they are large enough. Summer pruning of Gooseberry trees on walls well repays the outlay incurred, and not only is it good for the fruit, but the trees are easily protected from the birds and wasps. *E. M.*

ONIONS.—The crops of Onions were badly milled in many places this year. Our Onions had a bad attack of it, but we managed to stay its progress by syringing them with pentasulphide of calcium and water, in the proportion of half a pint of the first-named to four gallons of the latter, which at once killed the mould. As the bulbs fast their tops early in the autumn, or had them so badly injured, the Onions did not grow to full size, and could not be

properly ripened, so that their keeping in store is doubtful, but much may be done to aid them in this by roping and hanging them in a cool dry shed where plenty of air passes through. The roping may be done by using short lengths of tarred or other string, or pieces of stick, to tie the tops of the bulbs to, using for this latter purpose matting or raffia, and then forming a loop at top wherewith to hang each lot up. Any which are without necks, or in the least unsound, should be laid out thinly for immediate use, and on no account ought any attempt be made to keep Onions in bulk, as sweating is caused, and decay soon sets in. *J. S., Ipswich.*

BRIGHT COLOURS IN TREE FOLIAGE—I should like to mention a case, which I noticed this autumn, which seems to exactly illustrate your contention, at p. 521, in the paragraph relating to colours in autumn foliage. There it is stated that injury to a branch will produce coloration in foliage even at mid-summer, thus showing that chemistry is not alone accountable for this autumn coloration. Quite early in October, passing along the Richmond Park Road, I noticed on a villa front the odd circumstance that *Ampelopsis Veitchii* was green as grass, literally, on one side of the front windows, and on the other showing the richest colour. I went across the road to examine this curious case, and found, not that there were two distinct plants, as I had at first assumed, the variation being due to diversity of character, as seedling raised, but that, whilst the main stems, which went up on either side of the lower window were of equal dimensions, the one carrying the coloured leafage showed in one place evidence of earlier injury, as the bark was visibly cankered. Both stems, however, came from the same root. That the injury to the stem had also checked growth was evident, as on the green side the branches covered one fourth more space than did those on the coloured side. Should anyone be dubious as to this fact, although probably few are sceptical, or be disposed to put the matter to the test, they can easily do so by injuring or ringing the bark on branches of the *Ampelopsis*, or of deciduous trees. It is evident that change in coloration proceeds first from subsidence in the flow of sap, and that changes which follow may be, to a certain extent, chemical. There is nothing in it, however, that is mysterious. What is much more difficult to understand is, as in the case of the Purple Beech, *Prunus Pissardii*, purple-leaved Maples, &c., the dark leaf coloration should be the product of rude health, and not of sickness unto death. *A. D.*

NEW PEA, SUPERABUNDANT.—I saw this new variety of Mr. Eckford's, in his seed grounds at Wem, during last August, and I feel sure it will be found to be a decided acquisition. In height it is about 2½ feet, and it is an immense cropper. The pods and seeds are in colour dark green, and the flavour is excellent. Several plants grown as single specimens, merely supported by sticks in the centre, were branched and bushy. *W. D.*

THE WEATHER IN MID-STAFFORDSHIRE.—The last month was one of the worst on record in this locality for outdoor pursuits, rain falling on twenty-two days. The second and third weeks give a rainfall of 2.04 and 2.41 inches respectively, with an almost total absence of sunshine. The rainfall for the month was 5.33 inches. On October 27 the wind veered to N.E., and has remained at that point with variations to east to the present time (November 2). On the 28th there were 4° of frost; on the 29th, 6°; and on the 30th, 8°. *John Wilkes, Creswell Hall Gardens, Stafford.*

THE PEOPLE AND PRIVATE GARDENS.—As the note on p. 343 says, it is pleasant to record the fact, that people living in and about towns appreciate the privilege of being allowed to walk around and see the gardens of the rich. Of this, I have a good deal of experience, as through the kindness of my employer many parties, large and small, have come here from Portsmouth, which is fifteen miles distant, and I do not remember an instance of misbehaviour, although on many occasions the persons have been mostly of the poorer classes. This good conduct of the visitors may, I think, be attributed to the freedom accorded them to go where they please, through the tempting fruit-houses, or amongst the flower beds, without let or hindrance. The visitors appreciate the trust that is placed in them, and form mutual protectors of the plants and fruits, &c., which they are allowed to behold. And should the grass be trodden down somewhat in certain parts, or a few loose stones get on to the turf,

or some heel-marks be made on the margins of the paths, a brush up, and the garden-roller, put all these little matters right in a short time. Many of our visitors say that they wish there were more possessors of gardens like Mr. Myers, who takes pleasure in showing the beauties of his garden to visitors from a distance. *E. Molyneux, Swanmore Park.*

THE AFRICAN OIL-PALM IN BORNEO.—I was much interested in your extracts relating to the cultivation of *Elais guineensis* at Pu'lo Daat, an island four or five miles off the British colony of Labuan. Being in Labuan in 1877 and 1878, I often saw the young Oil-Palms referred to at p. 423, these having been raised, as I believe, from seeds supplied from Kew, or through their colonial correspondents. The Hon. W. Hood-Treacher was at that date Acting-Governor or Administrator of Labuan, and having considerable interest in the Cocoa-nut oil industry established by his relation, Dr. Treacher, a former colonial surgeon of the colony on Daat Island, he was anxious to add a plantation of the African Oil-Palm to the great Oil-Palm of the East, *Cocos nucifera*. Pu'lo Daat is one of the largest of the seven or eight islands lying near Labuan, and off the Bornean coast. On it are very large Cocoa-nut plantations and rough oil-works, mainly worked by Chinese. The more hilly parts of the island in 1878 were covered by forest and jungle, which sheltered numerous wild pigs—animals which are about as mischievous and ravenous as goats, and a constant source of trouble to farmers and gardeners and settlers in the Malayan Archipelago; in some parts of the Malay Archipelago, indeed, organised pig-hunts are the rule at certain seasons, and the sport is quite as popular, and perhaps much more necessary, than are stag or fox-hunts nearer home. I was sorry to see by your extract on p. 423, that the flourishing little colony of African Oil-Palms had been removed, having had a slight personal interest in their success. Mr. Hood-Treacher and I had often talked over the pros and cons as to the success of this plant on Pu'lo Daat, and when the seedling plants were about 15 inches high, I accompanied him to the island in a boat, with some Malays and the first batch of young Palms. A large square patch of land, through which trickled a tiny stream, had been surrounded by a stockade to keep out nocturnal marauding of the pigs, and here we, with the help of the native boatman and a Chinaman or two, had holes dug, and the first Palms were planted with our own hands. The stream was dammed, and the plants were well watered in from a dip-hole, and then the young plants were shaded from the scorching sun with branches from the jungle. I shall never forget how the sun poured down upon us, and how soon our white clothes became a mass of wet and dirty rags on our aching backs; but the first batch were got in, and later visits were cheered by their leafy exuberance and vigour, and so we felt rewarded for the blistered state of our hands and subsequent loss of cuticle. There was a good Palm-leaf or Atap-thatched residence on the island, and my boatmen often ran in shore there for water and vegetables on our journeys to and from the mainland of Borneo itself, so that I now and then rested there, after having had a rough time in the forests beyond. If this should meet the eye of the Hon. W. Hood-Treacher, now one of H. M. Residents in Perak, I hope he will tell us why no attempts were made to utilise the produce of these African Oil-Palms. Of course, in all comparatively new countries, it is difficult to manage and market the produce of any new commodity. In Borneo, Sago and Cocoa-nut oil are staple products, the production and marketing of which are well known to both the native Malays and the Chinese settlers; but, as stated at p. 424, there is no market for African Palm-oil at the great eastern part of Singapore, and it may be that there are also technical difficulties as to the extraction and preparation of the oil itself, not easily and readily acquired by those to whom the preparation of Sago or of Cocoa-nut oil is easy and remunerative. *F. W. Burbidge.*

LATHYRUS SATIVUS.—The fact that this pretty blue-flowered annual Pea has recently been distributed under the name of *Lathyrus ceruleus*, as if it were a new species, is interesting because out of one hundred who might grow it, perhaps not a dozen would remember it as an old inhabitant of our gardens. It is known in seed catalogues as *L. azureus*, or Lord Anson's Pea, and it is so plentifully produced in Germany that a pound weight of seed can be had for a very small sum. It grows to the height of from 3 to 4 feet, and, like other species,

attaches itself to branches, &c., for support. The leaves are small and grassy-like, the flowers solitary and abundant, smaller than those of the common Pea, and of a bright azure blue colour—such a tint of bright sky blue as is rarely found in annuals. Alas! like others of the tribe, the flowers burn when fully expanded, and soon lose their beauty. The seeds are large, brown, angular, and much indented. It finds a place among the leguminous plants grown for fodder, and is still largely cultivated for this purpose in France, Germany, and elsewhere, and that notwithstanding pernicious qualities have been assigned to it by Duvernoy, and others, as causing rigidity of the limbs, delirium, and other injurious effects, and, it is said, to such an extent that its use was prohibited by an Edict of George, Duke of Wurtemberg, in 1671, which was confirmed and enforced by his successors. There is a variety known as the white-flowered Chickling, Veitch, which differs from the type in nothing except in the colours of its flowers and seeds, which are white, and the foliage is also a slight shade lighter in colour. Our methods of cultivating *L. sativus* are not of a nature to show off the delightful tint of blue found in the flowers to the best advantage. It is sown in the border thickly, the plants make a spare growth, put forth a few blossoms, no attention is given to them, and it proves disappointing. Now, let anyone treat it as a biennial and sow seeds, say, in August, grow the plants on in pots, and plant out in warm and sheltered spots in October, leaving the plants to the mercies of winter. It is quite hardy and generally stands well. Let them cultivate the plant, giving it due attention and good soil; and in spring and early summer they will reap a wonderful harvest of fine and brilliantly-coloured blossoms. The attempt is certainly worth making—let me assure your readers of that. *R. D.*

POTATO BLIGHT PREVENTION.—The inability to credit anything new being of use seems to infect everyone connected with the soil. The gentleman who wrote the article upon the trial of the above at Reading seems to have taken the complaint badly, and has allowed himself to be convinced that the Bouillie Bordelaise is injurious upon most insufficient data. I would point out one fact, and that is, that Suttons' experiment with the mixture was not an elaborate one, practically one strength of mixture (2 per cent.) being used three times upon Potatoes in one spot, cultivated one way, on the same soil, and exposed to the climatic influence of one place. It is true it was applied to 278 varieties of Potatoes, but one mistake in the preparation or application of the mixture would vitiate the whole experiment, and I think no sane individual would call the application of one strength of solution a large affair. No recommendation has ever been issued by the Board of Agriculture, so that the experiment was not carried out as directed by them as stated by the press. The following experiments were made upon Potatoes cultivated by fourteen different farmers, and the mixture applied by six different men; in the case of those of Mr. Cobb's, and of 2 acres of my own, by the ordinary labourer, and in my opinion far outweigh the single experiment at Reading. The six 2-acre plots of the Royal Agricultural Society of England at Sittingbourne, Cardington, Isle of Axholme, South Wales, Devonshire, and Lancashire, dressed three times with a 2 per cent. solution, the first time between June 29 and July 13, and second, between July 15 and July 27, were not damaged in the bine by mixture. Plots at Cardington and South Wales both show a large increase per acre over undressed Potatoes. The owners of the Potatoes at the former place write me—"We are well satisfied with the utility of the Bordeaux Mixture." Nine acres of Regents at Sittingbourne, next to plot of the Royal Agricultural Society of England (same sort), were dressed by Mr. Cobb twice with 2 per cent. mixture. I saw the 11 acres on September 21. They were then green and growing—not a leaf damaged. Regents' bine untreated, and those dressed with 1½ per cent. adjoining, all killed down by disease long before. The cultivation on this farm is of the highest character, fish and yard-dung being most liberally used. At Bewdley, Worcestershire, Mr. Thomas Harley applied 3 per cent. of mixture to Pince, Maincrop, and Early Puritan at end of August; not the suspicion of damage to the bine, but Potatoes do not appear bettered by the treatment as far as withstanding the blight is concerned. This land is liberally treated. Mr. H. Chancellor, of Chessington Hall, Surbiton, put 2 per cent. of mixture on Beauty of Hebron, and 4 per cent. once on Jeannie

Deans (on August 5). I saw them on August 29; Hebrons were ripening off, bine of same variety all round killed by disease; the Jeannie Deans a grand green, same variety by the side, dead; in this instance mixture put on with ordinary syringe, and not a leaf injured by it. Both sorts have been dug, and show increase of some tons per acre for treatment. Land rather heavy clay, well and intelligently cultivated; Potatos dunged with moss-litter; Hebrons not fresh seed; Jeannie Deans from Scotland this year. Mr. H. Chancellor tried various other fungicides, but without success. At Deeping St. Nicholas, Spalding, on July 3, I applied 2 per cent. of mixture to Puritans, Myatts, Internationals, White Beauty, King of the Russets, Sharpe's Victor, Monarch (about twenty-one sorts in all), on my trial-ground of 3 acres, many of them being those that Messrs. Suttons' report shows were injured at Reading. Same date, I used same mixture upon 1½ square rod of Maincrop, in middle of 8-acre field; on August 1, 3 per cent. of solution was again applied. A plot of Early Puritan on same farm, dressed once with 2 per cent. and twice with 3 per cent. had double crop without disease; of same sort adjoining, which were half bad. In lot 2, bine of Maincrops were still green, and double crop of rest of field, which was killed down some time before. In digging the tubers on trial-ground, I found that in the case of some of the varieties, especially Internationals, the mixture had failed to protect all the tubers, but with each sort the crop was double on those treated, which is not surprising, as bine kept green for over a month after that untreated had died down. At Spalding, no damage done to a leaf by mixture. Soil medium black land, well cultivated by owner, Mr. G. C. Healey, who understands Potatos; manure on trial-ground, half a ton cheap super. to acre. Maincrops and Puritans on dung. The Myatts were from Cambridge, Maincrops from Cheshire; most of other sorts were from Kent—a change not calculated to make them grow stronger. The Puritans last mentioned were not fresh seed, were planted on soil that had been planted with the tuber in 1888, 1889, and 1890. In the last year the whole crop, same variety, was lost by blight; in addition, the spot is under trees, and wet. Upon my trial-ground, at Cliffe, Rochester, Kent, I applied a 3 per cent. mixture on July 18 and August 24, to two plots, upon ends of an oblong piece of Potatos—ten varieties: First and Best, Windsor Castle, Nonsuch, Hebrons, White, White Elephant, Sutton's Seedling, and others. On August 24, I found intervening rows killed by disease, bine of one plot rather spotted with disease, the other only slightly so; second dressing saved latter entirely, and it ripened beautifully, but the bine of others died off with disease in places; crop much increased, and not a leaf damaged. Soil, a strong loam, dunged last year (for Potatos); this year, bone-meal, phosphatic guano, and nitrate of potash. Seed came from Herefordshire, and some my own saving. On September 5, in order to ascertain cost of applying mixture in the field, I had 2 acres of Reading Giant dressed by ordinary labourer with 3 per cent. mixture. They were planted on June 18, especially to try effect of mixture applied late once only. I intended to have had it put on about August 24, but was short of labour, so that bine was rather more spotted than I liked; but mixture kept it green three weeks' longer than variety undressed. 260 gallons put on the 2 acres; time, two and a quarter days, going longest way to work. From the acre covered by myself in half a day, it would have taken me one day and a half. In this case no damage to bine, except where mixture was prepared by man from my written directions, and about half an acre of bine seriously damaged by me when I applied it. Soil, medium loam, out of cultivation; no manure for seventeen years, taken to experiment upon with manures for Potatos, seed from Surrey. Crop, two tons, all sorts to acre. No difference apparently, one way or other, resulted from putting on Bouillie Bordelaise, or it was too slight to notice. Crop smaller where bine damaged in slight degree. On September 11, on Mr. Park's farm at Brunstane, near Edinburgh, and upon Mr. Simpson's farm, at Portobello, I applied the mixture to some Regents, Maincrop, and Abundance upon the former, and to some Abundance on the latter, in the presence of Mr. Young of the *North British Agriculturist*, whom I have to thank for assisting me in my efforts to try the solution. On the 15th, on my trial ground upon Mr. Duncan's farm at Carnoustie, I dressed some Reading Giants, Harperfield Regents, Shah, and other sorts; and on the 16th, on Mr. Cowe's farm of Balhousie, Carnoustie,

Arbroath, I put it on some Imperators. Mixture used in north, 1 lb. copper, 1 lb. lime, to 26 pints of water. All the farms were cultivated in the very highest way. On those near Edinburgh, large quantities of dung are used; at Balhousie, dung and a special mixture of Mr. Cowe's. Trial ground Potatos were on dung, placed in the rows. Not a single leaf was harmed, although my friends write it has done no good to the crop as far as they can see. Object to see effect in Scotland of one strong dressing once disease had appeared. The printed summary you quote does not give the reader the proper proportion, as there are 601 rows planted with varieties that are injured, and only 209 to which it was beneficial. The loss would have been 6 cwt. 1 qr. 14 lb. had they been equal. I do not agree with a line of the report. From my experience, it is early and second-early varieties that will pay best to dress as regards increased crop, and certainly all good quality Potatos like Abundance. I have a letter this week from the largest Potato merchant in Scotland to say that a 40-acre field of Abundance, near Dunbar, had a fine 14-ton crop to the acre. When I was worth it was half bad, yet with the Bordeaux Mixture I would plant it for a main crop. It is the best quality cropping tuber ever sent out from Reading from a farmer's point of view. As long as we must have crops to pay, so long shall we suffer badly with disease, even in the case of the so-called disease-resisters. A mixture that will only cost about 25s. an acre to secure the crop will pay even with them, as it will enable them to ripen. Thousands of tons of Magnums are cooking like soap at the present moment, simply because the bine was destroyed by blight before they were ripe; that want of quality makes over £1 per ton difference to the grower, if the soil is good quality soil. I have just sold Potatos at 60s. per ton that would have made 90s. had they not been cut down by disease; as they were my own, I speak feelingly. The machine used in all the experiments narrated was Vermorel's Eclair Vaporiser, except at Chessington. The R. A. S. E. put 75 gallons to an acre on first application, 100 gallons on second. I believe at Reading, 160 gallons was applied each time to the acre. In my experiment I noticed that with bine 3 feet high I used mixture at the rate of 220 gallons to the acre; on second application just before bine closed in rows, but consider I probably put on too much in my anxiety to thoroughly cover it. I think as little as 50 gallons per acre on first application would be sufficient with some sorts, and 100 on second, but quantity would depend entirely upon cultivation, variety, climate, time, &c., so no definite quantity can be stated to meet all cases. I did not find it a fertilizer, and never expected it was. It simply increases the crop by protecting the haulm, thus allowing the tuber to develop. Experiments made have proved that the spores of the fungus will not grow on leaf protected by copper. It is far from any wish of mine to desire to minimise the efforts the firm have made to inform the farming world of the effects of the Bordeaux Mixture. What I want every Potato grower to do is, to simply consider the facts I have placed before him, and not say it is no use trying that copper mixture, it is a failure at Reading, so can be no good. Try it, and you will report the same as W. Whitehead Cousins. [We have other correspondence to the same effect, but which the pressure upon our space does not permit us to print at present. Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 27.—Present: D. Morris, Esq., in the chair; Dr. Hugo Müller, Professor A. H. Church, Rev. W. Wilks, Dr. F. Oliver, Mr. McLachlan, Mr. F. D. Michael, and Dr. Masters.

Primula Mould.—Mr. Masee reported upon a specimen submitted to him for examination from Mr. Wolley Dod. The mould in question is *Ramularia primulae*. It has occurred in various parts of Europe, but is believed not to have been previously recorded from Great Britain.

Water Plant.—The capsules sent by Mr. Barr from Constantinople were ascertained to be those of *Iris pseudacorus*.

Pear Spot.—Mr. Hinds sent a Pear with irregular depressions on the surface, corresponding to a black patch of decay within, and probably of fungus origin.

The condition is familiar to Pear growers in the case of certain varieties, but little is known of the inducing causes. It was referred to the mycologists at Kew for further examination and report.

Wallflowers with Clubbed Roots.—Specimens were exhibited in which the roots presented a similar appearance to that of "clubbing" in Cabbages. It was suggested that the condition was due to the presence of a *Myxomycetous* fungus rather than to insect agency. The specimens were accordingly sent to Mr. Lister for report.

Hunting Spider.—Rev. O. P. Cambridge reported on a spider received from the Royal Botanic Garden, Kew, on more than one occasion, and called by Mr. Cambridge *Salticus citus*, though possibly identical with *Hasarius Adansoni* of Savigny. It is a native of Amboina and other parts of the tropics. The Kew example is an adult male; the female is stouter and of a dull brown hue. The species is partially naturalised in the hothouses at Kew, and is interesting from its agile habits.

Fog Investigation.—Dr. Francis Oliver announced that he was working with the Manchester Committee, and to whom a moiety of the Government grant had been made over. In or about London six stations were established where definite quantities of air were collected and analysed.

Miscellaneous Exhibits.—Dr. Masters showed a cone of *Abies Webbiana* from Pota, imperfectly branched at an early stage of its existence, so that the apex of the cone was two-lobed, and the whole cone more or less twisted on its own axis from the check to growth experienced by the union of the two branches. The same gentleman showed specimens of *Heuchera* sp., in which not only were leaf-buds formed at the apex of the leaf-stalks, but also along the sides of the withered flower-stalks. An examination of the vascular cords of the leaf-stalk showed that whilst throughout the greater part of their length they were three in number, one central and two lateral, at the apex of the stalk they formed a perfect ring as in a true stem.

SOUTHAMPTON.

OCTOBER 27 AND 28.—The Chrysanthemum exhibition season of the present year commenced in this southern town, where, for two years, no Chrysanthemum show has been held. It was pleasant, therefore, to find that the townsfolk had conquered their apathy, and re-established an old institution with a very good exhibition, in which the classes generally were well filled, and the exhibits of good average quality.

The groups of miscellaneous plants formed a good feature of the show, and Mr. Carr, gr. to W. A. Gillett, Esq., Fair Oak Park, Bishopstoke, easily gained the 1st prize, his group showing great skill and good taste in setting up, and the plants employed were admirably suited for the purpose; Mr. W. Peel, gr. to Miss Todd, Sidford Lodge, Shirley, was 2nd.

Groups of Chrysanthemums arranged with an eye to good effect, were not remarkable for either their high quality of plant or blossom, or in any respect, great stiffness and formality prevailing in all of them, and the sticks were very conspicuous. Mr. Busby, gr. to F. Willan, Esq., Thornhill Park, Bitterne, and Mr. H. Jones, gr. to Miss Buchan, Wilton House, Southampton, were respectively 1st and 2nd.

Specimen Chrysanthemum plants were fairly good considering the early date, but time was needed, in most cases, to bring out their flowers perfectly. Mr. E. Rose, gr. to Dr. Aldin, The Firs, Bassett, was 1st. Mr. Can made a pretty display with a collection of Orchids. We noted *Cypripedium Harrisianum*, *Odontoglossum grande*, *Cattleya Warocqueana*, *Vanda cœrulea*, *Dendrobium formosum giganteum*, and *Zygopetalum crinitum*, all very good.

Cut blooms of the Chrysanthemum were staged in large numbers, and generally of fine size and finish, especially when the earliness of the date is taken into account.

The chief class was one of twelve incurved and Japanese varieties, distinct, which brought five competitors; the best being those shown by Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, the incurved being large, fresh-looking, and well finished; and the Japanese fresh, not lumpy. The best were L. Böhmer, Stanstead White, E. Molyneux, Avalanche, and Sarah Owen, amongst the latter; Empress of India, Lord Alcester, Queen of England, Golden Queen of England, Princess of Wales, and Alfred Salter amongst the former. Mr.

J. Agate, Havant, ran this stand very close, and was placed 2nd, his Japanese being really excellent.

Mr. Molyneux exhibited fine blooms in the twelve incurved class, with Mr. Ingfield as 2nd.

There were, in the class for twelve Japanese varieties six competitors, the display made being a bright one. Mr. Trinder, gr. to Sir H. Mildmay, Dogmersfield Park, was an easy 1st, and Mr. Ingfield 2nd.

Classes were provided for twenty-four and twelve blooms in any section. These are easy classes to fill, and no wonder that the entries were many. Mr. Ingfield was an easy 1st for twenty-four, and Mr. Agate for twelve blooms. Mr. Penfold, gr. to Sir F. Fitzwygram, Bart., staged nice full flowers in the Anemone-flowered class. Mr. Agate, in the large or show class, obtained the 2nd prize; and in the Pompons class he obtained the 1st place. The handsomest stand of Chrysanthemums and other flowers was one shown by Miss K. Goldring. Fruit was exhibited in good quantity.

GOSPORT.

OCTOBER 29, 30.—For four years past it has been the custom to hold the autumn exhibition in the month of October, and with very good results, for the Chrysanthemum is an early bloomer in the district, and November would certainly prove to be too late. The Thorngate Hall provides a capital place for a meeting of this kind. Mr. Spencer, the Hon. Secretary, had all the arrangements well in hand.

Fine specimen Chrysanthemums were those of Mr. G. Hawkins, gr. to E. Laphorne, Esq., Gosport; and Mr. Battershall, gr. to A. D. Cave, Esq., Newtown, who were respectively 1st and 2nd.

Pompons were well staged by Mr. T. H. Watch, Gosport. Mr. F. Davis, gr. to Mrs. Churcher, Gosport, obtained the 1st place for a group of well-flowered Chrysanthemums.

Mr. G. Hawkins was a large prize-taker in the cut-bloom classes, winning 1st for twenty-four distinct varieties, half Japanese, and the rest incurved; and also 1st for eighteen Japanese, twelve reflexed, twelve singles, and twelve Pompons. Messrs. Foot and F. Davis following them closely. A special prize was offered for reflexed, incurved and Japanese varieties, six of each, and won by Mr. Hawkins and Mr. E. Foot. Single-flowered varieties were well to the front, and were much admired.

Grapes, Apples, Pears, and vegetables formed part of the exhibition, and were abundant and of good quality generally, but stand in no need of comment.

HAVANT.

OCTOBER 29, 30.—The eighth autumn exhibition of the Havant Chrysanthemum Society was held in the Town Hall, and it was considered to be one of the best hitherto held in Havant. The cut blooms of Chrysanthemums were large, fresh, and well shown throughout. The principal class was one for thirty-six distinct, half to be Japanese, and half incurved varieties. Mr. Payne, gr. to Mrs. E. Smith, of the Oaks, Emsworth, won the Silver Cup, which went with the 1st prize; his incurved blooms were especially full, fresh, and well finished. Mr. J. Agate, Havant, came 2nd.

For twelve varieties incurved, and twelve Japanese varieties, Mr. Payne was again a successful exhibitor, showing varieties almost identical with those in his Cup stand; Mr. C. Steptoe, gr. to G. A. Gale, Esq., Horndean, was 2nd in the former class; Mr. J. Parrot, gr. to Mrs. K. Smith, Wood End, occupying a like position in the latter.

Anemone-flowered Chrysanthemums made a large display, and a class was provided for twenty-four mixed varieties of Japanese, Anemone, and the more ordinary type. Mr. Agate, who was 1st, had a capital lot, of which most were well developed in the centre—a great point in this section. Mr. Agate was 1st for twelve reflexed Anemone blooms; Mr. Steptoe being 2nd in this and the former class.

Single varieties were plentiful, the variety Oceana being excellent; it has the faintest blush colour on a white ground, and the florets are pendent at the tips. Mrs. D. B. Crane is cerise-pink; Bessie Conway is lilac, mottled and striped with rose; and Florence is blush-white. These were some of the more striking flowers in Mr. Agate's lot. Mr. Steptoe was 2nd.

Plants in pots, whether arranged in groups, or as single specimens, were excellent. Mr. Fuller had the best group, and Mr. Penfold, gr. to Sir F. Fitzwilliam, Bart., M.P., the best specimens.

A nice lot of miscellaneous plants was shown by Mr. Woodfine, gr. to Captain Bond.

As is usual at these shows, fruit found a place here, and included Grapes and hardy fruits.

KENT COUNTY.

A SUCCESSFUL autumn exhibition was held by the above, in the Rink, at Blackheath, on Monday, November 2, and following day. The general good quality of the exhibits was remarkable, and not, as at some shows, a strong class or two, and others weak. The exhibits were arranged with taste, and the Skating Rink is a very suitable place for a show of flowers. The secretarial duties were ably carried out by Mr. Searle and an efficient committee.

Cut blooms formed the leading exhibits, and no fewer than thirty-five classes were provided for in the schedule. For the best thirty-six, half incurved and half Japanese, distinct varieties, there were five competitors. Mr. J. Doughty, gr. to Mrs. Tomlin, Angley Park, Cranbrook, was 1st for two excellent stands, the Japanese large, fresh, and bright-coloured; and the incurved flowers also large, compact, and all were neatly staged—a great matter in showing these flowers. Mr. E. G. Whittle, gr. to C. Goschen, Esq., Addington, was a close 2nd; the Japanese flowers in this exhibitor's stand were of remarkably good quality.

For the best twenty-four Japanese varieties, distinct, competition was strong, and the exhibits were excellent throughout. Mr. Blick, gr. to M. R. Smith, Esq., Hayes Common, was 1st; his stand contained a bloom of Vivand Morel (premier Japanese bloom in the show), and other novelties. Mr. G. Picker, gr. to C. E. Shea, Esq., Foot's Cray, was 2nd.

Seven growers competed in the class for twelve incurved blooms, and Mr. E. G. Whittle took the 1st prize; Mr. J. Lyne, gr. to H. F. Thinks, Esq., Foxbury, Chislehurst, was next. Mr. G. Picker, with heavy blooms of the Christine family and King of Crimsons, led the way in the class for twelve reflexed varieties; Mr. Leadbetter, gr. to A. G. Hubbuck, Esq., Elmslea Lodge, Chislehurst, 2nd.

Anemone varieties were well staged by Mr. Mitchell, gr. to Mrs. Arbutnot, Bridgen Place, Bexley, who was 1st; and Mr. A. Tomalin, gr. to S. White, Esq., Oakwood, Crayfords, who was 2nd.

Pompons were well shown by Mr. E. Tickner, gr. to J. Watney, Esq., Shermanbury House, Reigate; his Japanese blooms were largely represented in the classes set apart for specified colours.

For six of any white variety, excluding Avalanche, Mr. Doughty was 1st, with very fine blooms of Stanstead White; and for six blooms of Avalanche, Mr. J. Blackburne was 1st, with heavy blooms. For six of any yellow variety, 1st, Mr. Shea, with grand specimens of Sunflower. The best six of any colour except Sunflower were shown by Mr. Blick, his Vivand Morel being excellent.

A class was provided for Chrysanthemums of the so-called Queen family, six blooms, in not less than four varieties, and here Mr. Lyne, with very fine examples, took the 1st prize. The finest stand of six blooms of a white incurved variety came from Mr. E. G. Whittle, who had Empress of India; and for six of any colour, the same exhibitor was placed 1st, for Queen of England.

Amateurs made a great and good display, the valuable prizes inciting to much competition. Messrs. Perkins, Coventry, showed bouquets of Chrysanthemums, and Mr. W. Garton, Blackheath, had the best filled epergne.

Groups of Chrysanthemums to occupy 50 square feet were shown by five, and these being arranged at the sides of the Rink, together with other groups, consisting of foliage and mixed flowering plants, were effective. Mr. Payne, gr. to T. Williams, Esq., Oaklands, Lewisham Park, was an easy 1st, his plants being not too closely arranged, and carrying fine blooms. Mr. J. R. Rhoden, gr. to J. Vavaiseur, Esq., Rothbury, Blackheath Park, was the winner of the 2nd prize.

Mr. A. Tomalin was 1st for a group of miscellaneous plants, lightly arranged.

Table plants were numerous and excellent, and Mr. C. Lane, gr. to E. H. Coles, Esq., Burntwood, Caterham, had the best.

BRIGHTON AND HOVE.

NOVEMBER 3, 4.—Taken as an all-round exhibition, this annual gathering was one of great excellence, as was apparent in the classes for cut bloom, in which competition was keen, and in those for plants, which were well-filled. The plants were

not abnormally large, and the greater number were in the best condition. The groups to be seen at this show are amongst the best to be found anywhere. In three classes for groups, there were sixteen entries; for cut blooms in the large class, there were eight, and others mostly in proportion. The unfavourable weather for several weeks past did not appear to have had any ill-effect—at least, not on the flowers observed at this show.

Cut Blooms.—For forty-eight cut blooms, Japanese and incurved in equal proportions, Mr. Neville, gr. to F. W. Flight, Esq., Cornstiles, Winchester, was 1st, in a close competition. The uniform quality of this exhibit had great weight with the judges, and the Certificate of Merit of the National Chrysanthemum Society was awarded, in addition to the 1st prize. The second award went to Mr. Penfold, gr. to Sir F. Fitzwilliam, Leigh Park, Havant; the Japanese were equal to, if not better than in the 1st prize, but the incurved were rather weaker.

For twenty-four Japanese, Mr. Glen, gr. to Mrs. Montefiore, Worth Park, Crawley, was 1st, with a splendid lot of blooms, very fresh, in good variety, and many of extra large size. The 2nd prize went to Mr. Phillips, gr. to Dr. Baber, The Deodara, Meopham, Kent.

In the class for twenty-four incurved varieties, Mr. Phillips was easily 1st, with a fine even lot of blooms.

For twelve incurved varieties, Mr. Jupp, gr. to G. Boulton, Esq., Eastbourne, was a good 1st, the blooms of extra size and good quality, without any overdressing; Mr. Emery, gr. to M. G. Megan, Esq., Avoca, Eastbourne, took 2nd place, with good blooms.

For twelve Japanese, Mr. Emery was 1st, showing fine blooms of the usual varieties; Mr. Fowler, gr. to Mrs. Hall, Barrow Hill, Henfield, was a close 2nd.

Mr. Phillips was 1st for Anemones, with splendid flowers; he also taking 1st for reflexed.

For six blooms of any one kind of incurved, Mr. Russell, gr. to Dr. Lewis, Henfield, was 1st with Violet Tomlin; Mr. Snow, gr. to C. and A. de Muriette, Esqrs., Wadhurst Park, being a good 2nd, with W. G. Droyer, of the Queen type.

For six blooms of Japanese, Mr. Glen was placed 1st with extra large and fresh blooms of Avalanche; Mr. Emery following him very closely indeed with large and richly coloured Edwin Molyneux; Mr. Fowler being 3rd in this, an extra strong class, with Thunberg, large and fine.

With Pompons, Mr. Russell was 1st.

Messrs. Perkins & Son, Coventry, were 1st, for a bouquet of Chrysanthemums with a pretty combination. Mr. G. Miles, Victoria Nursery, Dyke Road, Brighton, 2nd. The judges might have reversed the order without much difficulty; in these exhibits they were very close.

For a single stand, Mr. Brockway, gr. to A. S. Culley, Esq., Burgess Hill, was 1st, with a beautiful arrangement of Source d'Or.

Plants: Groups.—In the class for a group of thirty plants, not less than fifteen varieties, Mr. Miles, Bristol Nurseries, Kemp Town, Brighton, was an easy winner, the plants were individually good specimens, with an average of over twenty-four flowers of good quality upon each plant; Mr. Hill, gr. to M. Wallis, Esq., Withdeane, was 2nd, with freely-grown plants of the best varieties.

In the next class, Mr. James Thorpe, West Hill Road, Brighton, was 1st in a strong competition. The variety in this group, with the extra fine quality, were its strong points, combined with the finish as a whole; Mr. Collis, gr. to J. Barnes, Esq., Alexander Villas, Brighton, came a good 2nd, consisting chiefly of the larger-flowering kinds, Japanese in particular, being strong.

In the following class, for twelve plants stood upon the floor with an undergrowth of foliage plants, Mr. Fry, gr. to C. W. Catt, Esq., Brighton, was 1st, with well-grown plants effectively arranged. Mr. House, gr. to F. Mewatt, Esq., Withdeane Hill, was a good 2nd, the variety not so fine. This kind of grouping, combining good cultural display with effect, is worthy of encouragement.

The class for four dwarf-grown plants contained some of the best plants in the show. The 1st prize lot from Mr. Scutt, gr. to Mrs. Jenkins, Burgess Hill, would have been an ornament to any exhibition, and very hard to beat. They were Maiden's Blush (very fine indeed), Madame de Sevin, Peter the Great, and Hiver Fleuri. The National Chrysanthemum Society's Certificate was also awarded here; these plants averaged 4 feet diameter. Mr. Hill was a good 2nd, Source d'Or being shown remarkably well.

Decorative plants in small pots made a good display, the best coming from Mr. Fairs, gr. to R. Clowe, Esq., Hassoeks.

Mr. Scutt was also 1st for four standards, with profusely-bloomed plants, the heads large, the best being Bertha Rendatler and Maiden's Blush; Mr. Hill following again very closely with similar plants; and he also took 1st for four pyramids, Roseum superbum being one of his best, Elaine also good. The best single specimens were from Messrs. Scutt and Hill in respective classes.

Mr. Scutt was again successful for six plants of Pompons, with dwarf-grown examples, very pretty, and not over-trained.

Cyclamens were best from Mr. House, whose plants were equal to those seen at our best shows in the spring time.

Double Primulas were very superior, the best twelve coming from Messrs. W. Miles & Co., West Brighton Nurseries; and the best six from Mr. House.

The classes for single Primulas were very well filled, the most successful prize-takers being Messrs. Hill and Collis, each showing in respective classes freely-flowered plants of good strains.

The show of fruit was an excellent one in all classes. For black Grapes, Mr. Kemp, gr. to Scrase Dickens, Esq., Coolhurst, Horsham, was 1st, with very fine Lady Down's Seedling; and Mr. Glen in the same position, with Muscat of Alexandria, well kept and coloured. Mr. Glen was also 1st for four dishes of culinary Apples, and the same of dessert Pears; amongst the latter were very fine fruits of Belle de Bruxelles and Doyenné du Comice.

Mr. Duncan was 1st for dessert Apples, with standard kinds, finely coloured. The competition in the fruit classes, and, in fact, throughout the entire show, was unusually good. No doubt, greater encouragement is given by offering 4th prizes in all chief classes.

Of the newer Chrysanthemums, Louis Boeber was to the fore in several stands, whilst there were a few good blooms of Mrs. Alpheus Hardy. Mr. Wells showed his sport W. Wells, which was shown at the last Royal Horticultural Society's meeting. He had also a very promising seedling single variety, of the colour of Cullingfordii. Mr. Owen had several seedlings, the best being one from reflexed Putney George, a fine and distinct flower.

BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL.

NOVEMBER 3, 4.—Very diverse generally is the exhibition of this society from that of ordinary Chrysanthemum societies, because Chrysanthemums form only an ordinary part of the general body of exhibits. The show was held in the Streatham Town Hall, and was, perhaps, the first of the suburban winter exhibitions. It was also a very bright charming show, full of meritorious objects, the fine hall being used to its utmost capacity.

Orchids.—Specially attractive were these for the time of year, some two and a half dozens of excellent pieces in good bloom being staged in the competitions. Mr. Ranson, gr. to J. F. Gabriel, Esq., had the best six, in capital *Cattleyas aurea* and *Warocqueana*, *Vanda cœrulea*, *Ocidioides tigrinum*, *Calanthe vestita rubra*, and *Cypripedium Spicerianum*. *Dendrobium formosum giganteum*, *Cypripedium Harriaianum*, *Odontoglossum grande*, and *Pleione maculata* were excellent in other collections. A very fine *Cypripedium insigne*, from Mr. Ranson, was the best single specimen; and Mr. Wiggins, gr. to O. von der Meden, Esq., had the best three plants in *Odontoglossum Rogersii*, *O. grande*, and *Dendrobium formosum giganteum*.

Foliage plants were very largely shown. The best four were fine *Alocasias metallica* and *crystallina*. A good *Dracœna* and a Palm came from Mr. Hall, gr. to J. A. Ryder, Esq.

Ferns also were very numerous and good, the best four plants being staged by Mr. Wright, gr. to A. Whitehead, Esq. *Platycerium grande*, *Gymnogramma Laucheana gigantea*, *G. peruviana*, and *Adiantum Farleyense* were first-rate. A beautiful plant of *Gymnogramma schizophylla gloriosa* was included in other collections. There were some stove and greenhouse plants in bloom shown; the best three from Mr. Hill were *Pancreatium fragrans*, *Allamanda Hendersoni*, and *Bouvardia Alfred Newnea*. Chinese Primulas were very good also. Mr. Murrell, gr. to Mrs. Burton, had twelve very fine plants, capitally flowered. There were table plants, epergnes, floral-baskets, bouquets, &c. in great variety. The most effective group of Chrysanthemums was set up by Mr. Poulton, gr. to C. T.

Cayley, Esq. Mr. Weston, gr. to D. Marbucar, Esq., had the best six trained Japanese plants, Elaine and Mons. Jacotot being specially good. Mr. Cherry had the best six incurved trained plants of the usual varieties; and Mr. R. Clarke the best three. Mr. Austin also had the finest six trained Pompons, all good plants. In the chief classes for cut blooms, Mr. Howe, gr. to H. Tate, Esq., had the



FIG. 76.—*BEGONIA TUBEROSA VITTATA*: WITH STRIPED BLOSSOMS.

best twenty-four incurved, Alfred Lyne, Violet Tomlin, Princess of Wales, and Lord Wolsley, being particularly good. Mr. Murrell had the best twenty-four Japanese, having Mrs. Clarke, of inordinate size. Mr. Howe had the best twelve Japanese, showing some beautiful blooms. Other classes for cut blooms were well filled. A class for twelve Japanese on tall stems brought seven

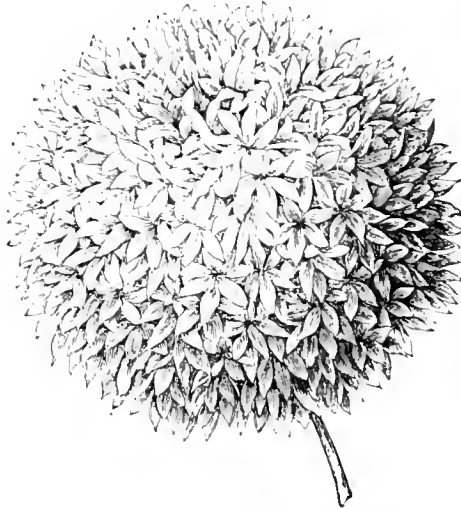


FIG. 77.—*GAILLARDIA, LORENZ'S PERFECTION*.

exhibits, but were much too crowded to produce any good effect.

Grapes were capital. Mr. Howe was 1st, with three bunches of Alicante in two classes for blacks, and with Muscat of Alexandria in a class for whites, all being first-rate.

Apples and Pears were abundant and good, so also were vegetables in two classes, all shown admirably in large flat baskets. Messrs. J. Peed & Sons showed a good collection of Apples; Messrs. Canoll & Sons twelve fine blooms of Louis Boeber Chrysanthemums; and Mr. W. Roupell, the Hon. Sec., a fine basket of Grapes.

WATFORD CHRYSANTHEMUM.

THE sixth annual exhibition of the above was held in the Agricultural Hall, Watford, on Tuesday and Wednesday, November 3 and 4, and proved, as in former years, a great success, the attendance being very large on both days. The entries greatly exceeded expectation, no fewer than 1300 cut blooms being entered. The splendid group of miscellaneous plants sent by the President (the Earl of Clarendon), was a striking feature in the show; the whole consisting of many fine plants of the best of Chrysanthemums, relieved with Palms, &c.

The principal prizewinner in all the classes was H. H. Gibbs, Esq., M.P., Aldenham House (gr., Mr. E. Neve). This gentleman was 1st for a miscellaneous group of plants, the principal varieties of cut blooms, and several of the prizes for vegetables (one for the best exhibit in the show); also prizes for Grapes.

Mr. C. R. Humbert, Hon. Sec. of the Society, was successful in carrying off the 1st prize, for a group of Chrysanthemums, on a space not exceeding 50 feet, in the open class. He was also awarded an aneroid barometer, for the best group in the show.

Mr. C. Van Raalte, Mr. J. Trotter, Mr. T. F. Blackwell, Mr. G. Sturman, and Mr. P. Bosanquet shared the greater part of the remaining awards for cut blooms. Mr. Robins won the prize offered by the Society to members for the best group of Chrysanthemums (50 square feet); Lord Esher being 2nd, with a prettily arranged group. Mr. A. Scrivener, florist, of Watford, was 1st for a wreath, two bouquets, and crosses of mixed flowers.

Among the various varieties shown was a splendid group of zonal Pelargoniums, Anemone and Pompon Chrysanthemums, Chinese Primulas, Cyclamens, and table plants. *A Correspondent.*

CONTINENTAL NOVELTIES.

We are enabled, by the kindness of M. E. Benary, seed merchant and grower, of Erfurt, to offer our readers an illustration (fig. 76) of a new striped *Begonia tuberosa vittata*, raised by him. So far as we know, our raisers of new Begonias have not been so fortunate as their Continental brethren in obtaining varieties with similar markings. The seed is said to produce 40 per cent. of striped or rayed flowers. The flowers sent to us were considerably larger than those here figured.

The other novelty (fig. 77), which we figure from a block kindly lent us by Herrn C. Lorenz, seed grower, Erfurt, is *Gaillardia Lorenz's Perfection*. It is an improvement on his *G. picta Lorenziana*, raised by him some eight years ago. The quilled petals are produced in great numbers, and form a globular bloom, not flattish, as in *G. P. Lorenziana*. It is a fine subject for bouquets.

SCOTLAND.

NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.

THE monthly meeting of the North of Scotland Horticultural Association was held on October 21 in the Upper Hall of the Young Men's Christian Institute, Aberdeen, Mr. D. M. Smith, retiring President, in the chair. A proposal to admit apprentice gardeners to the Association at an annual subscription of 1s. was adopted. Mr. C. S. France, the newly-elected President, then took the chair, and proceeded to deliver his opening presidential address. He thought they ought to make their programme a little more varied and comprehensive. He impressed upon them the advantage of careful observation of every freak of Nature that might come under their notice, and advised them to bring such matters before the Association for discussion, and if possible solution. In regard to what he had suggested with reference to the widening of the scope of the Society, what he particularly advised was, that papers should occasionally be given on such subjects as botany, vegetable physiology, geology, mineralogy, the nature and quality of soils, chemistry, entomology, and meteorology; he also directed their attention to

the importance of landscape gardening. A paper was also read by Mr. R. Farquhar, late of Fyvie Castle, on "Some Impressions of America," for which the thanks of the Association were also accorded. The meeting then terminated.

LAW NOTES.

THE LAW WITH REGARD TO BEES.

A CASE of interest to beekeepers was heard before Judge Prentice at the Bow County Court on October 5. Mr. W. J. Sheppard sued Mr. Alfred Cottage, builder, of Chelmsford Road, Woodford, for the value of two swarms of Ligurian bees, destroyed by him and his son on July 10 and 11. Mr. Simmonds, for plaintiff, said his client was honorary District Secretary to the Essex Beekeepers' Association, and the case was of the greatest interest to every keeper of bees. Plaintiff's premises adjoined defendant's, and it was held by Blackstone that if a swarm of bees escaped from the owner's premises, they remained his property whilst he kept them in sight, and he was legally justified in following the bees on to any other person's land, with a view of recovering them. Mrs. Sheppard deposed that on July 10 last she saw a swarm leave one of her husband's hives, and go on to a tree in Mr. Cottage's paddock. Defendant and his son came up with a pan filled with tar or something of the kind, which they lighted, and placed under the bees. They shook the bough, and the bees dropped into the fire, and were burned. Another swarm issued the next day, when she saw the same thing done. By Mr. Haynes (for the defendant): I heard a complaint from a Mrs. Stubbings, living close by, respecting bees, which she said were ours, spoiling some wine she was making. (His Honour: I don't place my wine in my garden. I should expect bees to get in it I did.) I did not hear defendant complain that our bees had stung his nurse. None of the bees came back to the hives.

Walter Debuam, of Chelmsford, expert to the Essex Beekeepers' Association, was next called, and said he had had several years' experience of bees, and got his living amongst them. Witness said it was the custom all over Essex, and indeed throughout the kingdom, when bees swarmed on to another person's premises, for the owner to go and take them. Mr. Haynes: But we never refused their coming on to our premises for them. Mr. Debuam: It is the custom to allow the bees half an hour or so to settle before asking leave to take them away. The defendant killed the bees before they were properly settled.

His honour suggested that the parties should settle the matter between them, but the plaintiff would not agree.

Mr. Haynes said that for years the plaintiff's bees had damaged his client's fruit trees. Still he did not press for a counter-claim. His honour: How could they damage his trees?

Ultimately, judgment was given for plaintiff (by consent) for five shillings, with costs, as from £5 to £10; the defendant, if he wished, having leave to appeal.

A BAD CROP OF ONIONS.

At Romford, James M. Manning, farmer, of Ashwells, Brentwood, sued Messrs. James Carter & Co., seedsmen, of High Holborn, for £2 6s., for loss alleged to have been sustained by the defendants supplying him with inferior Onion seed. He had in court a sample of the Onions represented to have been grown from the seed, and they had a very withered appearance, and were apparently worthless. The plaintiff said he ordered 1 1/2 lb. of the very best Onion seed they had. He received the seed and sowed it. A copy of the invoice was put in, and this bore the printed notice: "We guarantee our seeds according to the quality purchased to be of the highest average standard of vitality of the season, and it is open to the purchaser to confirm this by submitting samples to professional analysis at his

own expense. We cannot, however, be in any way responsible for the produce of the seeds sold under this guarantee or for errors of description, and it must, therefore, be clearly understood our responsibility ceases upon the final acceptance of the goods." His Honour: Whether that is a reasonable condition I cannot say. Mr. Robinson: It has been held so. His Honour: Then I should say he took the seed upon these terms. I shall hold that the plaintiff bought the seed on these terms, because he had the option of rejecting. His Honour then gave judgment for the defendants with costs. Mr. Robinson: I must say, in justice to my clients, that all their seeds are tested before being sent out.

VARIORUM.

THE FLORA OF DIAMOND ISLAND.—Diamond Island is situated at the mouth of the Bassem River, in the Indian Ocean, about 5 miles from Pagoda Point, and 8 miles from Cape Negrais, and in about 16° N. lat. It is of sandstone formation, somewhat exceeds a square mile in area, being about twice as long as broad, and the central part is a kind of plateau 60 feet or so above the level of the sea. With the exception of a small clearing for a telegraph station, the island is densely wooded down to the sea, but there is no Mangrove belt on any part of the sandy coast, unless it be considered as represented by a few patches of *Avicennia officinalis*. Thus is the island described, though in greater detail, by Dr. T. PRAIN, Curator of the Herbarium of the Royal Botanic Garden, Calcutta, who has visited the island in H.M. Indian Marine Survey steamer "Investigator," commanded by R. F. Hoskyn, R.N. Dr. PRAIN has published an elaborate analytical account of the flora in the Journal of the Asiatic Society of Bengal. He collected eighty-six species of flowering plants, three Ferns, and four funguses, among which there was not a single novelty. The enumeration includes a number of cultivated plants, among them the Coconut Palm; but these are all of recent introduction. It is supposed that the island was not previously inhabited, and therefore that the vegetation of the dense wood overspreading the island is quite natural. The most interesting fact brought out is the evident affinity with the somewhat distant Andaman flora, pointing to a former connection. The Report is also valuable to the student of plant-distribution, for the details it contains of the habitats and relative frequency of the component species of the vegetation.—*W. Botting Hemsley, in "Nature."*

TRADE NOTICE.

Mr. GEORGE BLADES, late gardener at Fern Grove, Grimsby, has taken the Humber Nurseries, Thorold Street, New Cleve, Grimsby, which were until lately in the occupation of Mr. J. Smith.

MARKETS.

COVENT GARDEN, November 5.

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

Trade slow, with shorter supplies. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.			
s. d. s. d.		s. d. s. d.	
Apples, 1/2-sieve	... 1 0-4 0	Melons	... 0 6-1 0
Grapes	... 0 6-7 6	Peaches, per dozen	... 1 0-4 0
Kent Cobs, 100 lb. 3/2	6-35 0	Pine-apples, St. Michael, each	... 2 0-8 0
Lemons, per case	... 15 0-30 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Acacia or Mimosa, French, per bunch	1 0-1 3	Narcissus, paper-white, Fr., p. bun.	0 6-1 6
Carnations, 12 blms.	1 6-2 6	Orchids:—	
Chrysanthemums, 12 blooms	1 0-3 0	Cattleya, 12 blms.	6 0-12 0
— 12 bunches	4 0-12 0	Ouontoglossum crispum, 12 blms.	3 0-6 0
Cloves, per dozen blooms	2 0-2 6	Pelargoniums, scarlet, per doz. 12 bu.	4 0-6 0
Eucharis, per dozen	3 0-6 0	— 12 sprays	0 6-1 0
Gardena, per dozen	2 0 4 0	Roses, Tea, per dozen	1 0-3 0
Henotrops, 12 sprays	0 6-0 9	— coloured, dozen	2 0-4 0
Hyacinths, 12 sprays	0 9-1 6	— yellow (Maréchal), per doz.	4 0-6 0
Lilac, white (French), per bunch	5 0-7 0	— red, per dozen	1 0-2 0
Lilium Harrisii, doz.	4 0-6 0	— various, doz. bun.	6 0-9 0
Liliums, various, doz.	1 0-3 0	Tabereroses, 12 blms.	0 4-0 6
Mauve Hair Fern, 12 bunches	4 0-9 0	Violets, Parme, per bunch	3 0-4 0
Mignonette, doz. bun.	1 6-2 0	— Czár, per bunch	1 0-2 0
Marguerite, per doz. bunches	2 0-4 0	— English, 12 buns.	1 0-1 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Adiantums, per doz.	4 0-12 0	Erica gracilis, doz.	0 9-12 0
Aralias, per doz.	6 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	18 0-63 0	— small, per 100	8 0-15 0
Begonias, per doz.	4 0-6 0	Ficus, each	1 0-5 0
Chrysanthemums, per dozen	6 0-9 0	Fuchsia, per dozen	6 0-9 0
— large, each	2 0 3 0	Scarlet Pelargonium, per doz.	3 0-6 0
Coleus, per dozen	3 0-6 0	Heliotropes, per doz.	4 0-6 0
Cyclamens, per doz.	9 0-18 0	Marguerites, per doz.	6 0 12 0
Cyperus, per dozen	4 0 10 0	Palms, various, each	0 2-1 0
Dracaenas, each	1 0 5 0	— specimen, each	10 6 84 0
Erica byemalis, per dozen	12 0 18 0	Solanums, per dozen	9 0 12 0

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, each	0 4 0 6	Lettuces, per doz.	1 0-1 6
Beans, French, lb.	0 6 1 0	Mushrooms, punnet	2 0-...
Beet, red, per dozen	2 0-3 0	Mustard and Cress, punnet	0 4-...
Carrots, per bunch	4 0-6 0	Parsley, per bunch	0 3 0 6
Cauliflowers, each	0 3-0 6	Shallots, per lb.	0 6-...
Celery, per bundle	2 6-3 6	Spinach, per bushel	3 6-...
Cucumbers, each	0 6-0 9	Tomatos, per lb.	0 9-1 3
Endive, per dozen	2 0-3 0	Turnips, per bunch	0 4-0 6
Herbs, per bunch	0 9-1 0		

POTATOS.

Owing to the better weather, Potatoes are arriving in larger quantities, although values on the whole are fairly maintained. Magnum, 65s. to 80s.; Imperators, 75s. to 85s.; Hebrons, 70s. to 80s.; Giants, 75s. to 90s.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 3.—Quotations:—English Apples, 3s. to 6s. per bushel; American do., 10s. to 20s. per barrel; Pears, 1s. to 2s. per sieve; Plums, 3s. to 3s. 6d. per half-sieve; Damsons, 3s. 6d. to 4s. do.; Bullaces, 1s. to 1s. 6d. do.; Tomatos, 4s. 6d. to 7s. per peck; foreign do., 1s. to 2s. per box; Seakale, 1s. to 1s. 6d. per punnet; Cabbages, 1s. to 2s. per tally; Savoys, 2s. to 3s. do.; Radishes, 2s. to 3s. 6d. do.; Greens, 1s. to 1s. 6d. per doz. bun.; Tarrops, 1s. 6d. to 2s. do.; Carrots, 1s. to 2s. 6d. do.; Onions, 2s. to 2s. 6d. do.; Parsley, 1s. 6d. to 2s. 6d. do.; Beetroots, 2s. to 2s. 6d. do.; Spinach, 1s. to 1s. 6d. per bushel; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Parsnips, 4d. to 6d. per score; Cos Lettuce, 6d. to 9d. per score; Cabbage do., 3d. to 4d. do.; Cauliflowers, 1s. to 1s. 6d. per doz.; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; English Onions, 4s. 6d. to 5s. cwt.; Belgian do., 3s. to 3s. 3d. per bag of 100 lb.; Dutch do., 3s. to 3s. 6d. do.; Spanish do., 6s. to 6s. 6d. per case; Celery, 6d. to 1s. per bundle; Horseradish, 1s. to 1s. 1d. do.; frame Cucumbers, 1s. 6d. to 2s. per dozen.

BOROUGH: Nov. 3.—Quotations:—Cabbages, 2s. 6d. to 4s. per tally; Marrows, 2s. to 4s. do.; Broccoli, 3s. to 5s. do.; Turnips, 1s. to 1s. 6d. per dozen bunches; Carrots, 1s. to 1s. 9d. do.; English Onions, 4s. to 5s. per cwt.; Pears, 2s. 6d. to 7s. per bushel; Canadian Apples, 12s. to 15s. per barrel.

STRATFORD: Nov. 4.—There has been an abundant supply of vegetables and fruits at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 2s. to 3s. per tally; Savoys, 2s. 6d. to 4s. 6d. do.; Greens, 1s. to 1s. 6d. per dozen bunches; do., 4s. to 5s. per tally; Cauliflowers, 9d. to 1s. 3d. per dozen; do., 3s. to 5s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 35s. to 45s. do.; do., cattle-feeding, 24s. to 32s. do.; Parsnips, 60s. to 70s. do.; Mangels, 15s. to 20s. do.; Swedes, 20s. to 25s. do.; Onions, English, 100s. to 115s. do.; do., Dutch, 3s. 6d. to 4s. 3d. per bag; do., Oporto, 6s. to 6s. 6d. per case; Apples, English, 2s. to 6s. per bushel; do., American, 12s. to 20s. per barrel; Collards, 1s. 6d. to 2s. 6d. per tally; Celery, 8d. to 1s. per roll.

SEEDS.

LONDON, Nov. 4.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., write that a better and stronger feeling prevails for red Clover seed; the run of late has been more particularly upon choice yearling samples, for which considerably enhanced terms are now asked. There is no change in either Alsike, white, or Trefoil. Winter Tares are now temptingly cheap. Rye is firmer. Blue Peas are in limited supply, growers are gratified with the prices at

present obtainable in London for fine blues. White Runner Beans continue in brisk request. The low rates ruling for Haricot Beans attract attention. Bird seeds keep firm. Linseed goes against the buyer.

POTATOS.

SPITALFIELDS: Nov. 3.—Quotations:—Magnums, 60s. to 80s.; Regents, 60s. to 70s.; Champions, 50s. to 75s.; Imperators, 60s. to 80s.; Hebrons, 55s. to 80s.; Early Rose, 50s. to 70s.; Snowdrops, 60s. to 80s. per ton.

BOROUGH: Nov. 3.—Quotations:—Hebrons and Elephants, 70s. to 85s.; Imperators, 60s. to 75s.; Bruces and Magnums, 60s. to 80s. per ton.

STRAFORD: Nov. 4.—Quotations:—Magnums, 60s. to 80s.; Imperators, 60s. to 80s.; Elephants, 65s. to 75s.; Snowdrops, 65s. to 80s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Oct. 31, and for the corresponding period in the previous year:—1891, Wheat, 35s. 11d.; Barley, 30s. 7d.; Oats, 19s. 5d. 1890, Wheat, 31s. 6d.; Barley, 29s. 7d.; Oats, 17s. 5d. Difference: Wheat, +4s. 5d.; Barley, +1s.; Oats, +2s.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.			
	ACCUMULATED.					Ins.	No. of Rainy Days since Jan. 4, 1891.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the Week.		
	Above (+) or below (-) the Mean for the week ending October 31.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 4, 1891.	Below 42°, difference from Mean since Jan. 4, 1891.					More (+) or less (-) than Mean for Week.	Percentage of possible Duration since Jan. 5, 1891.
1	—	22	21	+ 215	+ 77	12	—	197	41.9	55	28
2	3	20	38	— 38	+ 129	7	—	148	24.6	38	31
3	aver	30	6	— 73	+ 89	6	—	144	19.4	24	29
4	aver	36	5	— 58	+ 108	2	—	154	21.9	36	34
5	1	34	13	— 81	+ 96	4	—	154	24.5	42	32
6	aver	36	1	— 76	+ 132	4	—	149	26.5	43	37
7	3	22	20	+ 105	+ 53	12	—	162	36.0	42	33
8	2	32	19	+ 51	+ 35	9	—	147	28.3	64	30
9	1	35	0	— 99	+ 109	9	—	157	34.8	41	38
10	3	33	15	+ 53	+ 42	8	—	178	27.6	58	32
11	3	35	13	— 6	+ 39	9	—	182	30.7	51	35
12	1	60	0	+ 8	+ 40	5	—	156	28.9	57	48

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending October 31, is furnished from the Meteorological Office:—

"The weather has been finer and drier than for a long while past, especially over the more northern parts of the Kingdom, where scarcely any rain has fallen. Fog or mist has, however, prevailed in various parts of the Kingdom.

"The temperature has been a little below the mean in all but the eastern and southern parts of England, the deficiency being greatest (about 3°) in Ireland and Scotland. The highest reading, which occurred on very various dates, ranged between 55° and 57° in most districts; but in England, S., the thermometer reached 58°, and in the 'Channel Islands' it rose to 61°. The lowest values were recorded on one or other of the three concluding days, when sharp frost was experienced in most districts. In the north and east of Scotland the thermometer fell to 20° or 21°, and in the 'Midland Counties' and 'Ireland, N.'

to 24°; in the 'Channel Islands' the lowest reading was 39°.

"The rainfall has amounted to about half the average in the eastern, central, and southern parts of England, but in all the more northern districts, the fall has been quite unappreciable, and at many stations there has been absolutely none.

"The bright sunshine has been considerably more than the mean in all districts excepting 'England, E.' The percentage of the possible duration has exceeded 40 in most parts of the Kingdom, and has exceeded 50 in 'Ireland,' the north-west of 'England,' the north of 'Scotland,' and the 'Channel Islands,' the highest value of all (64) being in 'England, N.W.,' where the amount of sunshine has been three times as much as the normal."

NOTICES TO CORRESPONDENTS.

BOOKS: Propagation of Soft-wooded Plants (Auguste Reiser); Thomson's Handy-book of the Flower-Garden, 4th Edition (W. Blackwood & Sons, Edinburgh and London).—T. Hacking. 1. The Journal of the Royal Horticultural Society. Apply to Mr. J. Weathers, assistant-secretary at the office of the Society, 117, Victoria Street, Westminster; 2. Thomson's Handy-book of the Flower-Garden (Blackwood & Sons, Edinburgh and London).—R. H. B. Handy Book of the Flower Garden, by David Thomson (Blackwood & Son); Select Stove and Greenhouse Plants, by B. S. Williams & Son, Victoria Nursery, Upper Holloway, N. It you want merely a list of garden plants, any good nursery list would answer your purpose.—Floral Decorations: E. P. Miss Hassard's book may be bought at the second-hand booksellers for a few pence.

CENTIPEDS: C. E. P. The creatures prefer decaying vegetable matter. They are not likely to injure the bulbs, but it is possible they might take a fancy to the roots if there was not sufficient decaying matter available.

CHRYSANTHEMUM BLOOMS: E. W. There are few of these that do not require dressing more or less, and all of them should be cut with stems about 6 inches longer than the tubes they will be shown in. Japanese, with drooping florets, should have stems long enough to just keep the tips of these from touching the table.

COINAGE OF POPULAR NAMES: A. While always availing ourselves of established popular names, we think it preferable not to coin new ones, except under certain circumstances. The canon adopted at the Paris Nomenclature Congress, art. 68, says:—"Every friend of science should resist the introduction into a modern language of names of plants, which had no previous existence therein, unless they are derived from Latin botanical names, or slight modifications." Thus it is allowable, and indeed preferable to say, Conifers instead of Coniferae, and so far as we are concerned, we should prefer the term Conifera to that of "Cone-bearing trees and shrubs."

CORRECTION.—In our report of the Royal Horticultural Society in our last issue, p. 529, the name of Mr. Holford's gardener, Westonbirt, Tetbury, was printed Quarterman instead of Chapman.

CUCUMBER ROOTS: E. W. The swellings on the roots of your plant are due to eel-worms, so often described and figured in these columns. You must turn out your plants, and burn both them and the soil, and start afresh another season with fresh soil.

EPIDENDRUM: A. A. Yes; please send another flower when it opens. Accidents will happen, in spite of our best endeavours to avert them.

LECTURES ON HORTICULTURE: A. M. M. See the leading article in the Gardeners' Chronicle for October 31, and select your twelve lectures from that.

NAMES OF FRUITS: H. J. Z. 1, Reineette du Canada; 2, Emperor Alexander; 3, not recognised; 4, Court of Wick; 5, Damelow's Seedling; 6, Golden Pippin; 8, Beurré d'Amanlis; 9, Autumn Bergamot.—A. K. 1, Duke of Beaufort; 2, Cox's Orange Pippin; 4, Alfriston; 6, Claygate Pearmain.—A. C. 1, Hacon's Incomparable; 2, Beurré Bosc; 3, Swan's Egg; 4, Marie Louise d'Uccle; 5, British Queen; 6, Jersey Gratioti.—E. C. 1, Marie Louise; 2, Bergamot d'Esperen; 3, Louise Bonne of Jersey; 4, Beurré Diel; 5, Cellini; 6, Hambleton Deux ans.—W. Parker. 1, Louise

Bonne of Jersey; 2, Beurré Bosc; 3, Vicar of Winkfield; 4, Beurré de Capiaumont; 5, Black Worcester; 6, Comte de Lamy.—Carter, Page & Co. 1, not known; 2, St. Germain; 3, not recognised; 5, Bergamot d'Esperen; 6, a small Marie Louise; 7, Urbaniste.—G. M. Pear: King Edward; 1, Queen Caroline; 2, King of the Pippins; 3, Adams' Pearmain.—Twed. Your specimens are so very small, it is almost impossible to identify them—we do our best. 1, King of the Pippins; 2, Betty Greson; 3, Lord Derby; 5, Cox's Orange Pippin; 6, Golden Noble; 7, Cellini, or small Emperor Alexander.—H. T. 1, Rymer; 2, Bess Pool; 3, Colonel Vaughan; 4, Reineette du Canada; 5, Beurré Bosc; 6, Van Mons. Léon Leclerc.—W. H. S. 1, Golden Reineette; 2, King of the Pippins; 4, Pomme de Neige; 5, Worcester Pearmain; 6, Gravenstein.—Enfield. 1, Scarlet Nonpareil; 2, 3, Fearn's Pippin; 4, Mère de Méage; 5, Golden Noble; 6, Waltham Abbey Seedling; 7, Winter Pearmain; 8, Blenheim Orange. Pears: 8, Josephine de Malines; 9, Colmar d'Éré; 10, Beurré Bosc; 11, Thompson's; 12, Autumn Bergamot; 14, Glou Morcean. The number far exceeds our limit of six.—In Dutch bulb bags—no letter. 1, Beurré Diel; 2, Gansel's Bergamot; 3, Flemish Beauty; 5, Josephine de Malines; 6, Paradis d'Autonne; 7, Eyewood; 8, Bergamot d'Esperen.—J. P. 1, Grenadier; 2, Beauty of Kent; 3, Brownlee's Russet; 3, Lord Suffield; 4, French Crab; 5, Cockle Pippin; 6, Braddick's Nonpareil; 7, Brabant Bellefleur; 9, Manx Codlin; 10, Lord Derby; 12, Pine Golden Pippin. We cannot name more at this time—six is our limit. The Pears must wait.—G. S. T. 1, Annie Elizabeth; 2, Jolly Beggar; 3, Golden Noble; 4, Manx Codlin; 5, Golden Noble; 7, Cellini.—Leamington. Your Apple is Warner's King.—D. R. P. 1, Passe Colmar; 2 and 4, not recognised; 3, Duchesse d'Angoulême.—W. Russell. Your Seedling Apple seems to be quite distinct, and is a large and very handsome fruit, well worthy of extended culture.—T. S. 1, Lane's Prince Albert; 2, Lord Grosvenor.—G. G. 1, Maréchal de la Cour; 2, Louise Bonne of Jersey; 3, Beurré d'Amanlis; 4, Uvedale's St. Germain; 5, Beurré Hardy; 7, Colmar d'Éré; 8, Beurré Diel. Apple: Hawthornden.—Herbert Gray. Beurré de Capiaumont.

NAMES OF PLANTS: Helen. 1, Juniperus sinensis; 2, a form of the Douglas Fir; 3, Retinospora pisifera; 4, Juniperus, perhaps communis; 5, Cephalotaxus pedunculata var. fastigiata; 6, Platanna var. orientalis.—M. S. T. Probably the Black Italian Poplar, Populus monilifera.—W. S. 1, Lobelia siphilitica; 2, Aster Novi-Belgii.—P. S. Cupressus funebris, a most interesting and beautiful species, introduced from China by Fortune; see Gardeners' Chronicle, 1850, p. 439. It is hardy in the southern counties. A warm conservatory would be needlessly warm.—T. E. S. Cypridium insigne. The Abutilon we do not know.—E. W. G. Crataegus Crus-galli.—E. M. Calceolaria pinnata.—A. C. E. Salvia Horminum.

PRINCE OF WALES PEACH: P. S. A large well-flavoured variety, ripening on the open wall in mid-September. It is scarcely so good a fruit as Prince of Wales, which ripens at the end of the same month.

THE DOUGLAS FIR: A. We had thought that the technical name this tree should bear was settled according to the spirit of the Paris Nomenclature Congress, see art. 64; but, some of our transatlantic friends think otherwise. The question is purely one for the botanists to settle. In the meantime we recommend you to use the English name, which has remained, and probably will remain unaltered, whatever changes may take place in botanical nomenclature.

VINE LEAF: Munches. Your leaf from Grenoble is remarkably rich in colour, but unknown to us.

WEED-KILLER: A Subscriber. At this season, selecting a dry day for its application. It is better when applied in September.

COMMUNICATIONS RECEIVED.—Secretary Kent County Chrysanthemum Society.—C. K. Humbert.—W. T. T. D.—O. T.—F. R.—P. B.—W. B. H.—W. S.—F. W. B.—Kendal.—E. V. D.—Bieden.—W. E. D.—W. W.—R. B. W.—A. C. We await the further report of our correspondent.—C. H. R.—J. C. S., Erfurt.—S. E. C., Boston, Mass.—T. D., Brussels.—R. S. W.—E. C.—J. F.—E. E. T.—G. Mason.—C. A. M. C.—T. W.—C. B.—R. D.—J. O'K.—C. F.—S. P.—W.—Mubroom, next week.—J. Meers.—W. C. D.—W. G.—J. S.—C. R. P.—W. A. C.—T. H.—J. B. W.—T. W. H.—G. B. C.—S. James.—P. B. & Sons.—Colouel K. T. Clarke.

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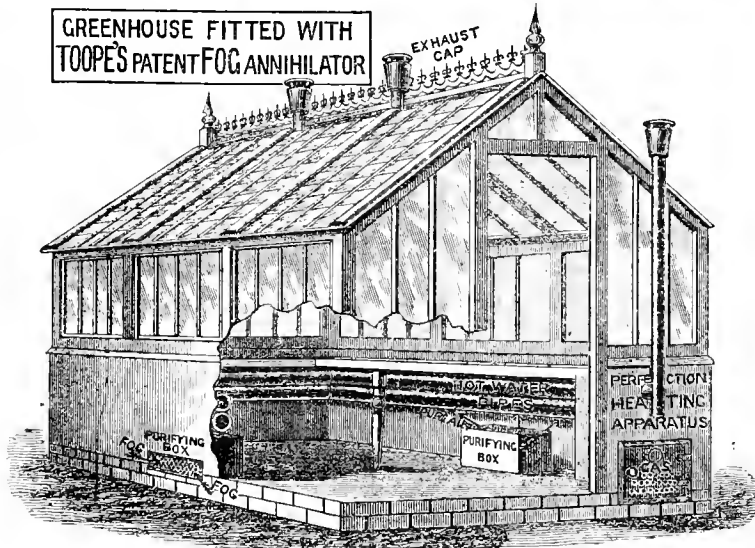
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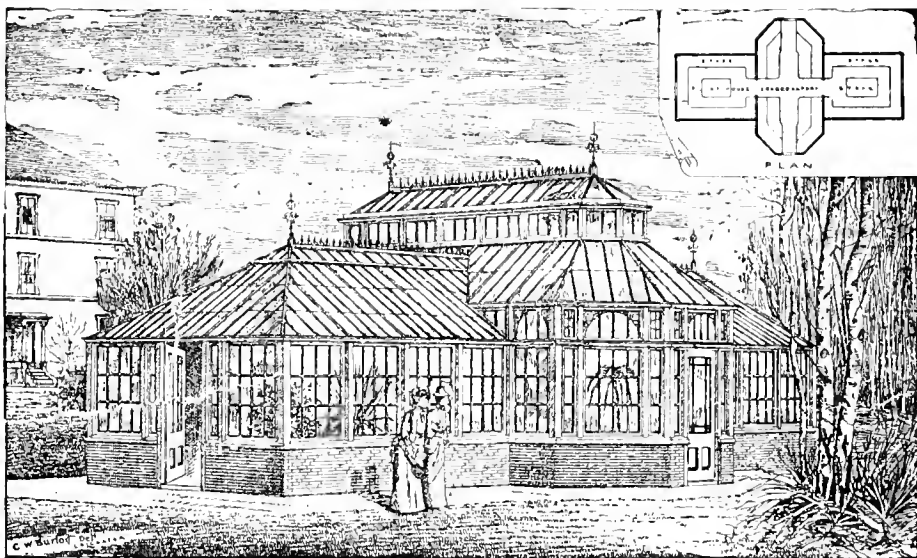
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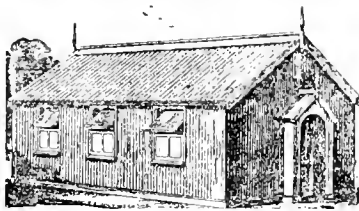
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transplanted with great care.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, on the Premises, The Nurseries,
Feltham, Middlesex, on THURSDAY, December 10, at
12 o'clock precisely, 1500 CUPRESSUS ERECTA VIRIDIS,
2½ feet; 2000 ENGLISH YEW, 2 to 4 feet; 1000 HOLLIES,
1000 named and HYBRID RHODODENDRONS, and a large
variety of CONIFERS, of which particulars will be given in
future Advertisements.

Friday Next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL on FRIDAY, November 20, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., by ORDER of
Mr. F. SANDER—

CECLOGYNE DAYANA GRANDIS.

The GARLAND ORCHID,

bigger and longer than Ceclogyne Dayana.

Offered for the first time.

Flower-spikes up to 5 feet, with nearly 100 flowers on
each spike.

GRAND PLANTS IN PANS and BASKETS, BREAKING
FREELY.

Friday Next.

BROUGHTONIA SANGUINEA.

Splendid leafy masses of this beautiful and rare rich crimson
Orchid, which blooms in spring, and lasts three or four
months. The plant is very difficult to import, and the
plants offered are in grand condition.

ONCIDIUM TRIQUETUM.

A pretty dwarf species, with elegant sprays of white and
blood-red flowers.

MESSRS. PROTHEROE AND MORRIS will
include the above in their SALE of ORCHIDS on
FRIDAY NEXT, November 20.

On view morning of Sale, and Catalogues had.

Friday Next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL by order of Mr. F. SANDER,

A GIANT CATELEYA.

GIANTIC MASSES. GIANTIC FOLDS.

GIANTIC FLOWERS. GIANTIC CONSIGNMENT.

Probably the most magnificent lot of Cattleyas ever intro-
duced into Europe.

And the only consignment that will be received.

Friday next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL by order of Mr. F. SANDER,
2,000 CATELEYA LABIATA (LINDLEY),
fine consignment just to hand.

The true old autumn-flowering Cattleya labiata from the Rio
Pinto, Swainson's hunting-ground, the only locality for the
true old plant. Re-imported by F. SANDER.
It is the Queen of Cattleyas.

It is guaranteed true.

Many plants in sheath will also be included in this sale.

Friday Next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL by order of Mr. F. SANDER,
SPATHOGLOTTIS ERICSONII,
A new and grand variety.

Friday Next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL, by order of Mr. F. SANDER,
A grand lot of
DENDROBIUM AUREUM ZELANICUM.
The true Ceylon variety. It is by far the grandest yellow
Dendrobe of the aureum section, and is a magnificent species.
It is now very rare.

Friday Next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL, by order of Mr. F. SANDER,
a fine lot of a CATELEYA found growing in the OLD
LABIATA district on the upper Rio Pinto.
The plants much resemble C. Schotteliana in appearance,
but the flowers are described as being white, while the lip is
crimson.

Friday Next, November 20.

MESSRS. PROTHEROE AND MORRIS
will SELL, by order of Mr. F. SANDER,
CYPRIPEDIUM INSIGNE, ALL UNFLOWERED.
These plants were collected from exactly the same locality
whence the lovely
CYPRIPEDIUM INSIGNE SANDERE
originated. This I guarantee.
Particular attention is called to this batch of Cypripedes.

Friday next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL, by order of Mr. F. SANDER,
a remarkable-looking EPIDENDRUM from the old LABIATA
district;
also a fine-looking BURLINGTONIA from the same region.

Friday Next, November 20.

MESSRS. PROTHEROE AND MORRIS will
SELL, by order of Mr. F. SANDER,
IMPORTED DENDROBIUM MCCARTHEE,
in splendid order.
Also many other fine and valuable ORCHIDS.

Reigate Nurseries (close to Reigate Station).

MESSRS. WHITE AND SONS are instructed
by Messrs. Ivery & Son, to SELL by AUCTION, as
above, on TUESDAY, November 17, 1891, at 12 o'clock pre-
cisely, a selection of young and thriving NURSERY STOCK
and FRUIT TREES, comprising about 1100 thriving Apple,
Pear, Plum, and Cherry trees, many in fruiting condition,
about 350 Dwarf and Standard Roses, of the best sorts, a
quantity of Flowering Shrubs, in varieties, a quantity of
Border Shrubs, Thunias of sorts, Cupressus, splendid lot of
Handsworth Box, Portugal and Common Laurels (various
sizes), Berberis, Privet, Sweet Briar, Pinus austriaca and ex-
celsa, Deodaras, special Irish Yews, Limes, &c. Cobnuts and
Filberts.

Catalogues may now be obtained at the Hotels in Reigate
and Redhill; of Messrs. IVERY AND SON, Nurserymen, Re-
igate and Dorking; and of the Auctioneers, 18, High Street,
Dorking; and on Fridays, at Leatherhead.

Re Lewis Phillips, Esq., Deceased.

BEAULIEU, WINCHMORE HILL.
The Choice Collection of STOVE and GREENHOUSE PLANTS,
consisting of Camellias, Specimen Azaleas, Chrysanthem-
ums, Orange Trees, Pot Roses, Ferns, Abutilons, Dra-
cenas, 1,000 Bedding Plants, 200 Strawberries in pots, and
other plants.

MR. ALFRED RICHARDS is favoured with
instructions to SELL the above by AUCTION, on the
premises, on WEDNESDAY, November 18, at 12 o'clock, in lots.
Catalogues of the Auctioneer, Tottenham, and 18, Finsbury
Circus, E.C.

Brecknock Nurseries, Camden Road, N.W.

LEASE of VALUABLE PREMISES, comprising Conservatory,
Seed Shop, Dwelling House, adjoining large Stable Pre-
mises and Greenhouse over, the Property forming a
splendid building site.

A valuable piece of LAND in rear of Hilldrop Crescent, with
frontage of 416 feet, and comprising about 1 acre, part
used for lawn-tennis, and remainder (with about 500 feet
run of glass) as Nursery.

Also long leasehold DWELLING-HOUSE and SHOP, No. 14,
Brecknock Road, let on repairing lease, at £80 per annum.

MESSRS. GEO. HEAD AND CO. will SELL
the above by AUCTION, at the Mart, Tokenhouse Yard,
E.C., on THURSDAY, November 19, 1891, at 1 o'clock.

Particulars, with Plan, and Conditions of Sale, may be had
of Messrs. INDERMAUR CLARK, AND PARKER, Solicitors,
1, Devonshire Terrace, Portland Place, W.; or at the Auc-
tioneers' Offices, 7, Upper Baker Street, N.W.

On Friday Next, November 20, 1891.

By Order of the Executors of the late H. J. Buchan, Esq., J.P.
WILTON HOUSE, SOUTHAMPTON.

Important Sale of GLASSHOUSES, ORCHIDS, GREENHOUSE
PLANTS, FERNS, &c., comprising 500 feet of Glass-
houses, including 60-foot Peach, Orchard, and Greenhouse;
36-foot Vinery, 45-foot Stove House, and others. 1,000 feet
of Iron Stove Tiling, 4 Saddle-back Boilers (by Lankester
& Son, Southampton), 12 large Garden Lights, 500
Fruit Trees, 350 Pots Chrysanthemums, 100 Pot Roses,
100 Orchids, 500 Greenhouse Plants, 40 Inantophyllum,
100 Single and Double Begonias, 14 dozen Maidenhair
Ferns, 1,000 Bedding-out Plants, quantity of Rondeletia,
Bougainvillea, Allamandas, Schubertia, Clerodendron,
Palms and Gardenias, 100 Rhubarb Roots, 10 Rows Sealale,
Number of Garden Tools, quantity of Ornamental Cork,
Several hundred feet of Brick walling, Shedding, Gates,
and other Building Material.

MESSRS. HUNT AND BANCE will SELL
the same by PUBLIC AUCTION, on the above date, at
11 o'clock precisely.

Catalogues may be obtained of the Auctioneers, at their
Chambers, 59, Above Bar, Southampton, and 16, Argyll Street,
Oxford Circus, London, W.

N.B.—On View the Day Previous and Morning of Sale.

Brox Nursery, Brox, near Chertsey, Surrey.

IMPORTANT SALE OF NURSERY STOCK.
MESSRS. WATERER AND SONS are instructed by Messrs. Gray & Sons to **SELL** by AUCTION, on **MONDAY** and **TUESDAY**, November 23 and 24, 1891, at 11 for 12 o'clock each day, the exceedingly well-grown **NURSERY STOCK**, which has all been moved within the last two years, and is in perfect order for removal. It comprises 10,000 Cupressus Lawsoniana, 1 to 5 feet; 2000 American Arbor-vitæ, 1 to 3 feet; 1000 English Yews; 15,000 Thuia Lobbi, 1 to 5 feet; 10,000 Weymouth Pine, 1 to 5 feet; several thousand Green and Variegated Hollies; 1000 Aucuba japonica, 1 to 2 feet; 21,000 Rhododendrons and Hybrid Seedlings, 1 to 3 feet; 500 Purple Lilacs, 1 to 6 feet; 11,000 Common and Portugal Laurels, 1 to 6 feet; 2000 Specimen Border Shrubs; a large quantity of Dwarf and Standard Roses, the choicest sorts; 1000 Standard Lime, Birch, Sycamore, Maple, Ash, and Poplar, 8 to 14 feet; 3000 Larch, 2 to 6 feet; 1000 cut back Cherry, 2 to 6 feet, &c., &c.

May be viewed seven days prior to the Sale, and Catalogues obtained upon the Premises, and of the Auctioneers, at either of their Offices, at Chertsey; opposite Booking Office, Weybridge Station; and opposite Station Entrance, Walton-on-Thames.

THOMAS B. JAMES (many years with Protheroe and Morris), will **SELL** by AUCTION, without reserve, on **TUESDAY** NEXT, November 17, at half past 11, A.M., at his commodious Sale Rooms, Bull Ring, Birmingham, twelve cases of well-selected Hyacinths, Tulips, Crocus, Narcissus, and other Bulbs from reliable farms in Holland; also 500 Spiræa japonica; 50,000 Kentia Fosteriana and Belmoreana seeds in splendid germinating condition; 1,250 Dwarf Roses in 25 varieties, fine strong plants; 500 Rhododendrons; several hundred Azalea Mollis, Aucubas, Magnolias, trained fruits; 300 grand clumps of Christmas Roses, Specimen Retinospora, Cupressus, and other Conifers, Box, Lily of the Valley (true Berlin Crowns), Liliun Harrisii, and numerous other things.

On view morning of Sale, and Catalogues free.
N.R.—SALES of **BULBS** and **PLANTS** are held every **TUESDAY** and **THURSDAY**.

THOMAS B. JAMES will **SELL** by AUCTION, on **WEDNESDAY**, November 25, at half past 12 o'clock, 403 lots of **ESTABLISHED ORCHIDS**, chiefly in bud and flower, by order of Messrs. Charlesworth, Shuttleworth, & Co., of Bradford and London, and others. On view morning of Sale, and Catalogues had.
Auction Rooms and Estate Offices, Bull Ring, Birmingham.

WANTED, a GROWER'S BUSINESS, chiefly Cut Flowers, under Glass—small but good, and capable of extension—that may be paid for wholly or partially from profits. Near London.—C. D. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, 14 miles from London, on the Bath Road, **HEATHROW FARM**, Harmondsworth, Middlesex, from Michaelmas next; contains 438 acres of good Arable and 44 of Meadow Land. Let as a whole, or divided into three or four Market Gardens. The House and Buildings are 3 miles from West Drayton and Hayes Stations (G. W. R.), also Feltham and Ashford Stations (S. W. R.). No Agents need apply.

For particulars, apply to **WALTER C. RICHMOND**, Wrotham Park Estate Office, Barnet, Herts.

TO BE SOLD a Bargain (through death) the LEASE of a capital **MARKET NURSERY**, with 11 good Glass-houses, all exceptionally well heated; also 200 good Pit Lights and Fixtures, capital Stabling and Dwelling House, standing on 1 acre. Rent, only £25 per annum. Apply to J. S., 2, Elm Villa, Town Road, Lower Edmonton.

ABOUT £350.—A first-class FLORIST, FRUIT, NURSERY, and GENERAL HORTICULTURAL BUSINESS, in the fast increasing and very popular town of Bournemouth, including Household Furniture, Stock, and every accessory for carrying on a really first-class Trade. This is a splendid opportunity for one wishing to go into business. Reason for leaving, and further particulars, to **WM. KNIGHT**, Auctioneer, Holdernhurst Road, Bournemouth.

LONDON, West-End.—Main Thoroughfare. Bold Corner position. **FURNISHING FLORISTS' and CUT FLOWERS BUSINESS.** Suit Lady. Lease 18 years. Price £550, or offer.—Full particulars of **PROTHEROE and MORRIS**, Auctioneers, 67 and 68, Cheapside, London, E.C.

600 feet of 3-inch HOT WATER SOCKET-PIPE, to be **SOLD** at half the Price of New. Also an 18 feet **ROCHFORD BOILER**, made by Kimmell, Southwark Street, in good condition, at best offer.
W. OWEN, 110, Stamford Hill, N.

J. WEEKS and CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers.
King's Road, Chelsea, S.W.

THE TOWER FURNISHING COMPANY (Limited), **SUPPLY GOODS ON HIRE**, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchaser have the choice of 100 Wholesale Houses. Call or write for Prospectus.
Address, **SECRETARY**, 43, Great Tower Street, E.C.

Landscaping Gardening.
ARTHUR M. KETTLEWELL (Author of the *Theory and Practice of Landscape Gardening*), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons.
Address, Titley, R.S.O., Herefordshire.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

ANTHONY WATERER invites from intending Planters an inspection of the following well-grown and finely-rooted **EVERGREENS**—

- ABIES CANADENSIS** (Hemlock Spruce), 5 to 8 feet.
- " **DOUGLASSI**, 6 to 12 feet.
- " **GLAUC**, 5 to 8 feet.
- " **HOOKERIANA** (Pattoniana), 3 to 6 feet.
- CEDRUS ATLANTICA**, 4 to 8 feet.
- " **GLAUC**, 3 to 6 feet.
- " **LIBANI** (Cedar of Lebanon), 4 to 10 feet.
- CUPRESSUS LAWSONIANA ERECTA VIRIDIS**, 4 to 8 feet.
- " **LUTEA** (Golden), 3 to 6 feet.
- JUNIPERUS CHINENSIS**, 3 to 10 feet.
- " **AUREA** (Golden Chinese Juniper), 3 to 8 feet.
- PICEA CONCOLOR**, 3 to 7 feet.
- " **GRANDIS**, 5 to 8 feet.
- " **LASIOCARPA**, 4 to 8 feet.
- " **MAGNIFICA**, 3 to 5 feet.
- " **PUNGENS**, 1½ to 4 feet.
- " **GLAUC** (Blue Spruce), 1½ to 4 feet.
- PINUS AUSTRIACA**, 3 to 7 feet.
- " **LARICIO**, 3 to 4 feet.
- THUOPSIS BOREALIS**, 4 to 7 feet.
- " **DOLABRATA** and **VARIEGATA**, 3 to 8 feet.
- THUJA LOBBII** (gigantea), 5 to 9 feet.
- " **OCCIDENTALIS LUTEA** (Golden), 3 to 4 feet.
- WELLINGTONIA GIGANTEA**, 3 to 7 feet.
- YEW**, Common, 3, 4, 5, and 6 feet.
- " Golden, of all sizes up to 10 feet, in various forms, size, and quality unequalled.
- " Golden Seedlings, 3, 4, to 8 feet.
- " Irish, 5 to 10 feet.
- " Golden, 3 to 6 feet.
- AUCUBA JAPONICA**, 2½ to 4 feet.
- BAMBUA METAKE**, fine clumps, 4 to 7 feet.
- BOX**, Green and Variegated, 3, 4, 5, and 8 feet.
- HOLLIES**, Common, from 3 to 10 feet.
- " **ALTA CLERENSE**.
- " **HODGINS** or **NOBILIS**.
- " **LAURIFOLIA**.
- " **MYRTIFOLIA**.
- " **SCOTICA**.
- " Yellow berried, and other sorts.
- " Variegated, of sorts, 3, 5, up to 10 feet.
- " Golden Queen, 4, 5, up to 10 feet.
- " Silver Queen, 4, 5, up to 10 feet.
- " Weeping Perry's (Silver Variegated), on straight stems, with heads of 10 to 15 years' growth.
- " New Golden Weeping.
- RHODODENDRONS**, 3 to 8 feet.

Knap Hill Nursery, Woking, Surrey.

FOREST TREES—FOREST TREES, COVERT PLANTS, &c.

JOHN PERKINS AND SON beg to call the attention of intending Planters to their large stock of the following, which for quantity and quality cannot be surpassed:—

- ASH**, 3 to 4, and 4 to 5 feet.
- ALDER**, 3 to 4 feet.
- BEECH**, 2 to 3 feet.
- BIRCH**, 2 to 3 feet.
- JUGLANS NIGRA**, 4 to 5 feet.
- LARCH FIRS**, 2 to 3, and 3 to 4 feet.
- OAKS**, English, 3 to 4 feet.
- PINUS AUSTRIACA**, 1½ to 2, and 2 to 3 feet.
- " **LARICIO**, 1½ to 2, and 2 to 3 feet.
- SCOTCH FIRS**, 1½ to 2, and 2 to 3 feet.
- SPRUCE FIRS**, 1½ to 2, and 2 to 3 feet.
- SYCAMORE**, 3 to 4 feet.
- BERBERIS AQUIFOLIA**, 1 to 1½, and 1½ to 2 feet.
- BLACKTHORNS**, 2 to 3, and 3 to 4 feet.
- DOGWOOD**, scarlet, 2 to 3, and 3 to 4 feet.
- HAZEL**, 2 to 3, and 3 to 4 feet.
- HORNBEAM**, 2 to 3, and 3 to 4 feet.
- LAURELS**, common, 1½ to 2, 2 to 3, and 3 to 4 feet.
- " *Caucasica*, 1½ to 2, and 2½ to 3 feet.
- " *rotundifolia*, 1½ to 2, and 2½ to 3 feet.
- " *Portug.*, 1½ to 2, and 2 to 3 feet.
- PRIVET**, Evergreen, 1½ to 2, 2 to 3, and 3 to 4 feet.
- PRUNUS MYROBALANA**, 2 to 3, and 3 to 4 feet.
- ST. JOHN'S WORT** (*Hypericum*), strong transplanted.
- QUICK** or **WHITETHORN**, strong and extra strong transplanted. Special offers on application.

52, MARKET SQUARE, NORTHAMPTON, Nurseries, Billing Road.

CHRYSANTHEMUMS, true to name. This collection includes the very best varieties only. Several silver cups and hundreds of 1st prizes were taken by my customers last year. For price of cuttings and plants see **CATALOGUE** of
W. ETHERINGTON, Swanscombe, Kent.

Many Acres of Lilies of the Valley!
T. JANNOCH, Largest Grower of **LILIES OF THE VALLEY** in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

DOBBIIE'S CATALOGUE and COMPETITORS' GUIDE for 1892.—25th Annual Edition, 160 pages, illustrated. Described by one of the greatest authorities in England as "the most useful list published in the trade." Will be ready on January 1, and will be sent gratis then to all who apply for it before Christmas, and enclose 3d. to cover postage.—**DOBBIIE AND CO.**, Seed Growers and Florists, Rotbeay, Scotland.

EXHIBITIONS.

YORK CHRYSANTHEMUM SHOW.—The **TWELFTH ANNUAL SHOW** in the Fine Art Exhibition Building will be held on **NOVEMBER 18, 19, and 20, 1891.** £150 offered in **PRIZES**, in liberal proportion, for Plants, Cut Flowers, Fruit and Vegetables. Entries close November 11. Schedules may be had from the Secretary, **J. LAZENBY**, 13, Finsbury, York.

TWICKENHAM HORTICULTURAL and COTTAGE GARDEN SOCIETY.

The **ANNUAL CHRYSANTHEMUM and FRUIT SHOW** of this Society will be held in the Town Hall, Twickenham, on **TUESDAY** and **WEDNESDAY**, November 17 and 18. Entries must be sent in on or before Friday, November 13. Schedules, and all information, may be obtained on application to the Hon. Sec., **MR. JAMES J. G. PUGH**, 2, Heath Road, Twickenham.

HULL and EAST RIDING CHRYSANTHEMUM SOCIETY.

EIGHTH ANNUAL SHOW, HULL.
WEDNESDAY and THURSDAY, November 18 and 19.
Class 1, £17 10s. for 24 Incurred; and Class 2, £17 10s. for 24 Japanese. Entries close November 11.
Schedules from the Hon. Secretaries,
EDW. HARLAND, Manor Street, Hull.
JAMES DIXON, 2, County Buildings, Hull.

SCOTTISH HORTICULTURAL ASSOCIATION.

GRAND CHRYSANTHEMUM EXHIBITION.
NOVEMBER 19, 20, and 21.
Schedules and all particulars on application to the Secretary,
ROBERT LAIRD, 17, South Frederick Street, Edinburgh.

ROYAL BOTANIC SOCIETY of MANCHESTER.

The **ANNUAL EXHIBITION of CHRYSANTHEMUMS** will be held in the **TOWN HALL**, Manchester, on **TUESDAY** and **WEDNESDAY**, the 24th and 25th inst. For Schedules apply to the undersigned,
BRUCE FINDLAY, Old Trafford, Manchester.

SOUTH SHIELDS CHRYSANTHEMUM and WINTER FLOWER SHOW.

EXHIBITION will be held on **WEDNESDAY** and **THURSDAY**, November 25 and 26, in the Royal Assembly Hall, South Shields. **PRIZE MONEY** over £100; £10 for 35 blooms.
BERNARD COWAN, Hon. Secretary.
Harton, South Shields.
N.B.—The Hall illuminated by electricity.

GRAND FLORAL FETE, YORK.

June 15, 16, and 17, 1892.
PRIZES £300. Schedules ready in January. Apply to
13, New Street, York. **C. AS, W. SIMMONS**, Sec.

ORCHIDS.
CATLEYA TRIANÆ,
FROM A NEW DISTRICT.

THE LIVERPOOL HORTICULTURAL CO.
(**JOHN COWAN**), Limited,

Have just received a large and splendid importation of **CATLEYA TRIANÆ**, from an entirely new district. The Collector discovered the plants during the blooming season, and he states that there are an unusually large number of the pure white forms amongst them. The entire lot looks distinct. Inspection of these and also of the Company's immense Stock of Established, Semi-established, and Newly-Imported **ORCHIDS** is earnestly invited.

Full particulars on application to the Company,
THE VINEYARD & NURSERIES,
GARSTON, near LIVERPOOL.

SMALL SHRUBS and CONIFERÆ.—Abies orientalis, 4-yr., 40s. per 1000; Cupressus macrocarpa, 1-yr., 30s. per 1000; C. Lawsoniana, 1 foot, 40s. per 1000; C. erecta viridis, 8 to 9 inch, 30s. per 1000; C. nana, 9 inch, 8s. per 100; Icy, Irish, 2-yr., 70s. per 1000; Lilac, purple, 2-yr., 30s. per 1000; Laurestinus, 6 to 8 inch, 70s. per 100; Oaks, evergreen, 3-yr., drilled, 10 inch, 50s. per 1000; Pinus obovata, 2-yr. transplanted, 40s. per 1000; P. Nordmannia, 2-yr. transplanted, 60s. per 1000; P. nobilis, 2-year transplanted, 6s. per 100; Privets, oval, 9 inch, 8s. per 100; ditto, 10 to 12 inch, 11s. per 1000; Retinospora plumosa, 8 inch, transplanted, 10s. per 1000; R. aurea, 6 to 8 inch, 8s. per 100; R. squarrosa, 8 inch, transplanted, 40s. per 1000; Rhododendron ponticum, transplanted, 4 to 6 inch, 40s. per 1000; 6 to 9 inch, 55s. per 1000; Thuia Lobbi, 10 to 12 inch, 30s. per 1000; 15 to 18 inch, extra, 40s. per 1000; Veronica Traversii, 8 inch, 7s. per 100; V. Pinguifolia, 6 inch, 8s. per 100; Yew, English, 2-yr., 1-yr. transplanted, 20s. per 1000; Irish Yew, 8 to 9 inch, 8s. per 1000.

GARLIES MITCHELL, Nurseryman, Stranraer.
150,000.—Special Offer of Kentias.
W. ICETON has a large quantity of the above to offer, very reasonable, at from £1 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well-established, at £30 per 1000.
W. ICETON, Putney, S.W.

BARGAINS IN BULBS.—
 PHEASANT'S-EYE NARCISSUS, good, 6s. per 1000;
 SNOWDROPS, YELLOW CROCUS, BLUE SCILLAS, and
 STARS OF BETHLEHEM, 8s. 3d. per 1000, free; SPANISH
 IRISES, sweet-scented, blue, 14s. per 1000, free; GOLD CUP
 IRISES, very pretty, 30s. per 1000, free.
 DALCORN AND CO., Bulb Growers, Spalding.

Trade Offer of Large Palms.
 W. ICEYON has a large Stock of the lead-
 ing kinds of Decorative PALMS, from 6 to 25 feet
 high, fit for Conservatory and House Decorations; Dracaenas,
 Bamboos, & Foliage Plants. Lowest Prices quoted on application.
 W. ICEYON, Putney, S.W.

Cheaper than Ever.
ROSES! ROSES!—A Speciality. Plant at
 once. 30,000 Dwarf H.P.s, in all the best exhibition
 varieties, true to name, grand bushy plants, well-rooted. Send
 for sample doz-n, 6s. Carriage paid. 50 in 100 varieties, 21s.,
 or 30s. per 100, our selection. Descriptive Catalogue, with full
 cultural directions, free on application. Trade supplied.
 A. J. AND C. ALLEN, Rose Growers, Heigham, Norwich.

Cheap Palms! Palms!! Palms!!!
 J. W. SILVER invites inspection of his
 immense Stock of PALMS, the Cheapest in the Trade,
 of KENTIAS of all kinds; CORYPHA, SEAFORTHIA,
 COCOS, PHOENIX, and many others. LIST of prices on
 application.
 Streatham and Norbury Nurseries, S.W.; and Marlborough
 Mansions, Victoria Street, Westminster, S.W.

CHRYSANTHEMUM CUTTINGS,
 2s. 6d. per 100, of the following sorts:—
 WHITES:—Elaine, Ethel, Sœur Melanie, Fleur de Marie,
 Princess of Teck, and Madame Desgrangs.
 YELLOWS:—Chevalier Domage, and Peter the Great.
 BRONZE:—Source d'Or.
 WANTED.—RASPAIL GERANIUM CUTTINGS.
 W. E. SWIFT, Skegness, Lincolnshire.

PRIVATE COLLECTION of ORCHIDS on
SALE.—A small private collection of Orchids on Sale in
 North Lancashire, either in one lot, or in lots to suit pur-
 chasers, comprising Odontoglossum crispum in fine varieties,
 Cypripedium choice and beautifully grown, Dendrobium,
 Cattleyas, and a miscellaneous lot of cool and tropical Orchids.
 Established for eight years.—Apply for particulars, JAMES
 ANDERSON, 26, Cooper Street, Manchester.

Game Covert.
 GEORGE FARNSWORTH has to offer a
 large quantity of PRIVETS, true Evergreen, 1-yr., 5s.
 per 1000; do., 2-yr., very fine, 8s. per 1000.
 RHODODENDRONS, Hybrid and Ponticum, mixed, 3-yr.
 and 3 yr. bedded, 25s. per 1000; do., 6 to 9 inches, 60s. per
 1000; extra transplanted, very bushy, 10 to 15 inches, 120s.
 per 1000; and 18 to 24 inches, 200s. per 1000.
 Samples on application at the Nurseries, Matlock.

FOR SALE.—A quantity of LAVENDER
 CUTTINGS, SEDUM CALIFORNICUM, RASPBERRY
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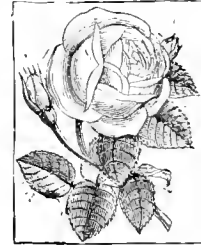
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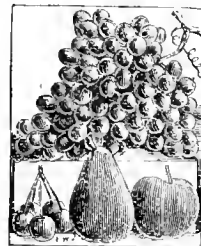


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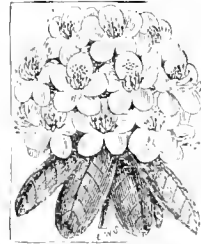


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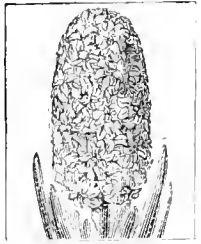
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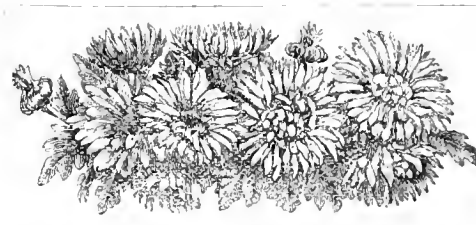
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 14, 1891.

CHRYSANTHEMUM SPORTS.

[A paper read at the Conference of the National Chrysanthemum Society, November 10.]

THE Secretary has done me the honour to ask me to say something about Chrysanthemum sports from the botanical point of view. I had much hesitation in acceding to his request, on the ground that I knew but little about them; but as I was aware that botanists, as a rule, are equally in the dark, I ventured to accept the responsibility, with the hope of gaining information, if I was unable to impart much of any importance.

Of course, what we all want to know is, what are the causes which bring them about? The answers to this question are at present little more than guesses, but they would be extremely valuable practically if we knew them. Thus, Dr Masters writes:—"Whoever will investigate the cause of these sudden outbursts of local variation must, of course, sedulously examine each case for himself, according to the measure of his ability and of his opportunity. The circumstances, the history, the progress, the anatomy, of each particular sport must be investigated, both absolutely, and in relation to similar outgrowths in other plants. Until this is done, and it has not been done yet, any explanation as to the cause of the phenomenon must be a matter of speculation."* The only way likely to lead to an interpretation of the origin of sports is by means of such careful observations as Dr. Masters suggests, and by experiments. Unfortunately, this is just the means which florists and practical cultivators of all sorts apparently have no time for carrying out. It requires great patience, and in the end any particular series of experiments may lead to no practical results. The experimenter must work in faith, and be in nowise disheartened if no result immediately follow. However, it often happens that while one is investigating with one end in view, something quite unexpectedly turns up, which may prove to be of great practical value in some quite different way. For example, while experimenting at Chiswick on the Jensenian method of moulding-up Potatos, in order to protect the tubers from the spores of the *Phytophthora*, the confirmation was furnished that whole Potatos used as seed gave vastly better results as a crop than when cut portions were employed.

With reference to our special subject to-day, such observations as have been recorded upon the appearance of sports in Chrysanthemums are suggestive of one or two practical questions, which may or may not be useful, which I will mention as occasion requires.

* Bad Variations or Sports, *Gardeners' Chronicle*, January 10, 17, 24, and February 21, 1891.

Chrysanthemum sports may be grouped under the two heads of Colour and Form. First, with regard to colours. Botanists are pretty well agreed in their belief that yellow was the primitive colour of true flowers, which were first evolved in the missing links between Gymnosperms, *i.e.*, Firs and their allies, and Angiosperms, which includes all other flowering plants. When, therefore, a coloured or white Chrysanthemum sports to yellow, which is frequently the case, it may be regarded as a reversion to the typical or original colour indicated by the name Chrysanthemum or Golden-flower. Hence, it is not surprising to find such reversions to be common; but Mr. Davis remarks that a yellow never sports to a white.*

The nearest approach to this that I am acquainted with, is Madame Desgranges (introduced by Mr. Ware in 1882). The flowers open of a sulphur colour, but change to pure or nearly pure white.†

Another writer, Mr. Forsyth, states:—"It appears that Lilac flowers are the most sportive, and that they frequently change to yellow . . . also that nearly all the colours are capable of sporting into white . . . It may be pretty safely said that any colour is capable of sporting to any other colour that is within the range of colours proper to the Chrysanthemum."

Similar experiences were met with abroad. M. Carrière records the fact that in 1864 the white-flowered Vesta produced yellow flowers. In 1856, Surprise, with rosy flesh-coloured flowers sported to a deep rosy-lilac called Gain of the Museum. He also mentions that in 1862, this sport bore on one branch pure white flowers, on another flowers which were half-rose and half-white. Both varieties were permanently retained by budding. This last case is interesting, as it has been thought that such sports as the last mentioned could not be fixed.

A white variety may be called a lapse from some coloured condition. The power to reproduce the colour may often, perhaps always, in white varieties raised by cultivation, be retained in the blood, so to say; so that, it is not surprising as a rule, to find seedlings from white varieties of many kinds of flowers in general, to revert to the parent colour, or else be very various in their tints.

Besides seedlings, a whole plant may suddenly lose the colour of its flowers by transplantation, and appear white-flowered in the next season. Thus, blue Violets transferred from the Isle of Wight to a bed of red sand in Sussex, became white in the following year. In two years' time, however, they reverted to blue again. As another instance, a white variety of the Everlasting Pea was transplanted from one garden in St. Albans to another, in which it permanently reverted to the common red type. *Orchis pyramidalis* is very common in Malta, and has white flowers till May; those that subsequently open are red. Lastly, a blue-flowered Hydrangea, growing at Southampton, became red when transported to Bedford.

As instances in Chrysanthemum sports, it will be sufficient to add the case of Cedo Nalli (white), which gave rise to yellow, lilac, brown, and white sports; while Queen of England (blush) has sported into six different colours, as well as white, namely, two golds, two bronzes, a rose, and a primrose.

Regarding yellow as the primitive colour, and white as the neutralisation of all colour, we can understand how any other may revert to yellow, and all may lapse into white.

Now, the colours of flowers are due to chemical substances, which are, in the main, undoubtedly organised products—*i.e.*, made by the plant itself.

Nevertheless, as high or low nutrition, prolonged and clear sunlight, as well as temperatures, have marked influences upon the colours of flowers, if he cannot alter the sunlight, the florist has one means, at least, at his disposal—namely, the ingredients of the soil.

As an example of marked atmospheric influences is the well-known fact of the greater brilliancy of flowers in high latitudes and altitudes. MM. Bonnier and Flabault have shown that this is indirectly due to the enhanced assimilative powers of the foliage in consequence of the prolonged sunlight, by means of which the flower-making and flower-colouring materials are increased.

Oxidisation under the action of light has been thought to be another cause of change in colour, as in the case of the changeable Hibiscus, which is white in the morning, pink at noon, and bright red by sundown. Again, a species of Phlox with pink flowers, is of a light blue colour at first at 5 A.M., but by 9 or 10 A.M. acquires its proper colour. The clump which catches the sun's rays first being the first to change, as is also the case with Chrysanthemums. Thus one of the early varieties, called the Changeable Bull, introduced by Reeves in 1824, commences yellow, but passes into a pinky-orange as the flower expands. Again, the magnificent Etoile de Lyon bears two kinds of flowers, the crown or single buds being nearly a pure white, while terminal buds are described as a lilac-rose. One cannot as yet assign any definite cause to account for these differences, but can only suggest that they may be due to some obscure differences in nutrition.

Mr. Lowe describes Titania as a sport from the white Pompon Modèle. It has blooms which are white at first, and then become pink, with the centre of the bloom remaining white.* Again, Mr. Buss speaks of Lady Dorothy as being of a pretty tint of fawn flushed with pink. When grown for late flowering, and with all its flower buds left on, it comes more of a yellow colour than fawn, apparently indicating a tendency to reversion.

That climatal conditions, over which one has no control, may bring about sports has been suspected, from the well-known fact that sports often appear simultaneously at various places and in the same season. Thus, the lilac-purple Baronne de Prailley threw a fine brownish-orange sport (Carew Underwood) at two or three places simultaneously, and in the same form.† Mr. Molyneux supplies another illustration, in the case of Boule d'Or, which produced a chestnut-coloured sport both in Hants and Lancashire.

The suggestion at once arises that such simultaneous sporting may sometimes, at least, be due to the common practice of florists "sending out" a large batch of a new variety, all over the country and abroad, in one season. And, if such individual plants sported immediately afterwards, one might suspect that the power was inherent in the parent from which all the cuttings sent out had been derived; but as Mr. Davis observes, "a variety may pass many years without showing any inclination to sport, and then, all at once, sports appear in all directions."‡ When such is the case, the above idea seems to be negatived. So that this fact certainly suggests the sport to be due to some climatal conditions prevailing uniformly over the various districts where the sports occurred.

It has also been observed by Mr. Payne that nearly all the early imported varieties from China were much more inclined to sport than the majority of those since raised from seed. The old purple, the expanded light purple, the quilled light purple, the curled lilac, and the buff, seem to have been those most sportive in olden times.

Now, if the above facts warrant one in regarding climate as an inciter to sporting, we have an obvious means of encouraging, if not of actually producing them, by frequently introducing plants from as different a climate as possible from our own—say, Jersey, Portugal, South of France, Italy, and America, in which countries our more stable sorts

will, perhaps, reward the florists of those countries by sporting with them in return.

I remarked that the colours of flowers are due to chemical substances organised by the plant itself; and Professor Sachs has come to the conclusion that it is the ultra violet rays of the solar spectrum which have some special power in making flower-substances. We know very little about these particular rays in their relation to plant life; but judging from the fact that flowers so often fail to be produced in even very moderate shade, coupled with the intensity of colours in high alpine flowers, which enjoy a clear uninterrupted atmosphere, we can at once realise the importance of bright and prolonged sunlight. It must be remembered, however, that light itself has little to do with the actual making of the flowers. This depends entirely on the foliage; so that for fine flowers you must see that the foliage can do its work to perfection; especially that the surface of the leaf is not begrimed with soot, &c., but well cleansed, if necessary, with soap-and-water. G. Henslow, M.A., F.L.S.

(To be continued.)

NEW OR NOTEWORTHY PLANT.

NERINE PANCRATIODES, Baker, n. sp.*

This is a very distinct and interesting new species of Nerine, which has just been imported from Natal by Mr. James O'Brien. The structural peculiarity which it shows, is having small square bifid scales between each of the filaments, as in *Coburgia* or *Pancratium*. It is this peculiarity which has suggested the specific name. Its horticultural characters are middle-sized, pure white flowers, with uncrisped segments, and very slender, nearly terete leaves. My description is taken from material kindly sent by Mr. R. A. Todd, of Honeyden, Foot's Cray.

Leaves contemporary with the flowers, bright green, 15 to 18 inches long, $\frac{1}{10}$ to $\frac{1}{12}$ inch diameter, subterete in the lower half, nearly flattened towards the tip, glabrous. Scape robust, 2 feet long. Umbel 12 to 20-flowered, centripetal; spathe-valves two, small, lanceolate; pedicels stiffly erect, very pubescent, 1 to $1\frac{1}{2}$ inch long. Perianth pure white, $\frac{3}{4}$ to 1 inch long; segments oblanceolate, not crisp, $\frac{1}{4}$ inch broad. Stamens scarcely half as long as the perianth, slightly declinate; filaments tinged pink, alternating with bifid square scales; anthers small, oblong, black. Ovary $\frac{1}{8}$ inch diameter, pubescent, deeply 3 lobed. Style very short when the anthers are bursting J. G. Baker.

THE "JAM CROP" OF 1891.

INTERESTING and profitable as are the tables annually published in these pages in connection with the fruit crops of Great Britain and Ireland, they would probably be of still greater value could they be supplemented by such returns as that noted above, the "jam crop;" but, to obtain these, manufacturers would have to be consulted, and we are very well aware that most of them object to the publication of that, which, as they put it, "the benefit of which to themselves they do not see." Perhaps they are right—possibly they are wrong; at any rate, what we have termed the jam crop of the present year must be a very large one, and in humble life will run margarine very closely in the race for economic food supply. The taste is a growing one, and extends with the population. London adds 60,000 souls to its great total every year: given four in a family, then $60,000 \div 4 = 15,000$ families. Suppose these consume 1 lb. of jam per

* *Nerine pancratioides*, Baker, n. sp.—Folius synanthus sesquipedalibus viridibus angustissimis dorsum subteretibus sursum subplanis; scapo robusto bipedali; umbellis centripetalibus 12–20 floris; spathe valvis parvis lanceolatis; pedicellis longis strictis dense pubescentibus; perianthio albo submetallicis segmentis oblanceolatis planis; staminibus perianthio duplo brevioribus, antheris parvis oblongis nigris, filamentis squamis quadratis bifidis alternantibus; stylo brevi.

* *Gardeners' Chronicle*, January 12, 1889.

† See the above was written, Mr. Owen informs me he has experienced this exceptional phenomenon.

‡ *Gardeners' Magazine*, April 20, 1872.

* *Gardeners' Chronicle*, 1873, p. 242.

† R. D., *Gardeners' Chronicle*, December 7, 1889, p. 656.

‡ *Gardeners' Chronicle*, 1889, p. 40.

week, then the consumption for the twelvemonth is represented by 785,000 lb. = (say) 350 tons per annum. The consumption per week for each family is admittedly low—but even at this figure what an enormous mass of wholesome sweetness must enter into the food bill of 5,000,000 men, women, and children—a million and a quarter one pound jars per week, or, roughly 625,000 tons a year! You can do much with figures. Quite an enormous sale of "bread and jam" made in all the busy quarters of London—in the immediate neighbourhood of factories and workshops. The keeper of one little "general" shop informed the

persons, young and old, for various terms; and have used nearly 58,000 glass bottles and jars in getting this jam ready for market. How the genial countenance of the once-famous tenant of Tiptree Hall, "Alderman and Sheriff" Meehi, would brighten at such an enumeration as this, and how he would have lectured his brother agriculturists on jam as his theme! But not only this "sweetness" is manufactured by this young and enterprising company; as with nearly all other fruit preservers, some dozen other commodities are put upon the market—not all the eggs being put in one basket. But it would be waste of space to occupy attention further with this

Its flowers are "of one uniform purple tinged with violet, with some rich crimson veins on the lip. . . . The excessive lobing of the petals and lip, and the comparatively small size of the latter," distinguish it from *Cattleya labiata*. Ten years after its first publication, Reichenbach described the same plant under the name of *Lælia Boothiana*, it has also been known as *L. Rivieri* of Carrière, and as *Bletia Boothiana*; whilst in Messrs. Veitch's indispensable *Manual*, from which we take some of these particulars, it is named *Lælia lobata*. Messrs. Veitch tells us that it grows in the neighbourhood of Rio, high up on a bare rock facing the sea, and in full sunshine from morning till night, a fact of which cultivators should take note, as this species, though often growing vigorously under the usual cultural treatment of *Cattleyas* and *Lælias*, often fails to flower. Messrs. Veitch consider it to be a near ally of *L. crispata*. Its season of blooming is April and May.

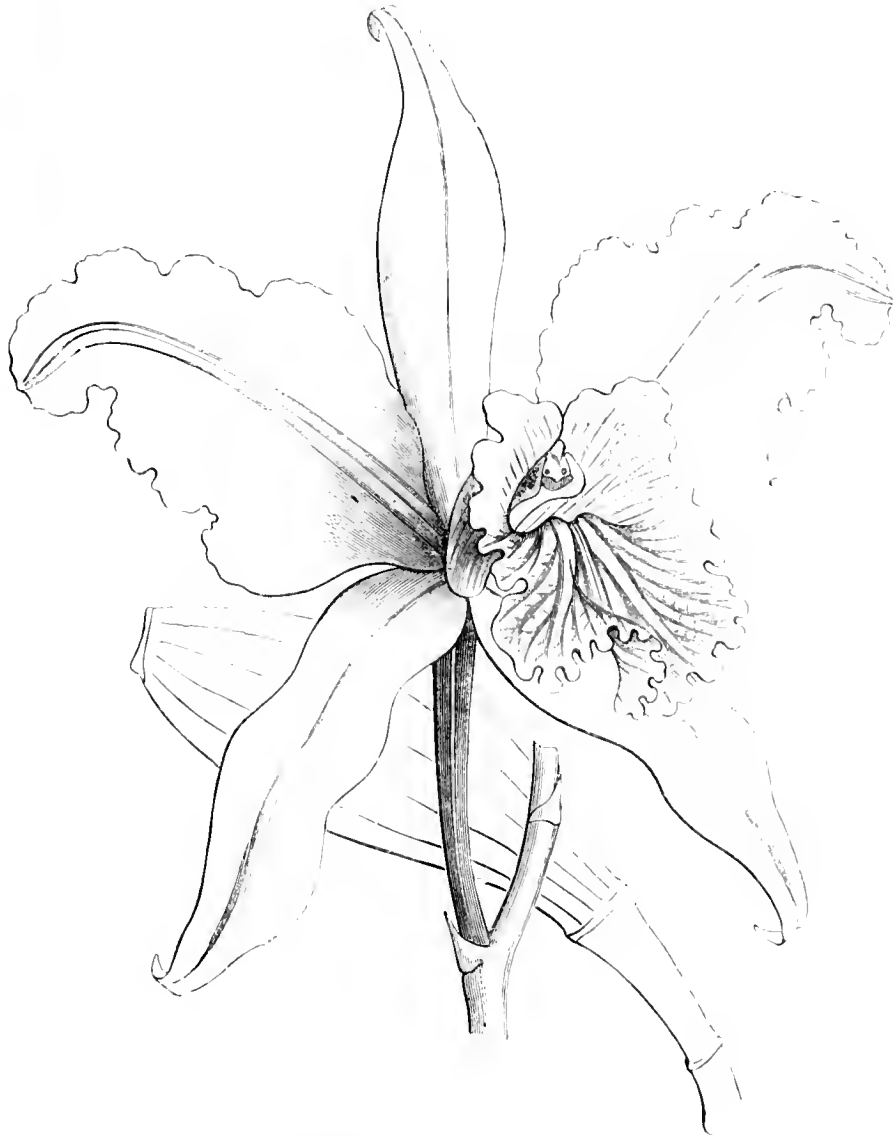


FIG. 78.—*LÆLIA BOOTHIANA*: FLOWERS, PURPLE.

writer the other day that she sold over 500 slices of jam every day—there were plenty of margarine slices as well, but the "jam" was preferred. It would appear then that the supply can hardly be overdone—as yet, and the amount of labour called into use in the manufacture and marketing is very great. There are the regular field and orchard workers, those concerned in harvesting and manufacturing, in the manufacture of glass and earthenware bottles and jars, in fancy printing and packing-cases, and in a lot of other industries. Here is a little item worth noting, as giving point to our remarks all round. The Britannia Fruit Preserving Company at the world-renowned Tiptree, in Essex, have this year harvested over 200 tons of fruit—have made 100 tons of jam, in which they have used 50 tons of sugar; in producing all this have employed 400

matter at present; the reader, landowner, grower, manufacturer, speculator, vendor—whichever he may be—can readily read for himself the lesson sought to be inculcated by us in thus noting the "jam crop" of the present year.

LÆLIA BOOTHIANA.

Now that the Orchidic world is excited over the re-discovery of the long-lost *Cattleya labiata*, it may be of interest to call attention to another Brazilian form which is evidently allied to the true *labiata*, though technically a *Lælia*, and which is nearly as great a stranger to our collections as that species was until lately. The plant was originally introduced in 1840 from Brazil by Messrs. Loddiges, and described by Lindley as *Cattleya lobata*.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM AT ST. ALBANS.

ONE hundred and fifty spikes of flowers of this plant are now to be seen at Messrs. F. Sander & Co.'s, and they make a brave show. The flowering specimens of this coveted plant previously in the country might be counted on the fingers of one hand; yet a large number of them may now be seen arranged with other choice and showy Orchids in one of the long houses. As was indicated by the life-sized drawing shown when the plant was offered for sale at Messrs. Protheroe & Morris' Rooms, there is a great range of colour in the blooms of this species, and even the flowers of the first batch of plants exceed the promise in this direction, for the Elephant Moth *Dendrobium* exhibits as much variation as even the favourite *Odontoglossum Alexandræ*, and, like it, it will probably have a long run of popularity.

First, it may be as well to say that it proves to be the true plant, and not *D. P. Statterianum*, which always has narrower sepals, narrower and longer lip, devoid of that broad square formation at the upper part of the front lobe; indeed, there are characters so well marked as to render the two botanically distinct. The rich sprays of this plant represent it in every shade and combination, from white to dark crimson, and always in such beauty as to render the task of selecting the best variety a difficult matter. Here is the typical rosy-petalled form of Baron Schroder's original plant, and beside it a still richer coloured form with fifteen flowers on a spike; and glancing along the bank a few of the leading types may be selected. The first to catch the eye is a large pure white form, the only colour which can be observed on closer inspection being some delicate pink veining in the lip; this will be one of the cardinal types. Then comes a delicate variety, with blush sepals and blush petals, veined with rose, and a rose-coloured lip, with crimson centre, the crimson extending in delicately-traced lines to the front lobe of the lip; passing on we find one with flowers richly coloured all over, calling to mind the colours of a fine *Cattleya Bowringiana*, and then we find in contrast a large-flowered form which may be called a pure white, with only the outer halves of the segments delicately tinged with pale lilac. Another has white sepals marbled with rose, and bright rosy-crimson petals with dark crimson lip. One of the prettiest has very delicate white flowers with a pale rose-flush over them; and, indeed, although there are some highly-coloured forms, it is likely that the light and white varieties will be the favourites—but where there is such a wide range all tastes will be satisfied. The plant increases very freely, so much so, that the supposed eyeless pieces, set aside when the importation was unpacked, are now breaking freely along the pseudobulbs, after the manner which seems to be habitual to it.

With the above-mentioned also came, as a single

specimen it is feared, another new Dendrobe, which is now flowering at St. Albans. It is a very beautiful species, with pseudobulbs about 3 feet, and elegant sprays of flowers, each about 2 inches across. The sepals are like those of *D. phalaenopsis*, white freckled with rose. The petals, which are as narrow as the sepals, are bright rosy crimson, the handsomely-formed lip greenish at the base, and with the front and side lobes of a rich rosy-crimson, and down the lip runs several very distinct wavy ridges. It is a very handsome species.

Also arranged with the new Dendrobe, the whole forming a splendid sight, may be mentioned a specimen of the beautiful *Cymbidium cyperifolium*, a very rare species, with yellowish sepals and petals lined with reddish-brown, and a large pure white lip, with purple lines on the side lobes, and purple spots on the front. Flowering also for the first time are many plants of a new form of *Calanthe vestita*, with the stout habit of *C. v. gigantea*, or *igneo-oculata*, but with flowers $2\frac{1}{2}$ inches across, pure white, with lemon-yellow eye, very distinct, and a grand flower for cutting. The St. Albans importation of *Vanda coerulesa* is also producing some fine things, which are very effective in the display. One is probably the best and richest-coloured variety yet flowered. Its flowers are large, and nearly circular, dark blue, closely chequered, and with only white spotting showing through, and the reverse side of the flower is as richly coloured as the front. Among their importation of *Cypripedium insignemontanum* many fine things have flowered, and at present there are four quite distinct, and these, with some plants of the showy *C. Maynardii superbum* ×, some good *C. Spicerianum*, among which the form that Mr. Sander distributed as *C. S. magnificum*, is the best. The new and distinct *C. Malyanum* ×, a very singular and pretty form of *C. Lecanum* ×, and other *Cypripediums* aid the show, together with some *Lycastes*, white and coloured, and many other handsome things. In their quarters, suspended over the rock, are some scores of specimens of the white form of *Laelia anceps*, covered with spikes.

CATLEYA LABIATA, Lindl.

A collector of Messrs. F. Sander & Co., of St. Albans, has sent home some well-dried flowers from the locality whence the recent importations have been sent, one of which has been presented to Kew, and the others I have examined. They are precisely identical with those which have been mentioned in these columns on several occasions recently, and it is therefore evident that this useful autumn-flowering *Cattleya* will soon be as common in cultivation as formerly it was rare. Viewed in the light of recent events, one cannot cease from wondering how it has eluded the search of so many collectors for so long a period. *R. A. R.*

ORCHIDS AT BLETCHLEY PARK.

While in the district of Bletchley a week or two ago, I made a special visit to Bletchley Park, the magnificent country seat of H. Leon, Esq., M.P. Through the kindness of the gardener, Mr. Hyslop, I was permitted to inspect the collection of plants. As I have a weakness for Orchids, my attention was naturally directed to these plants in a special degree. We are all well aware that the present season of the year is a dull one for Orchid bloom, and, what with the boisterous weather to which we have been subjected of late, it renders it doubly hard to get anything like a good display. I was not disappointed by any means, and what I saw I was delighted with, because it was of a fine quality. My attention was specially fixed on a batch of *Cattleya Dowiana aurea*, several of which were in flower; most gardeners will agree with me, I fancy, when I say that this Orchid is by no means an easy one to flower, it is so much apt to run away into new growth as soon as a bulb is completed. Mr. Hyslop has devised artificial means, however (which he imparted to me as a secret, and which I am consequently bound to respect as such), to make the

plants flower regularly every season. The process by no means injures the plants; on the contrary, it has a tendency to strengthen them, and make them produce flowers of much finer quality than any I have hitherto seen. The colour, form, and marking of these flowers were superb, and I have one of them on the table now as I write, though cut fourteen days ago. Mr. Hyslop is particularly successful with his *Cattleyas*, and I saw several good forms of *Cattleya Gaskelliana* flowering at this late period. A fine collection of *Cypripedium insigne* cannot fail to attract a good deal of notice; there are several huge specimens about 3 feet in diameter, and each one literally covered with unexpanded buds, and giving promise of a very fine display when fully expanded. Some people are fortunate in getting cheap Orchids, Mr. Hyslop informs me that he got all those lovely *Cypripedes* for the proverbial "old song." There is a fine healthy lot of *Odontoglossums* in a cool house—they grow well here, and flower regularly; broad flat growths are to be seen on these plants, indicating vigour and distinctness. *Dendrobiums* are also well looked after, and many fine specimens of *D. Wardianum*, *crassinode*, *nobile*, and more rare varieties, are now undergoing the ripening process preparatory to flowering. A very good form of *Cypripedium Curtisii* is in this collection; it is particularly well marked, and the petals are quite pendulous, and almost fold themselves around the base of the pouch; a distinction not often met with. Mr. Hyslop has effected many interesting crosses among his Orchids, and we must not be surprised if the Orchid world will be shortly startled by some of the wonders of Bletchley Park. Much could be written on the fruit garden and arboretum, but that I will leave to his experienced hands. *Weathercock.*

THE STRUGGLE FOR LIFE IN THE GUIANAN FOREST.

ORCHIDS AT HOME.—Far above our heads are the representatives of Shakespeare's "long purples" and the other temperate Orchids which decorate the English meadows. There they sit, 100 to 150 feet above our heads, "born to blush unseen," as far as the human eye is concerned. Nevertheless they live, and perhaps enjoy life, doing their work, and doing it admirably. They do not elbow their neighbours, nor do they smother, strangle, or suck them, but simply make use of the topmost branches of the forest giants, as resting places. The Orchid grasps its support in a loving manner, holding it tightly, but not like the parasite, to get fat at its expense. No, the Orchid has succeeded in making itself almost independent. It is satisfied with a little light; so there is no necessity for interfering with its host. Having as it were, succeeded in getting out of the turmoil of the fight, it decorates the brawny limbs of the forest giant with its brilliant flowers, and invites the bees and butterflies to come to its nuptials.

Although it apparently takes things very easy, the Orchid is by no means idle, while its position to-day represents the outcome of generations of steady work. Having no connection with the soil, it has to gather its food from the air, rain, and dew, and not only to collect, but also to store it. Although rains are frequent enough, still there are dry seasons, when, under the tropical heat, a plant in such a position must wither and die, unless some provision were made for these contingencies. Like the plants of the desert, the Orchid stores its food in anticipation of a drought; but every family, and almost every species, do this in a different manner. Some, like *Oncidium lanceanum*, lay up their store in thick leathery leaves, so that they can enjoy plenty of sunlight without injury. Others, like the *Cattleya*, have thick leaves and a swollen stem, which latter is one of the forms of the pseudo-bulb, and is peculiar to the Orchid family. Where the leaves are thin the pseudo-bulbs are often very large, so that if every leaf should be dried up, the plant still retains its vitality. In some cases the store of food is laid up in cylindrical leaves, some resembling porcupine's quills, others like yard lengths of thick twine; in

others there is a plump fleshy stem, which answers the same purpose. A few species have no leaves or pseudo-bulbs; in such cases, their aerial roots perform all the functions of both.

Beyond the fringe of rampant vegetation, nothing can be seen from the river, but by pushing aside the branches and Creepers, so as to get behind the veil, Orchids may be seen growing luxuriantly in great numbers. Here live those species that delight in plenty of moisture, and that cannot endure the drier atmosphere which is met with in the "high woods." This is the home of *Zygopetalum rostratum*, which is enabled to flourish and produce its beautiful white flowers in more gloomy recesses than most of the others. It has developed a creeping habit, by which it seems to derive benefit, being able by this means to grow upwards on a branch as the tree extends itself. When this species is plentiful, it forms quite a pretty decoration to the rugged branches.

The places where Orchids are seen to advantage are not, however, on the banks of the great rivers, but rather on those that are wide enough to allow a moderate quantity of light to penetrate. Not having sufficient sunlight to produce rampant vegetation, such places are very congenial to a great number of species. High above the water rise the giant Moras and other immense timber trees, while here and there a great trunk leans across the creek, its upper surface decorated with creeping Ferns, *Peperomias*, and the smaller species of Orchids, such as *Pleurothallis* and *Dichaea*. In some of the larger forks, grow immense masses of *Oncidium altissimum*—often 3 or 4 feet across—their elegant flower-stems being 10 or 12 feet high, hanging or curving gracefully over, and loaded with hundreds of pretty yellow flowers. *Brassias* are also very common, while here and there *Stauhepa eburnea* perfumes the air with its large ivory-white pendulous blossoms. As the creek twists and turns about, a new vista is opened at intervals, every short reach, from the different degrees of light, showing some diversity in its forms of vegetation. Now, as the creek narrows, the canoe is paddled through a gloomy cavern almost as dark as night, from which the exit appears at a distance like the termination of a tunnel. Then comes a wide bay, where the sun shines in all its brilliancy. Here a mass of vegetation chokes the passage, and the cutlass has to be used freely; while, a little further, a forest tree has fallen right across the stream, giving, perhaps, an hour's hard work with the axe before the canoe can be pushed through, hauled over, or drawn under.

On leaning trunks or projecting branches the *Catasetums* are generally plentiful. There are several species, which live under entirely different conditions, and taken altogether, this genus is perhaps the best example of adaptation to circumstances in the Orchid family. On the borders of the swamps, where only the *Eta Palm* will grow, *Catasetum longifolium* finds a congenial home among its lower fronds. There the Orchid hangs downward, and waves its long grass-like leaves in the wind. *Catasetum discolor*, as a contrast, has come down to the ground, and on the sand-reef, where the forest trees find it hard to live, this species revels in the poorest soil. Being provided with large pseudo-bulbs, the *Catasetum* endures the change of seasons without injury. Although its leaves are generally thin, and are liable to be dried up during a drought, this does not injure it, as the reservoir of food enables it to wait patiently, and even flower, under such conditions as might be fatal to many other Orchids. As if this were not enough, several species have developed a faculty which is almost unique in plants, although well-known in the case of bees, that of producing male or female according to circumstances. In the case of *Catasetum tridentatum*, there are three distinct shapes of flowers, which differ so much from each other that, until Schomburgk found them growing on the same plant, they were described not only as separate species, but even different genera. The male was known as *Myanthis barbatus*, the female as *Monachanthus viridia*; while the third form, which appears to be hermaphrodite, went by what is now the name

of the species, *Catasetum tridentatum*. When this plant has plenty of food, it produces a spike of female or hermaphrodite flowers, which are thick and fleshy, resembling in shape an old-fashioned woman's cap or sun-bonnet. These flowers and their attendant capsules, require a special effort, and can only be satisfactorily produced when the plant is in good condition. During a drought, when the plant is half-starved, it would be unable to support such a strain, therefore a few lighter and more elegant male flowers are produced, and as there will always be some stronger plants able to produce those of the opposite sex, the work of the weaker is not lost.

If one passes under one of these plants, when in flower, a swarm of yellow and black bumble bees (*Eulema dimidiata*) are seen hovering in its neighbourhood, and flying from flower to flower. Except in this locality, not a single bee is to be seen, and perhaps a collector might search for miles without

means of a sticky disk, with which they are provided, they adhere to the back of the insect, and are carried to another flower. Here the pollen masses come in contact with the stigma, and the flower is fertilised.

Hanging from a Creeper or branch may be seen here and there an oval bag-like mass of aerial roots, something like one of the nests of the tropicinals so common on the silk-cotton tree, above which are the pseudo-bulbs and leaves of that wonderful Orchid the *Coryanthes*. After throwing out two or three roots to attach itself to its support, it develops an interlacing network all round, in a way almost peculiar to the genus. At first sight it would be hard to say what purpose could be served by such a contrivance, but strike or shake the plant and it will be seen that it is nothing less than a veritable ant's nest. The Orchid is, like other plants, subject to the attacks of many foes, such as cockroaches and larvæ, which are particularly fond of the aerial

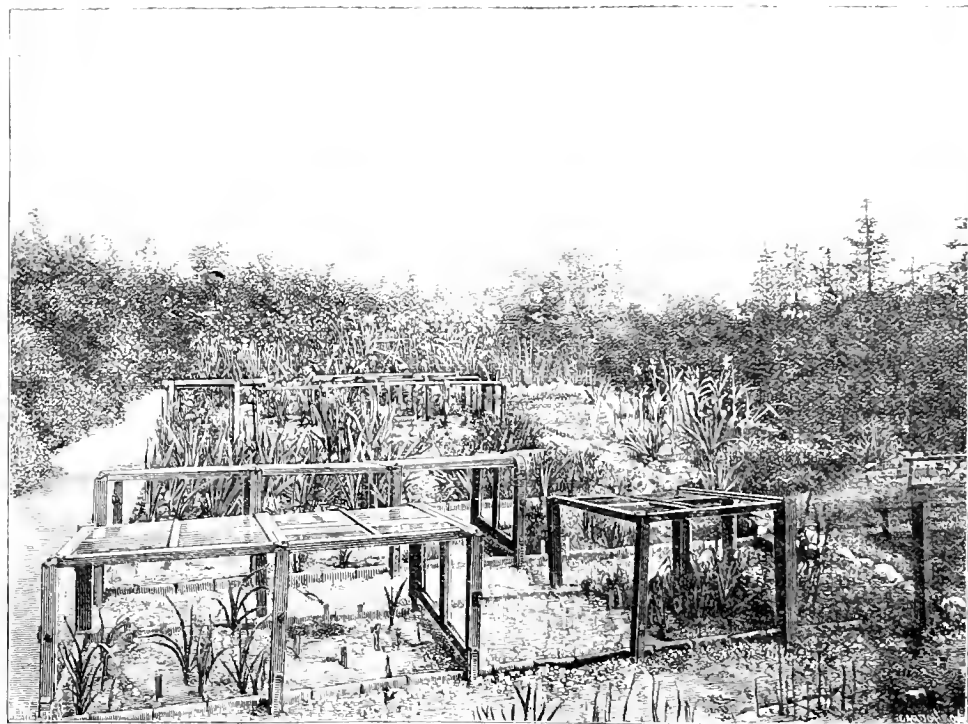


FIG. 79.—RIPENING STAGES FOR IRIS IN PROFESSOR M. FOSTER'S GARDEN, SHEFFORD.

finding a specimen. But when the *Catasetum* opens, whether it is hidden in the fork of a tree, perched far up among the foliage of the *Éta*, or on sand thrown up from a charcoal pit, the insect is sure to find it out. The flowers are not generally brilliant or showy, neither have they, like the *Stanhopeas*, any strong perfume, but, nevertheless, the bees discover them at once. Even in Georgetown, where many Orchids do not find their fertilising agents, and consequently remain barren, no sooner does the spike of flowers open, than the bees swarm around it. However it may be obstructed by foliage, or hidden in some out-of-the-way corner, the buzzing is heard in the early morning, telling anyone who has his eyes open that a *Catasetum* is flowering. Having succeeded in attracting the bee from a distance in some unaccountable way, a feast is provided in the shape of a little reservoir of nectar, to procure a sip of which the bee has to bring its head in contact with a pair of incurved antennæ, one of which is very sensitive. Immediately on touching this, the cover of the little case containing the pollen-masses flies off, and, like a skip-jack, these spring out, when, by

roots. To protect itself against these, the *Coryanthes* has chosen to provide a comfortable nest wherein a garrison of carnivorous ants find shelter, they, in return for the accommodation being ready to come out and fight at the first alarm of an enemy. Other Orchids, which live in the tree tops, are not so subject to crawling insects as those nearer the ground, and for that reason it appears that they have never seen the necessity for this special protection. *Epidendrum* (*Diacrium*) *bicornutum* has obviously felt this need, and set to work in its own way to accommodate a garrison. Being provided with long cylindrical pseudo-bulbs, it has left these hollow, and, for a doorway, allowed the shell to split for about a quarter of an inch at the base. In these well-protected homes the ants live and thrive, and in return for their lodging, like those of the *Coryanthes*, are a standing terror to evil-doers. Other Orchids, such as *Gongora*, provide a half-shelter for ants, but their efforts in that way are of little importance as compared with *Coryanthes* and *Diacrium*. *James Rodway, F.L.S., in "Timber."*

(To be continued.)

VIEWS IN PROF. M. FOSTER'S GARDEN, THE NINE WELLS.

IN vol. vi, u.s., p. 5, of the *Gardeners' Chronicle*, will be found a short description of Prof. Foster's garden at Shelford, near Cambridge, and the illustrations on this and page 585, will supply readers of the *Gardeners' Chronicle* with further information relating to the garden of this devoted cultivator of the family Iridæ. Visitors to The Nine Wells must not expect to find the Irises grouped altogether, but to find here a terrace and there an enclosed spot containing many rare and scarce species and varieties. The view (fig. 79) where the lights are shown, represents one of these sheltered spots, and the lights have been placed over those which have gone out of flower, so that they may be protected from wet, and thoroughly ripened; and to this system the Professor claims that he owes no small share of his success in growing and flowering many of the choicer and shy blooming Irises. No man, perhaps, knows more of the details of the genus *Iris* than Prof. Foster, and if he could but be induced to give a few articles in these pages upon his experience in cultivating these lovely flowers, it could have no other effect than assisting to make the family more generally cultivated than is the case at the present time.

There is one drawback in ordering plants of a certain species from a catalogue, as some of them possess so many varieties of all grades of quality; the consequence is, that a person might see some kind at an exhibition or elsewhere of particular merit, and order the same from his nurserymen, which would turn out, when in flower, altogether different, and perhaps inferior, to the one he based his purchase upon.

The Professor in some parts of his garden can point out variety after variety of the same species, some with great merit, and others much removed from the standard of perfection. The unfortunate point is, that *Iris* cultivation has not become so popular as that of *Narcissus* or *Orchids*, where, as soon as one deviates from another, we get a name of some kind to distinguish the variety.

Last summer *Iris Gatesi* was flowering in these gardens. This is one of those flowers which one only needs to see and a craving to possess it is at once induced. *I. Iberia* was also in flower, and this species one does not often have the pleasure of seeing in bloom. Upon enquiry, I was told that the former is not so free a flowerer as the latter.

The gardens are not wholly devoted to the *Iris*, but the visitor will find many choice rock plants, as will be seen in the photograph showing the house (fig. 80), and many other fine herbaceous plants in the borders.

Professor Foster gives a good piece of advice to all who manage gardens. "The first thing," says he, "that a gardener requires to find out, is what his garden will grow, and be content with it." It is impossible to visit these gardens, go when you may, without finding something in flower to greet one's senses.

In speaking of *Iris* seeds and sowing, he is particular in impressing upon the tyro the virtue of patience; as for example, he says "that he received from Persia some seeds of *Iris* in 1884, and the first year after sowing, one seed germinated (which a greedy slug devoured), and in the year 1890 he was rewarded for his patience by six other seeds germinating." *W. Harrou, Sheffield Botanic Garden.*

THE BRITISH FRUIT GROWERS' ASSOCIATION.

(Continued from p. 455.)

THE PHILOSOPHY OF PRUNING.—This was the substance of an address by Mr. J. Wright.

Mr. Wright did not prepare a paper, but spoke from short notes, making reference to a number of diagrams, and thus taught through the eye as well as the ear.—He said he was aware he had amongst his audience men as capable as himself in growing and pruning fruit trees; some of them could, no doubt, teach him something on the subject, and he should

be at least as pleased to learn from them as he was willing to try and teach others who had less education in the school of experience. Hundreds, indeed thousands, of persons were endeavouring to grow their own fruit, and all would wish them success. They needed instruction in pruning fruit trees and bushes, as did many young men who had taken the charge of gardens after gaining most of their experience under glass.

After describing the objects of pruning, namely, the production of fruitful trees in required forms adapted to certain positions, also the different kinds of pruning—summer and winter, root and branch—the lecturer said that both symmetrical garden trees, also informal standards and dwarf bushes, could be made essentially fruitful in character. They could not be made to bear full crops of fruit unfaithfully, because gardeners could not control the weather and prevent frost destroying the blossom; but if the trees were brought into the best condition of fruitfulness by correct management and methods of pruning, those who had brought them into that state had done their duty. Fruitful examples were shown in diagrams of the different forms of trees—pyramid and bush—from sketches made at Chiswick, and a thrifty, fruitful, open standard, as grown at Cardiff Castle, the methods of pruning adopted in producing such trees being shown in each case.

Crowding trees with a thicket of growths in summer to be cut out in winter, a too common habit, was strongly condemned. A sturdy framework was advocated by shortening the branches of young trees for two or three years, then having the main branches so thinly disposed that the sun should shine between them, and directly on the leaves, not near the tips of the shoots only, for that was of small service, but on the leaves near the base, for rendering them structurally perfect for performing their important functions of [forming and] storing nutrient matter in the stems, and so becoming spur and blossom formers and fruit manufacturers. With healthy root action in good soil, a due balance of force between roots and branches, leaves of the best character by the direct action of light and air on their surfaces, blossom-buds were bound to form and fruit to follow, weather being favourable to its setting and development.

Particular attention was asked to the following statement:—"No matter what kind of trees were in question—restricted and formal, or large and free—all pruning must be based on this fundamental fact—namely, the roots of a tree are part of the stem, the hidden counterparts of the visible branches, and one part cannot be manipulated—weakened or strengthened—without influencing the other." "That," he went on to say, "is the concrete condition on which all action in pruning must be based. The cultivator must not induce by mistaken practice a great preponderating power of roots over branches or branches over roots; he should, in fact, regard roots as what they are—underground stems, and be able to form a clear conception of the parts of a tree within the ground from a critical inspection of the parts above it, shoots and leaves; and until a man can do that he cannot be regarded as a competent safe, profitable pruner." The lecturer said he had found that a large number of successful fruit growers were distinctly of opinion that as much fruit was prevented by the abuse of the knife as was produced by its use, but he did not call that pruning but butchering. "A butcher," he said, "can cut off limbs, and destroy life in doing so; a surgeon amputates and prolongs life by the operation. The butcher's work is physical mainly, the surgeon's intellectual, scientific; and we want intellectual pruning in gardens, not butchering; producers of fruitful trees, not preventers of crops of fruit."

Right and wrong methods of pruning were illustrated; roots were shown as influenced by branch growth, and *vice versa*; both fruitless and fruitful wood were portrayed; the causes that produced certain effects demonstrated, and remedies for obvious evils pointed out. Waste of material was made clear in the form of a dense thicket of summer growths, rampant roots and no fruit on one side of

a tree; spur formation, fruit production with corresponding fibrous roots on the other—the latter the natural outcome of rational pruning. This, it was stated, "consists in disbudding and thinning to prevent overcrowding instead of shortening branches, yet letting the roots extend to create it, encouraging the roots of weakly trees and shortening the branches to promote necessary vigour; but when trees grow too luxuriantly in summer, cutting back the shoots in winter is simply followed by more and stronger growths. It is a case of man fighting against Nature, and the combat may go on for a generation, Nature inevitably winning in forcing growth. If man must conquer, he must use his brains and change his tactics. The branches of a strong-rooted tree, if kept thin and not shortened, will in time counteract the root power, form blossom-buds, and bear fruit, weather permitting; but if for special reasons the growth must be arrested and restricted within certain bounds, the roots must be shortened to a greater extent than the branches, especially strong roots that strike deep down in the subsoil; then, with otherwise good cultural attention, trees hitherto practically barren will produce valuable crops of fruit."

APPLE SCAB.

FUSICLADIUM DENDRITICUM.—The fungus appears to be retarded by the heat of summer. Its most rapid growth takes place during moist, cool weather, such as we have had prevailing for a long time. On the treatment of this pest the report in question states:—"The fungus of the Apple scab does not penetrate into the tissues of the host, and very early in its development it is wholly exposed to any application which may be made to destroy it. It appears, however, that the vegetative portion, or plant body, of this as well as of many other fungi, is very resistant to the action of chemical reagents, quite as much, or more so, than are the tissues of the leaf or Apple upon which it grows. We can scarcely hope, therefore, to accomplish its destruction, unless it be the growths infesting the young shoots and the scales of buds. Before the latter expand in the spring, much stronger solutions can be applied than it is possible to use later in the season, and it is at this period that the warfare against this fungus should begin. It has been observed that the germination of the spores is wholly prevented in very dilute solutions of copper, and our chief dependence in combating this disease appears to rest upon this fact—the possibility of preventing the germination of the spores where they can do harm. A practical treatment has been discovered by which we may prevent the germination of the spores of the downy mildew of the Grape Vine, by applying various solutions of sulphate of copper to the surface of the leaves upon which the spores of the fungus fall. It is doubtless equally practical to accomplish by a similar treatment a like result in the case of the Fusicladium of the Apple. Experiments already made with the sulphate of copper solutions indicate that they will, when properly applied, at once check the 'scab.' Farther and more systematically-conducted experiments are required in order to determine what preparation is most efficacious, at what season it is best to make the application, and the strength to which the solutions must be limited. Where *eau celeste*, prepared according to the original formula, has been tried, it has severely burned and injured the foliage. This preparation may be rendered less caustic by the addition of ordinary carbonate of soda.

"Another and more simple modification of the *eau celeste* is prepared by dissolving in 1 quart of liquid ammonia, 4 to 6 oz. of carbonate of copper, then dilute with water to 25 gallons. The ammonia and carbonate of copper solution may be kept in a bottle, and diluted when required for use at the rate of about 1 oz. of the solution to the gallon of water. Those who have used this preparation on the Grape Vine, say it is perfectly harmless to the foliage, and is as efficient against mildew as *eau celeste*.

"Simple solutions of sulphate of copper should not be employed during the growing season, as their use is almost certain to result in injury to the foliage. The Bordeaux Mixture may be used at any time without fear of injury. In using one or other of these preparations, the following course of treatment is suggested:—

"(1). In early spring, before the buds have commenced to expand, spray the trees thoroughly with a solution of sulphate of iron, using four pounds of the iron sulphate to four gallons of water.

"(2). As soon as the fruit has set, apply the Bordeaux Mixture or one of the modified preparations of *eau celeste*.

"(3). If the weather should be such as to favour the development of the 'scab' fungus, a third application should be made two or three weeks after the second, using the same materials.

"In addition to the effect that these applications may have on the development of the fungus, they will doubtless serve to keep off many insect pests.

"In storing the fruit for the winter, especial care should be taken to separate all the Apples showing any signs of the scab from those which are smooth and healthy, and they should all be kept in rooms or cellars free from moisture."

These are the sum total of the recommendations which have been made, but we have no positive information as to the practical results. "*Grevillea*."

A PLANT OF ILL-REPUTE.

Two very different plants, the Meadow Saffron and the Saffron, have been sometimes confounded. As a frequent visitor at Saffron Walden, which derives its name from the latter plant, I have long been acquainted with the harmless character of *Crocus sativus* saffron, which was cultivated at Saffron Walden, for domestic use, from the time of Edward III, till the last century, when Saffron for colouring purposes in cookery fell out of use, and which is still found wild in this neighbourhood. But Meadow Saffron (*Colchicum autumnale*), had never fallen under my observation till lately. It is a plant which farmers ought to know, and do know, in the districts where it prevails, not because it yields a potent remedy for gout, which those who lead an out-door life are not specially liable to, but because it kills their cattle. It is, in fact, an exceedingly dangerous plant, every part of it being poisonous at one period of the year or another. Owing to much intercourse with farmers, and some knowledge of the land and of cattle, I should probably have known this conspicuous plant if it had grown at all commonly in the East or South of England, or in the Midlands.

It is commonly stated that *Colchicum autumnale* grows in the pastures of the North-west of England, and I have lately met with it blossoming in the pastures of Herefordshire and other counties bordering on Wales. About 2 acres of one field were thickly covered with its beautiful lilac-coloured and vase-shaped blossoms; but, as a rule, the patches of this plant of ill-repute were of much less extent. It happened that I was visiting a gentleman who owns a very valuable herd of Hereford cattle, and at this time of year animals worth hundreds of pounds each may be seen grazing among the *Colchicum* blossoms without suffering injury. One almost pities the handsome white-faced cattle for the danger they seem to incur. But it does not appear that in point of fact, they run any risk; the blossoms are poisonous, but they are eschewed by the cattle, and no cases of poisoning have been reported at the period of flowering. Botanists will need no reminder that the plant in question bears its leaves and its flowers at different seasons of the year; and, unlike the Coltsfoot, which produces flowers early in the year, and leaves later on, the Meadow Saffron bears its leaves in spring, and its flowers in September. I noticed the blossoms in meadows from which the hay had been removed much later than usual this year, and the blossoms probably would have appeared in August,

if the hay had been carted at the usual season. It is said that children have been poisoned by eating only a few of the attractive-looking petals; they would not be likely to eat many, on account of their strong acrid taste. The leaves, too, are of ill-flavour; but, in the spring, when cattle are first turned into the pastures, they eat the scanty green food greedily, and are sometimes poisoned by swallowing the leaves of *Colchicum* with those of grass. Farmers have a wholesome dread of the plant, which, they say, can only be eradicated by spudding-up the bulbs. Possibly, some dressing might prove effective for its destruction. Meanwhile, its blossoms ornament the pastures of the West, just as the several varieties of *Crocus* do the turf of St. James's Park or elsewhere. The *Crocus* springs in pastures in several places, not as a native wildling, but as a plant escaped from culture; as when old gardens have been turfed over, and the bulbs of *Crocus* and *Narcissus* have continued their reproduction years afterwards. As a poet has said:—

"Long years ago, it might befall,

When all the garden flowers were trim,

The grave old gardener prided him

Of these the most of all." *H. E.*

[By constantly pulling up the leaves during summer, and spudding up the bulbs (although this is difficult, owing to their great depth in the hard soil), the plants become weakened, and gradually die out. But this kind of extirpation of *Colchicum autumnale* is heartbreaking work, and it would in the end cost less to trench or steam-plough the land, and collect the bulbs. When land foul with *Colchicum* is mown for hay, the first job after cutting should be to send youngsters into the field to collect all the leaves and stems of the plants; the dried leaves being productive of illness and death amongst the cattle fed with them. *Ep*]

FORESTRY.

LARCH CULTURE.—The advantage of planting Larch upon ground that cannot be utilised for tillage, is illustrated in a variety of ways, but perhaps in none more so than by an example which came under my notice a short time ago in Ireland. The plantation which I refer to was planted, under my direction, thirty years ago, and consists principally of Larch and Scots Fir, planted at a distance apart of about 3½ feet, or, in round numbers, at the rate of about 3500 plants per imperial acre, the plants being mixed in an even and uniform manner as the work proceeded. The soil consists of clay and gravelly loam, resting upon a gritty subsoil of clay that required draining. The ground had been under a state of tillage for many years, but had never been properly cultivated, so that the surface was principally clothed with noxious weeds, and in consequence of which the tenant was unable to pay his rent. Under such circumstances, the proprietor had no alternative but either to plant the ground, or allow it to lie unoccupied. All the plants grew remarkably well, and by the time they required thinning, it was evident that the Larch in all probability would be the best crop for profit and utility, so that the Scotch Firs were gradually cut out in the course of thinning, to allow space for the full and healthy development of the Larch. The trees now stand at a distance apart of about 8½ feet, or at the rate of about 600 trees per acre, and as each tree is worth on an average 5s., the present value per acre amounts to £150, which is by no means an extravagant estimate. Now, had the landlord received an annual payment of 20s. per acre, the amount received during thirty years of course would have amounted to £30, which shows a balance in favour of tree-planting to the amount of £100 during the above period of time. The cash realised for thinnings did more than cover the expense of the formation and working expenses, as well as the interest for the capital employed. In Ireland small thinnings are always in demand by farmers and others, and fetch from 1s. to 5s. per dozen, according to size and

quality. But although the present value of this plantation is highly encouraging, yet I believe the prospective value would be much more so, as the trees are in the best of health and making rapid progress, not the least appearance of ulceration or larch disease of any kind, such as we are accustomed to see in many parts of England and Scotland. Another point in favour of Larch culture is, that the tree being deciduous the ground is coated with its leaves every autumn, which fall as regularly and even on the surface as a shower of snow, and as these get fixed to the spot and are not apt to be blown away by the wind they soon rot and decay, and thus leave a rich deposit on the surface which promotes the growth of natural grasses close to the stems of the trees, and as these soon form a close green sward on the surface, it makes excellent pasture for sheep and cattle. This plantation affords a remarkable example of this, as the principal weeds and surface scrub has disappeared, and been supplanted by nutritious pasture plants and natural grasses, which are very valuable. But in recommending the planting of trees on waste land, we must not overlook the utility of shelter, as I consider good shelter for animals to stand next in importance to that of a proper supply of nutritious food.

Great Britain is a mining country, and the quantity of timber which we require for mining purposes is something enormous, the greater portion of which comes from Sweden; and as the quantity required is still increasing, surely that ought to act as a stimulus to owners of waste lands to have them planted and turned to better account. But the quantity of timber required for mining purposes in this country is but an item by itself, after all, for when we contemplate the quantity of wood required in the formation and maintenance of our railways, telegraphs, and other purposes, the stuff required soon swells to colossal dimensions. In a paper before me, which bears upon this subject, I gather the following statement:—“The exports from Sweden of matches are on the increase, and amounted, during the first half of the present year, to 6404 tons, against 5816 tons in the first half of 1890, 6253 tons in the same period of 1889, and 5951 tons in the same period of 1888.” Owing to our geographical position, we cannot grow timber of a similar size as what we get from America and other places, for particular purposes; but I have no hesitation in saying that we can grow timber of a suitable size and quality for mining and manufacturing purposes, including matches.

Keeping in view the increasing demand for timber of all shapes and sizes, from the mere sapling up to trees of large size and matured growth, which, as I have shown, can be grown upon ground unsuitable for tillage, we may well be amazed that men of capital and enterprise have not turned their waste lands to better account long ago. By planting marsh and mountain-ground, many millions of money might be kept at home annually in place of being drained out of the country; many thousands of able-bodied men could find employment at home in place of emigrating to foreign parts to procure a livelihood. Much has been said and written of late about the utility of establishing a school of forestry in this country, and I wish it every success; although at the same time, I would strongly advise all who wish to acquire a knowledge of tree culture to take their lessons at first-hand from God's book of Nature to man. The trees, the earth, the herbs, the rocks, and the insects, can all teach us much in every-day life if we would only condescend to study them.

WHAT TO PLANT.

Now that the planting season is at hand, foresters will require to exercise their judgment as to the selection of trees for different soils and situations, and in doing so, there is no better guide than past experience and observation. In the *Gardeners' Chronicle*, Oct. 17, p. 458, I see an interesting article on coniferous trees of recent introduction, and in which Mr. Malcolm Dunn, gardener, Dalketh, considers *Cupressus macrocarpa* one of

the best trees for the afforesting of Ireland. Mr. Dunn, it appears, gathered his experience of tree-planting in Ireland, at Lord Powerscourt's estate, co. Wicklow, and as a great part of this county is hilly, and in a marine situation, the tree in question thrives very well, and justifies Mr. Dunn's recommendation. But co. Wicklow is but a small portion of Ireland, and to recommend *C. macrocarpa* as one of the best trees for afforesting that country is by far too sweeping a nature. In inland situations in the north of Ireland the hardness of this tree cannot be depended upon. In the Lough Neagh district, co. Armagh, I had this tree planted in quantity as forest trees, and after they had attained a height of some 8 feet they were all killed by frost in 1861-2; others in inland parts of the country shared the same fate. *C. macrocarpa* can only be planted with safety in the south of Ireland; and in the north, a few miles inland from the seashore. Some time ago, when overhauling and renovating Lord Carysfort's ornamental plantations at Glenart Castle, in the Vale of Avoca, I found *C. macrocarpa* to be in excellent health, and very ornamental, but as a timber tree for utility and profit, it cannot be compared with some other species of conifer of recent introduction, inasmuch as the timber of young trees is of a soft texture, and wanting in resinous matter.

About eighteen years ago, I gave directions for thinning a series of young plantations in co. Tyrone. The trees at that time appeared to me to be about ten or twelve years old, and had never been thinned before. I again inspected these plantations in the month of September this present year, and found them in a thriving condition, and making rapid progress, and the following is the girths of the stems of a few species taken at 3 feet from the ground, and will furnish a pretty good index as to their growth and utility:—Common Spruce, 2 feet 2 inches; common Silver Fir, 3 feet 9 inches; Scotch Fir, 2 feet 9 inches; Larch, 2 feet 9 inches; Pinaster, 3 feet; *P. austriaca*, 2 feet 11 inches; *P. Cembra*, 1 foot 10 inches; *Cupressus Lawsoniana*, 3 feet 6 inches; *P. excelsa*, 3 feet 4 inches; *Abies Douglasii*, 3 feet 6 inches; *Wellingtonia gigantea*, 7 feet 6 inches; *Cedrus atlantica*, 2 feet 6 inches. *Cupressus macrocarpa* and *Pinus insignis* had disappeared altogether, probably they had died out, or been killed by frost. The soil here is of a free, open texture, about 30 miles towards from the sea, and about 200 feet above the level of the same, aspect south. Many years ago, I directed the attention of planters to the merits of *Thuja gigantea* (Lobbi) as a probable substitute for Larch, and I am glad to see that other planters can recommend the tree after a fair trial. This species is capable of growing on stiff adhesive soil on exposed situations, as well as on reclaimed peat bog in marsh and mountain.

In the *Gardeners' Chronicle*, October 10 (p. 425), there is an article on the naturalisation of exotic forest trees in Prussia, in which we are told that the Douglas Fir does not thrive in low peaty swamps. The reason of this is, that the peat or moss-ground had not been properly prepared by draining previous to planting, as this Fir is very impatient of wet at the roots, but when the moss is properly drained, and allowed time to drip and cleanse itself from any impurity before planting the trees, they soon take to the ground and make rapid progress. At Churchill, Verner's Bridge, Ireland, I planted some of these Firs many years ago, on flat peat bog about 30 feet deep; the bog was well-drained and in an advanced state of decomposition previous to planting. The trees were planted in spring, which is the best season of the year for planting this class of ground, as the antiseptic properties of peat are apt to damage the roots of trees planted during autumn and winter, but after the roots take to the ground no danger need be apprehended. At the time of planting the trees, a small quantity of earth or pulverised clay was mixed with the staple at the spots where the trees were planted. These trees established themselves in the ground at once, made rapid progress, and are now magnificent specimens. The ground here is sheltered by other trees

in the vicinity of which, I have no doubt, was favourable to the growth of the trees, as the Douglas Fir is very impatient of wind. The only drawback which the trees exhibit here is that they cannot raise their heads above the tops of their hardy neighbours; as soon as they feel the full sweep of the wind on their tops they lose their leader and form a bushy top. On Heather ground and wind-swept districts of Ireland, no better tree can be planted for profit and utility than the Larch, and as two-year seedling plants can be planted by the notch system of planting at the rate of about 40s. per acre, that of itself is a great recommendation. Another point in favour of Larch planting in Ireland is, that I have never found a single tree in that country affected by ulceration or Larch disease proper. The Larch is naturally a tree of the misty mountain, and when planted on such places it can live and attain a profitable size where many other trees would perish. *J. B. Webster.*

ROSERY.

AUTUMN IN THE ROSE GARDEN.

WHEN Tom Moore wrote about—

"The last Rose of summer left blooming alone,
When its loveliest companions are faded and gone,"

it was not the days of hybrid perpetuals and Teas, but of the old Provence and Gallica Roses which filled our gardens with beauty and perfume in June, which was then emphatically the month of Roses, and we can just see the poor survivor of the heats of early July shaking on its long shoot until its petals dropped; but now all that is altered, our Roses do not come in so early, unless we grow some specially for that purpose. July, not June, is now decidedly the month of Roses, but in September we get a new flush of beauty, and in a cool season like the past, grand blooms were to be had of many H.P.'s, while Teas everywhere caught the eye, and gladdened us with their soft and delicate beauty. There is doubtless a capriciousness about the H.P.; some bloom but sparingly, but there comes a season (why we cannot tell) when the same plant comes out strongly as an autumn bloomer, while others seem, for one reason or another, to refuse in certain localities to give a second crop of blooms. Thus, there is one Rose which is very despairingly spoken of as an autumn bloomer—

Madame Gabriel Luizet, yet I have always found it giving me good blooms in September, and this year I had not a plant which did not flower, while with two or three there was literally a profusion of bloom. I do not think that in any pink Roses we have anything so lovely as this Rose when at the height of its beauty; and it most certainly enhances its value, when we find it blooming so well in the autumn. There can be no doubt, however, that it is capricious in this respect, as so many complain of it as being only a summer Rose—mine are cutbacks on the Manetti of some years' standing.

Gloire de Margottin.—This is another capital autumn bloomer, a not very full Rose, and I believe with a good deal of the *Gloire des Rosomanes* blood in it, and therefore very brilliant in colour. Its growth is somewhat straggling, suggesting a pillar Rose, it is therefore vigorous, and its bright flowers are distinguishable at a distance.

Gloire Lyonnaise.—This, which was described as a yellow hybrid perpetual, is in reality a hybrid Tea, having the very faintest suspicion of yellow at the base of the petals. It is an excellent garden flower, and blooms well in the autumn, when the yellow tint is a little more pronounced. The wood is stout, and the substance of the flowers good.

Mrs. John Laing.—The very best Rose I think that the late Mr. Henry Bennett ever sent out, and well deserved the Gold Medal of the National Rose Society, which it obtained. It is of a soft delicate rose colour, beautiful in shape, and of good substance; to which may be added, that it is one of the very best autumn-blooming Roses that we have.

Gustave Piganeau, said by some to be a sport from Paul Neyron, by others from Antoine Ducher; if from the former, it retains one of those qualities for which it is so great a favourite in and about Paris, its free autumn-blooming character, for the most abundant Rose at that season in the bouquetists' shops, is this huge coarse flower. In the autumn-time it loses a good deal of its size and coarseness. *Gustave Piganeau* is unquestionably a good autumn bloomer, of a fresh, lively colour—light carmine.

Margaret Haywood.—A very pretty light pink Rose, sweet-scented, of good form, and, so far as my experience goes, likely to prove a good autumnal flower. There is another flower by the same raisers (Paul & Son), which I have seen, but not grown, which I think promises to be a good autumn flower—Bruce Findlay, very bright, somewhat in the style of *Gloire de Margottin*.

The greater proportion of flowers in the garden is, however, furnished at this season by the Teas, which do not indeed equal the hybrid perpetuals in brightness of colouring, but are always favourites from their extreme delicacy, refinement and delicious perfume (although I have found people who dislike it). I do not know to whom we are indebted for the absurd term "hybrid perpetual." The French, from whom we first received the Roses, gave them a much better name—"second-flowering" (*remontant*)—thus clearly distinguishing them from the summer Roses, whose young shoots never support a flowering-bud. The Teas continue to bloom up to the time when frost holds them in its iron grip, and nearly all of them are very generous in giving us blooms in the autumn. Perhaps the two most remarkable in this respect are *Marie Van Houtte* and *Madame Lambard*, the former with its beautiful creamy-white flowers, edged in autumn with pink, and the latter of all colours. I have at this season of the year, gathered blooms, off the same plant, of a bright red, and others of a creamy-yellow tint. It has one fault, when gathered the colour is apt to fly, and the centre to become confused, but as a garden Rose it has few rivals. Of the new varieties I have found—

Souvenir de S. A. Prince, very free, as is the Rose from which it is a sport, *Souvenir de mon Ami*. During the last season it has increased the estimation in which it has been held, and will, no doubt, in the future be a greater favourite still.

Somewhat allied to the Teas are the little dwarf Polyantha Roses, and these are very fine and constant bloomers. The little *Perle d'Or* and *Mignonette* are very charming just now.

Single Roses, of course, are not to be expected at this season of this year, but how very delightful are—

Rosa rugosa and *lingosa alba*, for not only do they give an occasional bloom, but they are loaded with their handsome and large hips, brilliant in colour, and set in the midst of very handsome foliage. These are beloved of birds, and hence, and for their density, they are coming much into favour for covers; but they are very beautiful in the garden, requiring, however, to be kept in check, or they will soon overrun other things. Another single, or sometimes semi-double, Rose is—

Rosa Passardii.—This with me in October, flowered in great profusion. I do not know whether this is unusual or not. The flower is pure white, small, with yellow stamens, and is frequently semi-double, although more beautiful in its single state.

It would not be fair to omit the *Noisette* or *Tra-Noisette* Roses, which are now giving us many pretty blooms of the more rampant-growing ones of the *Gloire de Dijon* race. The most satisfactory in the autumn blooming are *Belle Lyonnaise* and *Bouquet d'Or*, the former especially, is giving many very beautiful blooms, and does not come so quartered in autumn as in summer. Now those charming Roses, *William Allen Richardson* and *L'Idéal* are giving variety and depth of colouring to the bouquet, which, even in so small a garden as mine may now be gathered; and although I do not exhibit, yet the greater portion of my Roses are exhibition Roses. I do not confine myself to them; the single Roses charm me quite as much, and I know nothing more

exquisitely beautiful, in its way, than the common wild Briar of our hedges and woods, and I think lovers of Roses do themselves wrong when they do not find a place for *Polyantha simplex*, *Macrantha lucida*, and such beauties; but, at the same time, I hope that their admirers will not look with pitying contempt on those who can also admire a *Marie Baumann*, or *Charles Lefebvre*. *Wild Rose.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

BANKSIAN ROSES.—These popular climbing Roses should be given a warm situation, and allowed plenty of room to develop, and show off to the best advantage their small globular white and yellow flowers and long shining leaves. The varieties are:—*R. Fortunei*, white, large-sized flowers; *Jaune Serin*, very rich yellow, with fine foliage; *Alba*, or white (the old variety), small white flowers; *Lutea*, or yellow (the old variety), fine yellow flowers, small and full.

MINIATURE, OR FAIRY ROSES.—The productions of these diminutive Roses as staged by Messrs. George Cooling & Sons at the Bath Rose shows, have served to demonstrate their suitability and great utility for decorative purposes. In a cut state the flowers are useful for vases and nice in bouquets, and the plants are admirably adapted for pot-culture, or as edgings for Rose beds, &c. The best varieties are:—*Anne-Marie de Montravel*, flowers very small, of the purest white, a perfect "fairy Rose," and deliciously scented; *Lawrenciana rubra*, the old double red tary, free flowering, and very pretty; *Mignonette*, soft rose changing into white, very beautiful; *Paquerette*, pure white, very continuous and pretty; *Perle d'Or*, yellow with orange centre, flowering in large clusters, novel and distinct, and very pretty in the bud state; *The Pet*, double white, protuse bloomer, and one of the prettiest little Roses in cultivation.

CLIMBING EVERGREEN ROSE.—To be accurate, the so-called evergreen Roses, which have originated from *Rosa sempervirens*, are only sub-evergreen, retaining their leaves till the approach of spring. They are well adapted for covering pillars, arches, and banks, being vigorous growers and free-bloomers; the large clusters of small variously-coloured flowers being very telling in effect. The shoots should be well thinned in pruning, and left nearly their full length, merely cutting off the weak points of the individual reserved growths. The varieties here recommended are:—*Adelaide d'Orleans*, white; *Banksiaeflora*, white, centre pale yellow, small flowers; *Dona Maria*, pure white, small; *Félicité-Perpétue*, creamy white, flowers small, full, and beautiful; *Leopoldine d'Orleans*, white, shaded with rose; *Princess Mary*, reddish pink; *Princess Louise*, blush; *Spectabilis*, rosy lilac, large, and double.

PLANTING TREES AND SHRUBS.—Where the making of beds and borders for ornamental trees and shrubs is contemplated, the work should be pushed forward quickly, with a view to getting the planting done before frost sets in. The borders, if new, should be slightly or boldly irregular in outline, according to the size of them, and beds should be of a simple shape, irregularly but gracefully curved. The land should be trenched or dug two spits deep, and if it be of good quality, the bottom may be brought to the top; where the soil is shallow and poor, leaf-mould, road-scrappings, and such like should be added after it is dug, mixing these materials with the staple whilst planting. In the case of the natural soil being still and heavy, wood and coal-ashes may be applied in addition to the other substances, which render it more congenial to the requirements of the rose. I may here remark that *Rhododendrons* and *Azaleas* will do fairly well in the latter description of soil, and still better if a few shovelfuls of peaty soil be placed about their roots in planting them. If leaf-soil be plentiful, and peat less so, it may be used instead of the latter. *H. W. Ward, Longford Castle, Salisbury.*

FRUITS UNDER GLASS.

THE ORCHARD HOUSE.—The trees being now at rest, should be stood in the open, the pots plunged in Cocoa-nut fibre or coal-ashes, and the house cleaned, repaired, and painted if necessary, and everything got in readiness for a start at the new year. If the trees have been repotted or top-dressed, and are now

in the open air, care must be taken to ensure their not suffering from excessive rainfall, but at the same time do not so protect them that they will become dry at the roots. The trees should stand on a bottom impervious to worms, which would soon spoil the drainage. Fruit-houses at this season are often filled with *Chrysanthemum* plants, and the borders are apt to get more water than is good for the trees, besides the atmosphere being kept close to hasten the flowering of the plants, or to keep out the frost, and in some instances these conditions tend to bud-dropping. Any trees late in ripening the wood should now be repotted or top-dressed, and the shoots painted with Gishurst Soap after being washed with warm water; if scale or mealy-bug be present, a stronger insecticide should be used.

CUCUMBERS.—With the absence of bright sunshine, it will have been necessary to use fire-heat freely, but I would advise affording the plants a few degrees lower temperature on sunless days, in preference to hard firing, and to keep a supply of sweet fermenting material in the house to assist in keeping up the warmth. With a lower day temperature, the night warmth must be made to correspond, and 65° will be sufficient, the glass being covered at night with mats or dressed canvas, which will make from 6° to 9° difference in the temperature of the house, and prevents sudden changes in variable weather. The day temperature will be much influenced by the weather; on cold days without sun, it may reach 70°, with a rise of 10° or 15° when the sun shines. Avoid heating the hot-water pipes much in the morning, and injuring the tender foliage. Watering will also need care, so that canker may be avoided; and what watering is required should be done early in the day, and the stems kept dry at the surface; heavy syringing should now cease. Continue to entice new roots to the surface by small top-dressings of rich compost, and see that the fresh soil is of the same temperature as the bed, and make it firm, so that the new roots may get a hold, and thus favour a sturdy growth. The plants will show an abundance of fruit, but these must be removed if fruits are wanted in quantity after the new year. Continue to train the bine, stopping it as required. *G. Wythes, Syon House, Brentford.*

THE KITCHEN GARDEN.

CELERY.—Celery for late supply should be earthed-up before it gets injured by frost. Soil itself affords the best protection against frost and moisture, but if it should be of a very heavy nature, dry Fern or light stable litter should be placed on each side of the rows during hard weather, instead of almost covering the plants with soil. But where the soil is light, that alone forms the best kind of protection, and the plants should be earthed-up when dry, only the tips of their leaves being visible. In very wet or very heavy soils, the better plan is to plant Celery on the level, or but a slight depth below ground, the necessary soil for moulding the plants being obtained in the usual manner.

ASPARAGUS.—The beds should now be cleared of dead stems and weeds, and evenly top-dressed with rotted manure, or in places with access to the seashore, with sea-weed. Then mark out the beds anew, and if the look of manure be objected to, a little of the soil from out of the alleys may be strewn over it, and the alleys lightly forked over. This mode of treatment applies only to beds on dry soils; on heavy ones I advise covering the beds with dry leaves, over which a thatch of straw or bracken should be placed, and no manure made use of, alleys being dug to the depth of 1 foot or 1½ foot below the top of the beds in order to secure good drainage, and the top-dressing applied in the spring in the form of artificial manure in preference to stable or farmyard dung. Plants which will be needed for forcing should be covered with litter to keep out frost. Seedlings or young plants in beds on light land should be cut down, and the ground dressed with half-rotted manure; this will protect the roots and crowns which are near to the surface.

CARDOONS.—Those plants which have been blanchet by means of wrappings of brown paper or hay-bands, before hard frost, should be lifted with soil and roots, and placed in a cool, frost-proof shed, or laid in upright, packing the roots round with cocoa-nut fibre or leaf-mould, in which way they can be kept fit for use for a long time.

BROAD BEANS.—These may on warm, dry soils, be planted from the present time till the end of the month, but on heavy ones it is a waste of seed and labour to show at this season. A warm border or other piece of ground should be chosen for this sow-

ing, and it should have been well tilled and manured for some other earlier crop, and in that case no manure will be required, the plants standing the winter better when the soil is not very rich. Make the soil at the bottom of the drills moderately firm by treading it before sowing, and let them be drawn 2½ feet apart, and about 2½ inches deep. The varieties to sow at this season are Mazagan, Minster Longpod, and Dwarf Cluster.

PEAS.—On a light, well-drained sunny border, sow about November 15, any of the First Earlies—William I., Ringleader, or Veitch's Extra Early. The ground being well tilled, and only lightly manured. The drills may be placed as much as 7 or 8 feet apart to allow of early Potatos or Cauliflowers being planted between them; or they may be 3 feet apart. Make the drills as for Beans. Sow thickly, making them safe from the ravages of mice, slugs, and sparrows. After the rows are well filled in, cover them with fine soil and a layer of coal-ashes of about 1 inch thick. In the colder parts of the country, out of doors, early sowings of Peas are not to be advised. *C. J. Waite, Glenhurst, Esher.*

PLANTS AND THEIR CULTURE.

HARD-WOODED PLANTS OF THE GREENHOUSE.—At this season attention should be paid to the training of hard-wooded plants, care being taken to place very few sticks in the pots of plants with hair-like roots, such as Cape Heaths, and many of the New Holland plants, great injury resulting from the practice of putting a large number of them into the balls. In training specimen plants, only as many ties should be afforded as will keep the plants in form. On the other hand, plants which are grown mostly for supplying flowers for cutting will not require many sticks, and in some instances no training is necessary, as, by cutting the flowers, the plants are kept sufficiently in good shape. Look frequently over all the hard-wooded Heaths, and on the first signs of mildew, dust affected parts with flowers-of-sulphur. *Azalea indica* should be frequently examined, and if thrips are present, fumigation, or washing with an insecticide, should be resorted to. Admit air on all favourable occasions, but at the same time avoid admitting draughts of cold air in direct contact with the plants.

STATICES.—Plants of these are liable to be infested with thrips and red-spider, so the plants may be sponged at intervals, which is preferable to overhead syringing at this season. Let the night temperature during the winter fluctuate between 45° and 50°, affording a rise of 10° or 15° by day, according to the state of the outside temperature and the amount of ventilation that is afforded, as, if the temperature falls below the former point, the plants are liable to become stunted in growth. Less water will now be required and during the winter, but care should be taken not to allow the soil to become so dry as to cause injury.

CYCLAMENS.—These plants are now coming into flower, and they need to be kept well up to the light in a low pit or house, where fire-heat can be obtained when required, that is, to keep the temperature at night at about 45°, and by day 55° to 60°. Any plants still in cold frames should be taken to the greenhouse or pit without further delay.

MIGNONETTE.—Plants which have had their final shift and are well rooted should be assisted with weak dung-water, or some well-ried fertilizer, occasionally; and as the plants show for flower, steady them by putting a few neat sticks into each pot, and a girde of bast passed round these. The later batch of Mignonette plants should be kept well up to the glass, to prevent drawing.

EUCCHARIS AMAZONICA.—Plants which were broken up and divided, or repotted without disturbance of the roots in the spring or early summer, and have been grown in a brisk temperature, will now be showing flower freely, and at no other season are they more appreciated than now and during the winter. Every care should be taken of them, and the flowers saved from injury; keep the foliage clean by sponging it occasionally with clean water, the blooms showing to greater advantage when the foliage is glossy and clean. *R. Milner, Penrice Castle, Swansea.*

THE ORCHID HOUSES.

THE EAST INDIA-HOUSE.—With the month of November, *Cypripedium Spicerianum*, that gem amongst the gems, comes into flower. Time was when the price asked for this plant was excessive,

but now it may be bought for almost as many pence as pounds were formerly asked for it, and it seems in some degree to be losing the position which its beauty once commanded. Like many *Cypripeds*, it is of free growth, so long as plenty of heat and water are given it, it maturing little what kind of compost the plant was placed in. The best materials in which to grow it consist of fibrous peat chopped fine, turfy loam of equal quantities, and some coarse silver-sand. When watering this plant, which is needed almost every day, the water should be poured over the foliage of the plant; no fear need be felt of the centre rotting, or young growth either, if ventilation and artificial warmth are given in a proper manner. The above treatment will be found to suit the greater proportion of *Cypripediums*, except those of the *C. barbatum* section, which do not like loam or peat, but sphagnum moss alone, the roots of this section being large and fleshy. Any *Cypripediums* in need of repotting, may be done at any season; indeed, I make it a practice to repot almost everything as soon as may be after it comes under my charge, as by doing this, I know what state the plant is in, and how to treat it. Now that so little is to be done in repotting, the opportunity should be taken to clean all the plants with the sponge and brush, using soft-soapy water for the work, not neglecting to cleanse also the walls, stages, pots, and floors. Again, in the re-arrangement of the plants, they should be staged in such a manner as best suits their several requirements. Plants set up in banks upon the stages, the large plants behind in rows followed by smaller ones, and of necessity removed from the light, are not likely to do well. Some plants have a preference for a shady place, and these should be placed under larger plants that may require more light than those, and *vice versa*; some need more air than others, and some again delight in moisture. If the air be foggy and damp outside, a moderate amount only should be admitted, and a little extra heat kept up in the hot water-pipes. The temperature of the East India-house should now range about 63°; 60° for *Cattleyas*; 55° for the intermediate-house; and 45° to 50° for the *Odontoglossums*. *A. G. Cull, Parkfield, Hollow.*

THE HARDY FRUIT GARDEN.

The busy time in the fruit garden has arrived, and those who make the best use of the present month for pushing forward with all kinds of work therein will reap their reward.

RASPBERRIES.—These plants often occupy the same plot of ground for so long a time, and instead of heavy crops of fruit, the produce is lessened year by year. New plantations may now be made, and in such a way that the fruit can be easily protected from birds. The soil should be well manured with half-decayed dung, deeply dug; but as the Raspberry is a surface-rooter, the larger proportion of the manure should not be buried deeply. Break the subsoil, if at all impervious to water, but heavy soils may be rendered more porous and easy in working by mixing in plenty of road-sweepings, leaves, or half-decayed dung during the digging.

If suckers were lifted early in summer, planted, and attended to as regards watering in dry weather, they will have made good canes, which may be transplanted at this season in clumps of three at 6 inches apart, and at a distance of 4 or 5 feet from clump to clump. In the open quarters, I prefer clumps to rows closely planted. In spring, after all danger from frost is past, cut these canes back to half their length, or more if they are weak. These clumps will need no stakes to support them, the weight of the fruit bending them outwards and clear of the new canes. For plants in lines at 1 foot apart, 5 feet between the lines, is not too much. These canes are usually fastened to a wire espalier. No fruit should be allowed the first year after planting. New plantations made with nursery canes, or canes dug up at this season, should be cut down to the ground in early spring. Red Antwerp, Baumforth Seedling, and Superlative, with Belle de Fontenay as an autumn fruiter, are good varieties to grow.

STRAWBERRY BEDS.—These should be put in order for the season, mulching with manure, which should be close round each plant, especially the tender varieties, as Sir C. Napier. Young plants that were rooted early in pots or on turves, and planted out in August on well-prepared beds, will by this date have made grand fruiting crowns, and should, when the soil is moderately dry, be thoroughly trodden tight in the soil. *H. Markham, Merceorth Castle, Maudstone.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &C., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

THURSDAY,	Nov. 19—	Lincoln.
		SHOWS.
TUESDAY,	Nov. 17—	Twickenham (two days). Liverpool.
WEDNESDAY,	Nov. 18—	{ Ancient York Florists' (three days). Hull and East-Riding (two days). Spalding (two days). Cardiff (two days).
THURSDAY,	Nov. 19—	{ Scottish Horticultural Association (three days). Norwich (two days). York Chrysanthemum.
FRIDAY,	Nov. 20—	{ Stockport (two days). Chorley (two days).

SALES.

MONDAY	Nov. 16—	{ Large Importations of Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 17—	{ 9000 Liliun auratum, and other Hardy Bulbs and Plants, at Pro- theroe & Morris' Rooms.
WEDNESDAY,	Nov. 18—	{ Dutch Bulbs, Roses, Border Plants, at Stevens' Rooms. Azaleas, Ferns, Bulbs, &c., at Pro- theroe & Morris' Rooms. Nursery Stock, at the Kingston Hill Nursery, by Protheroe & Morris.
THURSDAY,	Nov. 19—	{ Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 20—	{ Important Sale of Orchids, at Pro- theroe & Morris' Rooms
SATURDAY,	Nov. 21—	{ Evergreens, as Laurels, Conifers, &c., at Protheroe & Morris' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°·9.

A PAMPHLET recently published by Mr. W. H. (BULLOCK) HALL, at the Cambridge University Press, gives some account of an experiment made by that gentleman, which does credit to his sagacity as well as to his benevolence. Believing that accessories like fruit-farming and market-gardening are indispensable to the success of small holdings, especially in Ireland, where the farms are so greatly sub-divided, he advocated in a letter to the then Lord-Lieutenant, the promotion of the cultivation of vegetables and bush fruit, especially in the south-west of that country. Soft fruits, choice vegetables, early Potatos, and flowers for market might, owing to the climatal conditions, readily be grown in that district. But correspondence with a Lord-Lieutenant is slow in producing results, so that Mr. HALL eventually adopted the plan of distributing among the school-masters, station-masters, and post-masters of the south-coast of the county of Cork, a number of fruit trees, with directions for planting and pruning them. One hundred and seventeen applicants, including seventy-three National School teachers, were thus provided with fruit trees at Mr. HALL's expense. With a view of inspecting the trees presented by him, Mr. HALL recently visited Ireland for the

sixth time. On this occasion he was accompanied by Mr. RIVERS, who availed himself of the opportunity to give some sound practical advice to the assembled tenants.

The neighbourhood of Youghal was generally admitted, both by its soil and climate, to be eminently adapted to the culture of fruit and vegetables. It is relatively sheltered, there is abundance of seaweed—furnishing potash, whilst Cork and Queenstown are within about an hour's journey by rail, and furnish a convenient market for the disposal of the produce both to the towns-people and to the numerous steamships which put into Queenstown on their way to and from the United States. We cannot follow the track of the travellers on their useful mission. It is evident, however, that Mr. HALL does not allow his enthusiasm to outrun his discretion. The evidence he lays before the reader amply confirms the propositions he lays down. In the Fingal district, south of Drogheda, an acre of ground is cultivated by the post-master, the fruit being represented by two-fifths of Raspberries, the same proportion of Gooseberries, and one-fifth currants and miscellaneous subjects, together with Potatos and Cabbages. The wife of the proprietor here exclaimed, "The fruit is a great paying business." The husband, however, adding that the Irish small farmers "are not refined to this business yet;" and then the significant note follows that the inhabitants of the prosperous Fingal district, where fruit cultivation is carried on to a considerable extent, are of Danish descent.

Near Skibbereen, Mr. FORTUNE, a post-master, sold Cabbage and Broccoli, the produce of one-eighth of an acre, for £4, the inhabitants holding up their hands in astonishment at the size of his Broccoli. Glandore, it is added, should become a centre for the production of early flowers, vegetables, and fruit, some of which might, it is said, be three weeks earlier in the market than the produce of the gardens near Dublin or Belfast. On his way home, Mr. HALL visited the Dublin fruit market, there to find English Plums and French Pears being sold by auction, but of Irish-grown fruit absolutely none. Mr. COLE, a fruit salesman, believes that the Irish peasant, now "entering for the first time into possession of his inheritance—the soil of Ireland, will, like the French after their Revolution, show the world what he can make of it." Mr. COLE advocates a system of small Government loans, to be guaranteed by the County Councils, to assist small farmers to start in fruit-growing. We cannot say anything about the political aspects of the case, but all parties must rejoice at the favourable prospects which appear to be opening out for the Irish peasantry and small farmers.

"I know," says Mr. HALL, in conclusion, "no nation more susceptible of refining influences than the Irish, and none where the women and children are more inherently gentle. They seem eminently suited to deal with fruits and flowers needing delicate handling. It is because I have been so painfully struck with the absence of such humanising settings as orchards and gardens round Irish homesteads, that I am contributing in a small way to supply the defect." By making the fact known, we believe Mr. HALL has taken the most effective means of inducing others to follow his example.

THE QUEEN has graciously consented to become patron of the International Fruit Show now being promoted by an influential body of horticulturists, of whom Sir JAMES WHITEHEAD is the chair-

man. The Exhibition will be held in London next year.

THE LINNEAN SOCIETY.—An evening meeting of this society will be held on November 19, at 8 P.M., when the following papers will be read:—1. "Notes on the original Portraits of Linnæus, made during a recent visit to Sweden," by Mr. W. CARRUTHERS, F.R.S. 2. "On a new Fossil Plant from the Lower Coal Measures," by Mr. T. HICK.

"BOTANICAL MAGAZINE."—The plants figured in the November number are the following:—

Dryophloeus appendiculata, t. 7202.—A remarkable Palm, native of New Guinea, with a slender ringed stem, and a terminal crown of pinnate leaves, the segments of which are wedge-shaped at the base, dividing at the apex into shallow triangular lobes; margins finely dentate; panicles issuing from the stem below the leaves. The flowers are greenish-white. The analyses show that the floral axis is raised above the sepals, and bears from its sides the petals and the numerous stamens as well as the ovary. Kew.

Pinguicula lutea, t. 7203.—A species with nearly regular yellow spurred flowers. Native of the Southern States of North America. Kew.

Angræcum fastuosum, t. 7204.—The Madagascar species described in the *Gardeners' Chronicle*, 1881, and again in 1885, part i., p. 533, fig. 96. Kew.

Cercus procumbens, t. 7205.—A Mexican species with spreading 4 to 5-angled stems, with tufts of spines, the central spine being much the longest. The flowers are 4 inches across, rose-coloured, with a greenish centre. Kew.

Disa tripetaloides, t. 7206.—The species described in the *Gardeners' Chronicle*, 1889, vol. i., p. 360; and figured in 1890, vol. i., p. 766, f. 127. Introduced from the Cape by Mr. J. O'BRIEN. The plant is very hardy, having been frozen hard in a cold frame without injury.

HORTICULTURAL INSTRUCTION.—It is with great pleasure that we are enabled to report that Mr. LEWIS CASTLE, one of the members of the staff of the *Journal of Horticulture*, and the Hon. Secretary of the British Fruit Growers' Association, has been appointed chief instructor in horticulture to the County Council of Hampshire. For us, who for so many years past, have advocated some such scheme as that now adopted, it is a great matter for satisfaction that such men as Mr. FISH, Messrs. WRIGHT and CASTLE are among those selected to carry out the provisions of the Technical Education Act. In so doing, almost everything depends upon the men employed in the work, but if, following in the steps of our Belgian and French friends, the authorities appoint men like those we have named, we have no doubt but that in a short time after a period of experiment, and perhaps some failures, a large measure of success will be arrived at. The important step taken by the County Council of Kent is alluded to in another column.

A NEW POISON IN CONIUM MACULATUM.—Chemists are always on the look-out for new substances by the discovery of which they may gain fame amongst their *confères*. If when found, they can manage to saddle it with a name extending over many syllables, and occupying a considerable period of time in its pronunciation, so much the better; is it not more glorious! Within the past four years a number of remarkable poisons belonging to the class of alkaloids have been discovered by enterprising chemists who have deserted the synthetic methods of the laboratory for the examination of plants. In doing this they are performing good services, as all know, and we have no doubt but that in a short time after a period of experiment, and perhaps some failures, a large measure of success will be arrived at. The important step taken by the County Council of Kent is alluded to in another column.

by its discoverer, Herr A. LADENBERG, who, it must be admitted, has shown great moderation in his choice of a name, considering the chances that were open to him of selecting a long one.

CHERRIES IN SEPTEMBER.—Mr. J. C. SCHMIDT, of Erfurt, writes as follows:—"I take the liberty of calling attention to a very late-ripening Cherry, called 'Hochgenuss von Erfurt' [Great satisfaction from Erfurt]. This Cherry is a very remarkable one, as the fruits begin to ripen when all other Cherries are over, namely, in the month of

ripe, half-ripe, and unripe fruits at the same time, because the fruits do not all ripen at the same time. The fruit itself is of a dark-red colour, of good size, and has a fine sourish-vinous taste. The history of this new sort of late-ripening Cherry tree is this: It is now some years ago that Mr. HEINRICH SCHMIDT, the former proprietor of the establishment, J. C. SCHMIDT, at Erfurt, found in a neglected nursery garden a wild Cherry tree, which, cultivated by him, became a nice, well-grown tree of very good appearance, and having the remarkable peculiarity of bearing in great number ripe fruits in

vigorous Groundsel in flower growing on a piece of old sponge that had been lain aside, and which furnished the requisite moisture, and a little more. It is astonishing how small a proportion of solid matter is extracted from the soil by plants in proportion to their bulk. Air and Water, Light and Heat, are each and all more potent factors in the growth of plants than is soil.

CUNONIA CAPENSIS.—Mr. BURBIDGE recently favoured us with a specimen of this effective greenhouse shrub, which, though an old inhabitant of



FIG. 80.—PROFESSOR M. TOSTER'S GARDEN AT SPELFORDS, CAMBRIDGE. (SEE P. 579.)

September. It is an agreeable and surprising sight for every lover of Cherries to see a tree in September laden with ripe and delicious fruits. The first ripe fruits are seen in the early days of September, while there are many fruits remain until the 15th or 20th of October. It is a well-known fact that fruits offered and brought to market at a time when nobody expects to find them there realise high prices, and, I think, in every case better than fruits which are offered when the market is full of them. It will, therefore, be profitable to the nurseryman and farmer to grow the 'Hochgenuss von Erfurt.' During the whole time of the ripening of the fruits, we find on the tree

September and October. The firm, J. C. SCHMIDT, has now a good stock of 'Hochgenuss von Erfurt' ready for distribution." Mr. SCHMIDT's letter was accompanied by a woodcut bearing out his statements, and taken from a photograph executed on September 12.

CULTURE ON SPONGE.—We have all heard, and many have practised, the cultivation of Mustard and Cress upon moistened flannel, and we know from experiment that the growth can be prolonged beyond the germination stage for a much longer period than could be anticipated. We were reminded of this the other day on the receipt from Mr. BURBIDGE of a

botanic gardens, is rarely seen out of them. This is to be regretted, for it is decidedly a handsome plant, with bold pinnate foliage, and long dense spikes of white flowers. The stipules are remarkable, being broad and leafy, and forming a flat case, at the bottom of which the young leaves are snugly enconced out of harm's way. Another peculiarity we observed in Mr. BURBIDGE'S specimen, is the presence of a resinous or milky juice, which exudes freely from the inner side of the base of the stipules, which appears to be provided also with numerous tubercles, perhaps of a glandular nature. We have not been able to examine the microscopical appearances, but we com-

mend them to some of the biological students of Trinity College as a promising subject for examination. *Cunonia* is not far off from *Escallonia*, which yields a coloured resinous juice.

MAIZE CULTURE.—The past summer was not such that one would have deemed propitious to the growth of Maize. Mr. LEACH, the gardener to the Duke of NORTHUMBERLAND, at Albury, near Guildford, is one of those who, recognising the significance of the old saying, that "one does not know till one tries," forthwith proceeds to try. The result as shown us recently was decidedly satisfactory, so much so, that in Mr. LEACH'S opinion Maize would form a profitable crop, the grain being used for cattle or poultry feeding.

ORCHIDS IN BRUSSELS.—Our correspondent notes that in the collection of Mr. PETERS there are now several fine forms of *Cattleya labiata* var. *autumnalis* in flower, part of an importation of some thousands of plants, while a second lot is expected shortly. Poor *C. labiata*! there will not be very much of it left before long. In the same establishment is a specimen of *Vanda cœrulea* with ten spikes, and very large flowers; a *Cymbidium giganteum* with five spikes, a fine *Cypripedium Sallieri* Hyeaenum of a translucent golden yellow, a specimen of *Cypripedium superbium* var. *Demidoff*, &c.

CHRYSANTHEMUMS IN BELGIUM.—Never have so many of these flowers been seen as this autumn. The little towns and villages vie with the large cities in their culture of the Chrysanthemum.

HOLLAND.—A society for the promotion of the study of the diseases of plants has been established at Amsterdam. M. J. H. KRELAG, of Haarlem, is the President; Dr. RITZEMA BOS, of Wagenengen, and Dr. H. W. HEINSIUS, of Amersfoort, act as Secretaries; and to one or other of them all communications should be addressed. Among the committee we also note the names of Professor HUGO DE VRIES and Dr. J. H. WAKKER, so that the Society starts under promising auspices.

L'ORCHIDÉENNE SOCIETY OF BRUSSELS.—A special feature of the exhibition of this Society on November 8 was the number of forms of *Cattleya Warocqueana*, the most striking collection being that of Mr. WAROCQUÉ, who showed twenty-six plants, almost all different in colouring, and comprising the fine varieties which attracted so much attention in Brussels and London last year. A variety *Ame-thystina* had flowers nearly 9 inches wide and 6 inches long; width of anterior lobe of lip 3 inches; width of petals, about 3½ inches. An authentic example of the old variety *Cattleya labiata rubra-Pescatorei*, exhibited by Mr. VAN IMSCHOOT—afforded a most interesting comparison—being absolutely identical with the beautiful forms of *Warocqueana*, but it was much inferior to the fine forms exhibited by Mr. WAROCQUÉ, to whom a special Gold Medal was unanimously awarded for his exhibition as a whole. To a specimen in the same lot, having one hundred pseudobulbs, eighty leaves, and forty-eight flowers, a Cultural Certificate was unanimously awarded. Amongst other exhibits may be mentioned, *Odontoglossum Inseayi splendens*, *Oncidium phalenopsis* and others, from Mr. A. VAN IMSCHOOT; the curious *Cypripedium Lindenii*, from Mr. PAWELS; *Cypripedium Moulmeinense*, and many others from Mr. DALLIÈRE; two fine *Cattleyas Warocqueana*, and the *Cypripedium albo-purpureum*, from Dr. CAUWELAERT; *Cattleya El Dorado* var. *Crocata*, from Mr. MARTIN CAHUZAC; *Dendrobium bigibbum*, from Dr. CAPART; a fine *Brassia finetiana*, a new species, with very attractive colours; *Cypripedium Rodigasianum* × *Burlingtonia granadensis-rosea*, delicate rose colour; a rare *Odontoglossum* var. *striatum*, with spots of dull red; *Dendrobium phalenopsis*, *Cypripedium tonsum*, and *C. Harrisianum*; *C. superbum*, from Mr. LINDEN, and lastly, a beautiful *Cattleya virginalis* from Mr. H. SCHMITZ.

CLIMBING NIPHETOS ROSE.—A German correspondent, advertising to an article on this subject at p. 424, says that, having procured plants from various nurseries (not specified), purporting to be of climbing habit, he has always found them destitute of that characteristic; and one German nurseryman is reported to have declined to execute an order, as he found no difference between the so-called climber and the ordinary form. This is a serious allegation, but one which demands the notice of Rose growers. It may well be that the climbing habit is not assumed at first.

PICEA PUNGENS AND P. ELGELMANNI: A CORRECTION.—By an unfortunate oversight we last week suffered a misprint to pass unnoticed, and one which completely misrepresented our meaning. *P. pungens*, especially in its glaucous forms, is greatly superior to *P. Engelmanni* for cultivation in this country.

THE EFFECTS OF ARTIFICIAL MANURING.—In some experiments by W. VON KNIEREIN on the effects of artificial manuring, which are reported in *Beidermann's Centralblatt*, the following substances were used, namely, gypsum, lime, potash, superphosphate, bone-meal, potash and superphosphate mixed, superphosphate and ammonium sulphate mixed. Compared with plots of similar soil, which were not treated with any manure, the plots that were so treated gave much more produce. In every case, except where superphosphate was used alone, the beneficial action of the manure extended to the second year's crop.

ASSIMILATION IN LICHENS.—Under favourable conditions of light, humidity, and season, all Lichens can decompose the carbonic acid of the atmosphere so energetically, that the quantity decomposed exceeds that evolved by the Lichen doing the process of respiration, and consequently the organism gains in carbon. The intensity of the assimilation of Lichens varies enormously, however, with the species, and is relatively strong with such Lichens as *Cladonia* or *Parmelia*, but is very feeble in the case of such Lichens as *Lecidea*, for instance. When all other conditions are equal, direct sunlight is much more favourable to the assimilation of carbon in these plants than is diffused light. These observations are due to Mons. H. JUELLE, who recently read a paper upon the subject before the Paris Academy of Science.

VANDA CÆRULEA, SANDERS' VAR. Ordinary *V. cœrulea* appears as a white flower, with veining and flushing of blue, but this grand variety reverses that order of things, and appears as a perfectly-formed, large, rather deep-blue flower, with a little spotting of white showing between the bright dark-lilac chequering, so clearly are the bars of colouring placed. One reason for the unusual predominance of blue in this over other forms is, that the reverse sides of the flowers are as dark and as brightly coloured as the front. The lip is violet coloured, with the upper part of the keels at the base white. The flowers are almost circular, 4½ inches across, the petals being 1½ inch in width. I have never seen anything like this variety for form and richness of colouring combined. It is now in flower with Messrs. F. SANDER & Co., writes Mr. JAMES O'BRIEN.

CYPRIPEDIUM INSIGNE BOHNHOPIANUM, NEW VAR.—In advancing this unique form, one has not to contend with the endless complication which arises among those with crimson spots, viz., those of the *Maulei* group. The chaste and lovely thing is entirely different. The labellum and petals have little to mark them from an ordinary *C. insigne*, except that the yellowish body-colour is suffused with a purplish-brown instead of the usual markings, and the staminate is rich yellow, with purple hairs at the back. But the sepals are the extraordinary features, and especially the upper one. The lower sepal is ovate oblong, and larger or longer than in the type. The dorsal sepal is large, flat,

and well displayed. The lower half has a circular area of pale purplish-brown; this, in its turn, is encircled by a ¼-inch wide band of emerald-green, and the remaining upper portion of the sepal is pure white, the white extending and narrowing downwards even to the base. There are no spots anywhere about the flower. It will be highly prized by some collectors of *Cypripedia*, and justly so, for it is handsome and distinct.

CHRYSANTHEMUM AND FRUIT EXHIBITION AT EDINBURGH.—The winter exhibition of the Scottish Horticultural Association, which is now looked forward to as one of the most attractive events of the year in Edinburgh, will be held in the Waverley Market from the 19th to the 21st inst., and promises to equal, if it does not surpass, all previous shows of Chrysanthemums. The fruit section will be a source of the greatest interest and attraction to our pomologists, as the Government of the United States have intimated through Mr. H. E. VAN DEWAN, the State pomologist, their intention to exhibit a collection of the fruits of the United States. As this is believed to be the first occasion on which such an interesting exhibit has appeared at any horticultural exhibition in Britain, it will be examined and criticised by pomologists and fruit growers with great care and zest, and will be an object of much attraction to the multitude who consume fruit. Intimation has also been received from the government of Nova Scotia, through Dr. GEORGE LAWSON, Secretary for Agriculture, to exhibit one of their splendid displays of the Apples for which that enterprising colony is so famed, and which of late years have been so well exhibited at the Edinburgh fruit shows. The fruit grown in the British Isles and the Channel Islands is also to be present in considerable force, so that to fruit growers and consumers the show is likely to afford a rare treat.

CONTINENTAL NOVELTIES.

ZINNIA DOUBLE-STRIPED PERFECTION.

THROUGH the kindness of M. C. LORENZ, seed grower, of Erfurt, we are enabled to afford our readers a figure (p. 587) of a very fine *Zinnia* of a distinct character. Hitherto, *Zinnias* have been "sells" in the sense of the flowers possessing but one colour, although in the colours of the varieties, there was much diversity. We have in the novelty figured a large and faultlessly-shaped flower, of a pure golden-yellow colour, elegantly striped with bright scarlet. The mixture of these two colours is very effective, and makes this a valuable variety for decorative purposes. About 70 per cent. come true from seed.

DOUBLE-FRINGED PETUNIA SUNSET.

ANOTHER of M. C. LORENZ'S novelties is the so-called double-fringed *Petunia Sunset*, a flower of carmine-rose colour, a distinct new colour of value for decoration purposes (see p. 589). The plant grows about 2 feet in height, and produces a great profusion of prettily-fringed flowers. During the sojourn of their Imperial Majesties the Emperor and Empress of Germany at Erfurt in September last, M. LORENZ decorated the imperial pavilion with this new variety, which excited much admiration.

HOME CORRESPONDENCE.

CHRYSANTHEMUM PROSPECTS AT WOOD-HATCH.—Having had occasion lately to visit these gardens, some account of the prospects for the coming season of so well-known a grower as Mr. Salter may interest many of your readers. The prevalent dampness in the air has, of course, affected the plants very much; this is especially seen in the flowers of the incurved varieties, but by unremitting care and attention, the affected blooms are being gradually got healthy again. The damp has not affected the *Anemone*-flowered varieties so much, and Mons. C. Lebosqz was bearing some magnificent blooms. Prominent varieties in the Woodhatch

collection are Mr. C. Orbard, John Lambert, E. Molyneux, Criterion, Casar Costa, Cullingfordi, Gloire de Rocher, Maiden's Blush, Etoile de Lyon, Val d'Andorre, M. R. Bahaunt, Refulgens, Count de Germiny. Of the new ones, W. H. Lincoln and Madame Prunard seemed the best. The bad weather has not affected the Pompons so much, and whoever beats Mr. Salter in these will have to be far above the average, some of the blooms of Black Douglas, Prince of Orange, and Rubra perfecta being as good as they can possibly be grown. *Vagabond*.

IRON v. WOOD IN GLASS-HOUSES.—In the last issue of your paper, I notice, under "Home Correspondence," an article on "Iron v. Wood Green-houses." Will you kindly allow us to draw attention to the fact, that to obviate the difficulty of radiation, &c., in iron-houses, as they used to be built years ago, which were entirely of iron, with sash-burs about 4 inches apart, ours are made with bars 18 inches apart, or about one-fourth the old number; and the woodwork is of the best red seasoned deal, unless otherwise ordered, which is completely covered

to condemn Mont Blanc rockeries. "H. E." has no doubt seen how well the little gems grow on the Alps, Pyrenees, and Apennines, where they can be seen in hundreds in almost every crevice. Surely this is a good lesson for us all. Why not imitate Nature as far as we can? why not make the garden picturesque with rockwork as well as alpine plants? In a well-arranged rockery, in the dead of winter, you can roam about without the assistance of a ladder such as "H. E." refers to. Then, again, you can have your Mont Blanc beautifully arranged with small evergreen shrubs and foliage plants, which will give your rockery a lively appearance in winter, when the alpine are mostly gone to rest; whereas, on "H. E.'s" principle, there would be nothing to look at but a cemetery. And I am afraid many ladies would object to ascend the heights of a ladder to look at a small plant in flower. About three years ago I had the pleasure of making a rockery for a gentleman on the Mont Blanc system, which has given every satisfaction. I mention this rockery in particular, because previously the gentleman had had one of his own construction, upon which he could never

result had they been planted in pockets or behind a slab? You can never see the beauty of a plant until it is fully developed, and develop the plant cannot in a small pocket. I might mention in conclusion, that the Saponaria to which I refer is planted behind the summit of a rock about 3 feet deep. Now the plant nearly covers the rock to the bottom, forming one mass of brilliant colour. Adjoining is *Lithospermum prostratum*, which covers with blossom a stone about the same size. Such features as these you can never expect to see where alpine are grown on "H. E.'s" principle. *W. A. C., York*.

SUBJECTS OF STUDY FOR GARDENERS.—I have been reading with interest the notes referring to the "subjects of study for young gardeners," and I thought that a few lines from a young gardener would not be out of place. It is needless to say, that if young gardeners wish to follow the footsteps of the best gardeners past and present, it is absolutely necessary to devote much of our spare time to study. We, too, have gardeners who set us good examples—a fact which Mr. F. W. Burbidge has commented upon. I think if young men would only take to the study of the various subjects relating to gardening, reading their *Gardeners' Chronicle* regularly and intelligently, they would acquire a still greater liking for it, and feel more eager to embrace every opportunity afforded them to such study. I can speak from experience, that evening study on topics relating to gardening is a pleasurable pastime, and when one's profession becomes a pleasure to them (as it ought to be), they are more likely to give satisfaction to the head gardener, and pay every attention to their duties, and consequently the head gardener can conscientiously recommend them to a worthier position. If we, as young gardeners, ever wish to attain a position where it may fall to our lot to have the management of extensive places, where a succession of fruit, flowers, and vegetables of high-class quality are demanded, as well as a well-kept pleasure-ground and flower garden, I feel sure we ought to waste but little time. Much can be learnt from this valuable paper by following it regularly, there being always something of interest brought to their notice, as well as a Calendar of operations for the week. I do not think too much can be said in favour of Cassell's *Popular Educator*, there being much matter in it of great value to gardeners, and written in a simple and clear way, so that if any one has a desire to learn at all, he cannot fail to do so. I think, too, it would help us young bothy men if space could be spared from week to week in this paper where we could discuss different gardening topics, or if papers on different subjects were allowed to be sent by young gardeners occasionally, and small prizes awarded for the best. It would be encouraging. *Bothnian*.



FIG. 81.—ZINNIA, DOUBLE-STRIPED PERFECTION: SCARLET AND GOLD. (SEE P. 586)

by the galvanised bars and glass, and thoroughly protected from weather, thus minimising radiation, &c., almost as well as in houses entirely of wood. This is really an important feature, and one apparently lost sight of in your correspondent's letter. *E. Newton & Co.*

ROCKERIES—I should have thought "H. E." would have been the last man in the world to condemn the so-called Mont Blanc system of rockwork. As "H. E." no doubt is well aware, there are many ways of constructing a rockery to grow alpine really well. I could mention several rockeries on the Mont Blanc system where plants will not grow, for the simple reason that the construction has been wrong. That is the commonest fault, and the reason why so many plants fail to grow. If the work has been done by a practical man, there is no fear but what the plants will do well, because every plant is in its proper position. If "H. E." wants to go in for quantity, why not grow them in pots and elevate them, in accordance with his views; they could be grown thus with far less labour than with the hideous-looking slabs, which resemble a churchyard far more than a flower garden. I think "H. E." is going away from Nature altogether when he tries

get anything to live longer than, on an average, about twelve months (I may mention that the gentleman's rockery was built on "H. E.'s" principle), for the simple reason that the pockets were not large enough to admit soil enough to keep a plant alive longer than that period. My experience is, give a plant room to grow, good soil and drainage, and the plant will overcome every trouble, and do well. There are more plants lost with too much nursing and coddling than in any other way. If people had to treat alpine as alpine, and not as half-hardy plants, they would find out much to their advantage in growing these little gems. I could give scores of instances to prove the truth of my statement. I might mention another piece of rockwork which was made this spring, and planted in May with plants, such as *Androsace carnea eximia*, *A. vitaliana*, *Anthyllis montana rubra*, *Saponaria ocyroides splendidissima*, *Arenaria Huteri*, and *Erodium guttatum* (the four last-named new plants were offered for the first time this year by James Backhouse & Son, York), *Polemonium confertum*, *Hypericum cuneatum*, *H. reptans*, *Lithospermum Gastoni*, and several other rare alpine. Most of the above covered a space of from 18 to 21 square inches with this summer's growth. What would have been the

This is a subject which has attracted my attention for several years past, and it has again been excited by the article on p. 489. If I may be permitted to express an opinion, I should say that any scheme which is not for the benefit of the present generation of gardeners, will eventually come in competition with them. With this in view, I should be in favour of lectures at local centres, with an examining body in London, organised and carried out on the lines of the Science and Art Department, as indicated in the *Principles of Agriculture*. I believe a large number of gardeners would avail themselves of such means of study, and the local centres might be in connection with, or in places where gardeners' mutual improvement societies already exist; and for text-books, some of the science primers recommended by Mr. Burbidge would be found very useful if there was some one appointed to explain how they link together, and to teach the principles of agri-horticulture. Until such time as lectures on gardening topics are given, I advise young gardeners who can attend lectures on the principles of agriculture to do so, in order to acquire an insight into the composition of soils, and the action of manures. *C. F.*

STREPTOCARPUS, NEW HYBRIDS.—I should like to say a word in favour of these pretty and interesting plants. I purchased a packet of seeds, and they were duly sown as directed on the cover, but they positively refused to germinate, either in a stove or intermediate house. But, after placing them in a hotbed, they came up, as gardeners say, "as thick as hail," and in due time they were placed in thumb pots, and the largest in 3 inch pots. Since the beginning of July, they have been flowering very freely, their *Gloxinia*-like blooms are very pleasing. The colours range from pure white through the various

shades of blue to red, and they are most useful for decoration in small vases. I have had flowers last quite three weeks in water. Lovers of interesting and pretty things could not do better than procure some seed. These *Streptocarpus* hybrids are of the easiest possible culture. *Walter Grace, Bickton, Fordingbridge.*

DAHURICUS—Mr. Baker has kindly explained to me the reason of this geographical specific name of plants, about which I asked a question last week, only because the name of the country which it denotes seems to have become obsolete in English atlases. The botanist Ledebour divided the Russian empire into ten botanical districts, of which Dauria, Davuria, or Dahuria is one. It lies to the east of Lake Baikal, extending to the frontier of the empire of China, say from 110° to 130° east longitude, and from 50° to 55° north latitude, the latitude thus corresponding with the southern portion of Great Britain. Though comparatively small, Mr. Baker remarks it is very rich botanically. *C. Wolley Dod, Edge Hall, Malpas.*

LILIUM OCHROLEUCUM.—In your last issue, Mr. Baker asks where Dr. Wallich described this Lily as "dull yellow." If he will refer to the *Gardeners' Chronicle* for August 25, 1855, p. 564, he will find a note respecting *L. nepalense*, with a reference to Wallich's *Plant. As. Rar.*, vol. iii, t. 291, under which figure Mr. Baker stated that Wallich included his *L. ochroleucum*. Dr. Lindley there wrote, doubtless on good authority, "According to Dr. Wallich, the flowers are dull yellow," adding, however, that it did not agree with the Lily then under notice, which was manifestly, from the description given of it, neither *L. nepalense* nor *L. ochroleucum*, but *L. polyphyllum*. I have not the privilege of being able to refer to Wallich's *Plant. As. Rar.*, so should esteem it a favour if Mr. Baker will kindly answer the inquiry made in my last communication, viz., whether the figure of the Lily in the above work, t. 291, bears more resemblance to the true *nepalense*, as figured in the *Garden*, than does the drawing of *nepalense* given in Mr. Elwes' *Monograph*, which was drawn by Mr. Fitch from the specimen of *L. ochroleucum*, Wallich? I would also call Mr. Baker's attention to the page illustration at p. 77 of the *Gardeners' Chronicle*, July 17, 1880; it is given as *L. nepalense*, but is really a very excellent figure of what Mr. Baker has named *Wallichianum superbum*. Perhaps the editor could inform us from what material the woodcut in question was produced. *J. M.* [It is too far back to trace. The drawing was by Mr. Fitch.]

COLOUR OF GRASS.—Wind-blown grass with a silvery hue is to me a fine sight; it is a finer quality than mere brilliancy of colour—but this appearance is not to be found in all grasses. How is this? I notice it chiefly, almost entirely, on clay soils; is this because special varieties grow there, or would the same species differ in this particular when grown on sandy or clay soils? *S. James.* [The colour would depend probably on the number and distribution of the stomata, and these again would vary according to the conditions under which the plant was growing. *Ed.*]

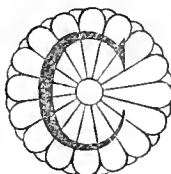
A GOOD CROP OF ONIONS.—I have grown at my place this year thirty-five bushels of Onions on 8 rods, and quite half the number of bulbs were fully 12 inches round, the largest coming off the lightest ground; and yet they say in most gardening books, give heavy soil for Onions to grow in. I suppose this is what may be called a good crop. I found it quite difficult to harvest them this year—nothing but wet weather week after week. *F. S. Fletcher, The Maples, Ottershaw, Chertsey.* [The crop amounted to 1 bushel of bulbs on each 7 square yards of land—a very good crop indeed. *Ed.*]

JERUSALEM ARTICHOKE.—Mr. Dod (p. 526) does not tell us who the botanists are who have long since corrected the error as to the native country of the Jerusalem Artichoke, nor where that country is. He also differs from De Candolle, Caspar Bauhin, Lindley, Loudon, Paxton, Steudel, Wood, and other American botanists as to its being a native of Brazil. All these say it is, but he says there is no *Helianthus* native of Brazil, and the two or three found in Peru are all of fruticose habit. Where is the fruticose habit of *Helianthus annuus*, a native of Peru? On the page indicated (590) of vol. v., De Candolle's *Prodromus*, the two fruticose plants there mentioned are neither of them natives of Peru, as Mr. D. would lead us to suppose, and sp. No. 36 (*H. tuberosus*) is there stated as a native of

Brazil, and has no synonym, either of Asa Gray or any other authority. Sp. No. 13 (*H. dromioides*) has three synonyms, none of which is *H. tuberosus*; and sp. No. 33 (*H. giganteus*) is also quoted by De Candolle as a distinct species, which it would be a serious libel upon Asa Gray to say that he made either of these non-tuberosus plants synonymous with *H. tuberosus*, if even their nationality would allow it. The *Helianthus*, as a genus, came over to Europe from America, and probably took their name Girasol to Italy. The Jerusalem Artichoke brought its Spanish name with it from Brazil, and it may be that it acquired the name Artichoki on the Continent before it came to our shores. It would be a mistake to take up your columns with what can be obtained from books, therefore Mr. Dod must refer to Pryor on popular names of plants for an answer to his questions, where he can be satisfied in the most of them, excepting, of course, Jerusalem Gourd, which Mr. Dod must say more about, before I say anything in disparagement of what I believe is a very old friend in disguise. I hope shortly to prove that the Jerusalem Artichoke was known to all the old Spanish writers on Peru as well as to Columbus, and I believe it to be mentioned by T. Hariot as a vegetable in Virginia, and possibly prove its greater right to the name of Potato than *Solanum tuberosum* with which it came to America, and being harder travelled further north into Canada. All American botanists (Asa Gray, of course, included), say the Jerusalem Artichoke is naturalised in hedge-rows and ends of fields, really escaped from cultivation, but all, except A. Gray, pledge themselves to Brazil as the native country; and probably he thought with me that Peru was nearer the mark. I was sanguine myself at one time, that they should be proved natives of Canada, and would gladly hail evidence of this, but the weight is so much against it. The earliest representation of the plant that I have seen is a subfruticose plant from Peru, but a very different part of South America than that to which Mr. Dod drew my attention at p. 590 of De Candolle's fifth volume of the *Prodromus*. May I ask also where the quotation at the end of my paper (p. 482), which was taken from the *Gardeners' Chronicle*, December 15, 1888, has been contradicted? *Wm. Etherington Dixon, November 3.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.



CHRYSANTHEMUMS formed the subject of the great autumn competition and fete of the National Chrysanthemum Society opened on Tuesday last at the Royal Aquarium, Westminster, and, notwithstanding the past unfavourable season, there was a capital display of bloom. The cut flowers were not, as a whole, so large as those exhibited on previous occasions, although some very creditable examples were staged, while the groups showed a slight improvement on those of last year. It is to be regretted, however, that a more suitable place cannot be found for such a fine display, for in many parts of the building it was utterly impossible to discern the true colours of the flowers, so bad was the light. Apart from this, too, the incessant noise caused by the numerous other entertainments was by no means conducive to that pleasant quietude which should characterise all floral exhibitions.

THE SOCIETIES' COMPETITION.

This class, being open to Chrysanthemum and horticultural societies of the United Kingdom, is usually of an interesting character, although the entries on this occasion were not so numerous as might have been expected. The stipulations are, that forty-eight blooms, twenty-four Japanese, and the same number of incurves, shall be staged, the flowers to have been grown by members of the societies exhibiting. The leading prize, which consists of a Challenge Trophy and £10, the former to be held for the year by the President of the winning Society, was awarded to the Havant Chrysanthemum Society, the growers of the blooms being Mr. J. Agate, Mr. N. Fuller, Mr. C. Penford, Mr. C. Hoskins, and Mr. A. Payne. In this collection some of the flowers were very fine, particularly the Japanese, although a few of them had weak centres. Among the best were Sunflower, E. Molyneux, Mons. Berard,

Ralph Brocklebank, Madame J. Laing, G. W. Clarke, W. W. Coles, Gloriosum, Vivand Morel, and W. H. Lincoln. The incurved blooms were smaller than usual, but very solid, the best shown being Lord Wolseley, Empress of India, Princess of Teck, Queen of England, Violet Tomlin, Miss Haggas, Jeanne d'Arc, Hero of Stoke Newington, and Mr. Shipman. The 2nd prize was awarded the St. Neots Chrysanthemum Society, which won the leading honours last year, for a very creditable collection of blooms. In this exhibit some capital blooms of Etoile de Lyon, Boule d'Or, Florence Davis, Mons. Bernard, Lilian Bird, Vivand Morel, and Violet Rose, were noticeable among the Japanese varieties; while of the incurved kinds Violet Tomlin, Alfred Salter, Princess of Wales, Queen of England, Robert Cannell, and Golden Empress were very fine. It is only fair to say that there were but two growers, namely, Mr. J. Myra and Mr. Petfield, in this instance, against five in the case of the winning Society. The 3rd prize went to the Wimbledon Horticultural Society for a collection of well-grown blooms, the growers being Mr. C. Gibson, W. B. Faulkner, Esq., and G. Walker, Esq. In each case the flowers were fresh and well developed.

CUT BLOOMS.

Incurved.—The principal class in this section was that for forty-eight blooms, consisting of not fewer than twenty-four varieties. The entries were not very numerous, but among those who did exhibit the competition was somewhat keen. The leading honours fell to Messrs. W. & G. Drover, nurserymen, Fareham, who staged a collection of clean and solid blooms. The majority of the flowers were of uniform size, and the best being John Lambert, Lord Alcester, Jeanne d'Arc, Queen of England, Empress of India, Lady Carey, Princess Teck, Princess of Wales, Hero of Stoke Newington, and Violet Tomlin. Mr. J. Doughty, gr. to Mrs. Tomlin, Angley Park, Cranbrook, was awarded 2nd, for a scarcely less creditable lot, many blooms in this collection being very neat and compact; among others deserving of notice were Jardin des Plantes, Lord Wolseley, Empress of India, J. Lambert, Alfred Salter, and Pink Venus. Mr. R. Petfield, gr. to A. J. Thornhill, Esq., Diddington, Buckenden, came in 3rd, with a stand of large but somewhat loose blooms; Mr. W. G. Ray, Teynham, Sittingbourne, was awarded 4th prize; Mr. J. Agate, Havant, 5th, in this class.

For twenty-four incurved varieties, distinct, Mr. C. W. Knowles, gr. to Mrs. Chas. Egerton, Solna, Rochester, was placed 1st, for rather small though solid blooms. Conspicuous in this collection were Lady Harding, Empress Eugénie, Empress of India, Golden Empress, Barbara, Refulgens, A. Salter, and Mrs. Shipman. Mr. J. Myers, gr. to the Earl of Sandwich, Hinchbrook, Huntingdon, was awarded 2nd for a regular lot, among which Miss Haggas, Golden Empress, J. Doughty, and Prince Alfred were very good; the 3rd prize falling to Mr. A. Ivies, gr. to E. C. Jukes, Esq., Hadley Lodge, High Barnet, for a stand of neat blooms.

The best stand of twelve incurved varieties came from Mr. H. Shoemith, gr. to M. Hodgson, Esq., Shirley, Croydon, the blooms being very fine and even. The flowers were so regular that it is almost impossible to individualise any particular varieties, although Golden Empress of India, Mrs. Heale, J. Lambert, Lord Alcester, and Mrs. S. Coleman may be mentioned as being specially good. The 2nd prize in this class was gained by Mr. J. Douglas, gr. to Mrs. Whitbourne, Great Geareia, Ilford, for well-developed blooms; and Mr. H. Lees, gr. to the Duchess of Montrose, Sefton Lodge, Newmarket, came in 3rd, with creditable examples.

Mr. J. Myers, Hinchbrook, staged the best six incurved blooms, one variety only, the kind being Golden Empress; the flowers were large and yet compact. Mr. Shoemith followed a good 2nd, with well-grown examples of Lord Alcester; and Mr. Matthew Russell, gr. to Dr. C. Thews, Henfield, Sussex, was placed 3rd, with good blooms of Violet Tomlin.

Japanese.—As a whole the Japanese varieties were better than the incurved, and the competition somewhat keener. In the class for forty-eight blooms, in not less than twenty-four varieties, some excellent exhibits were staged, the best being those of Charles E. Shea, Esq., The Elms, Foots Cray; most of the blooms put up by this exhibitor were of a high-class character, M. Vivand Morel, Gloriosum, Annie Clibran, Condor, Danaë, Stanstead White, W. W. Coles, and E. Molyneux, being particularly fine. Messrs. W. & G. Drover were awarded 2nd prize for a stand of large blooms,

which, however, presented rather a ragged appearance; in this collection some excellent examples of the new hairy pink *Chrysanthemum*, *Louisa Boehmer*, were conspicuous, while Mrs. C. W. Wheeler, *Avalanche*, *Madame Baco*, *Sunflower*, and *Carew Underwood*, are also deserving of notice. The 3rd prize went to Herbert Fowler, Esq., *Claremont*, Esher, for smaller but well-grown blooms; Mr. H. R. Brown, gr. to G. D. Barclay, Esq., *Roydon Lodge*, was awarded 4th; and Mr. C. Cox, gr. to J. Trotter, Esq., *Brickenden Grange*, Hertford, 5th. In the three last-named competitors' stands some well-developed blooms were noticeable.

Mr. J. Agate, Havant, staged the best twenty-four varieties, distinct, and among others deserving of mention in this stand were *Gloriosum*, W. H. Lincoln, *Sunflower*, *Madame Baco*, *Bauty of Castlewood*, and Mrs. W. Wheeler. The 2nd prize in this class went to Mr. H. R. Brown, gr. at *Roydon Lodge*, for a brightly-coloured collection, conspicuous amongst which were *Condor*, *Belle Paule*, Mr. Garnor, and *Val d'Andorre*. W. Herbert Fowler, Esq., was placed 3rd for a fresh lot of blooms, which included a well-grown example of *Louisa Boehmer*.

Mr. A. Ocock, gr. to Mrs. McIntosh, Havering

Kingston Lisle Park, Wantage, was awarded 3rd for a very poor arrangement.

Large Flowered Reflexed.—There were very few entries in this section, but some good flowers were staged by various growers. Mr. J. Myers gained 1st honours for the best twelve blooms. Dr. Sharpe, King of the *Crimsons*, Putney George, and *Cloth of Gold* being very good in this stand. The 2nd prize was awarded to Mr. G. Carpenter, gr. to Major Collis Browne, Broad Oak, Byfleet; and the 3rd to Mr. Matthew Russell, Heathfield.

Japanese reflexed.—For twelve blooms of not less than nine varieties, Mr. C. Long, gr. to E. P. Oakshott, Orchard Dene, Ealing, was placed 1st; and Mr. R. C. Notch, Broughton Road Nursery, Ipswich, followed a close 2nd. In the first-named competitor's stand *Sunflower*, *Belle Paule*, *Criterion*, and *Mdlle. La Croix* were very good; while *Amy Furze*, *Maiden's Blush*, and *Gloire de Rocher*, a seedling of *Val d'Andorre*, were conspicuous in Mr. Notch's collection.

Large-flowered Anemones.—Mr. W. Green, gr. to Miss Wyburn, Hadley Manor, Barnet, sent the best stand of twenty-four blooms; and Mr. A. Ivies was placed 2nd, for a meritorious collection; while Mr. Myers came in 3rd.

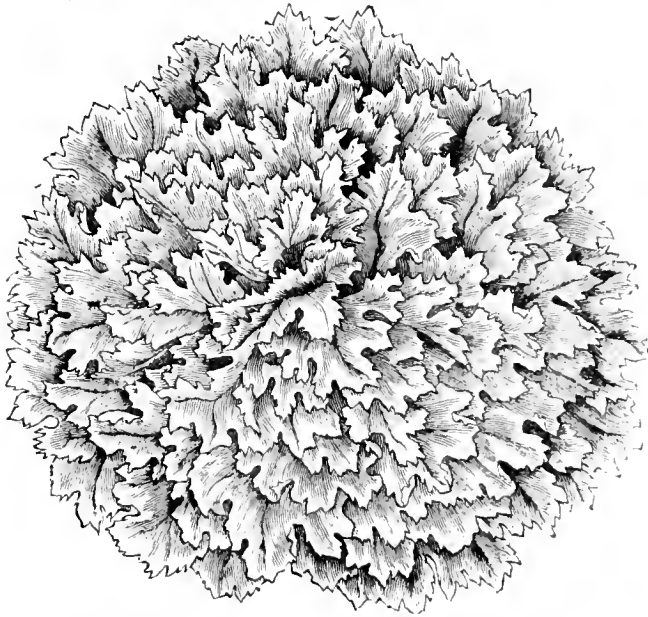


FIG. 82.—PETUNIA, DOUBLE-FRINGED BRILLIANT CARMINE-ROSE "SUNSET." (SEE P. 586.)

Park, Romford, gained 1st honours for the best twelve blooms, this being a very good stand. The flowers were fresh and well-grown, particularly Mrs. J. Wright, M. Vivian Morel, J. Delaux, and *Fair Maid of Guernsey*. A remarkably fine bloom of Mrs. A. Hardy was also conspicuous in this collection. The 2nd prize went to Mr. W. H. Divers, gr. to J. T. Hopwood, Esq., *Ketton Park*, Stamford, and the 3rd to Mr. J. Doughty, *Angle Park*.

The best six white blooms were shown by Jas. Shaw, gr. to Lord Clinton Hope, *Deepdene*, Dorking, who staged good examples of *Avalanche*; while the 2nd prize went to Mr. C. Cox, for large blooms of *Stanstead White*. Mr. J. Hughes, gr. to the Hon. H. T. Paravicini, *Heathfield*, Brackering, was awarded 3rd prize.

The leading prize for six blooms, any colour except white, went to Charles E. Shea, Esq., for fresh flowers of *Etoile de Lyon*; while Mr. J. Douglas was awarded 2nd for good examples of *Sunflower*, and Mr. J. Hughes 3rd, for a stand of the same variety.

There were but two entries in the class for twelve Japanese blooms, distinct, the flowers to be staged with moss, ferns, or small foliage plants. The 1st prize went to W. Howe, gr. to Henry Tate, Esq., *Park Hill*, *Streatham Common*, for a stand of fresh blooms, shown well above a groundwork of *Maiden-hair Fern*; while Mr. F. Sutton, gr. to J. Taylor,

Large Anemones.—In the class for twelve blooms, Japanese included, Mr. W. Green staged the best stand, which included fresh and well-grown examples of *Lady Marguerite*, Mrs. Judge Benedict, and *Madame R. Owen*; the next best lot came from Mr. Ives; and Mr. C. Notcutt had the 3rd prize.

Japanese Incurved.—Mr. R. Petfield sent the best stand of twelve blooms, among which *Boule d'Or*, Mrs. C. Wheeler, and *Madame Audiguer* were conspicuous; Charles E. Shea, Esq., gained the 2nd prize in this class; and to Herbert Fowler, Esq., 3rd, the blooms in each case being well-grown.

Anemone Pompons.—These were poorly represented, so far as entries were concerned, but some fair blooms were staged by Mr. J. Myers, to whom the 1st prize was awarded; Mr. E. J. Salter, gr. to T. B. Haywood, Esq., *Woodhall Lodge*, Reigate, gained the 2nd prize for twelve blooms; and the 3rd was awarded to Mr. W. B. Carpenter, *Gravesend*.

Pompons.—Neither were these so plentiful as might have been expected, although those staged were of good quality. For the best twelve blooms Mr. C. J. Salter gained 1st prize, the 2nd and 3rd being awarded Mr. G. Duncan, gr. to C. T. Lucas, Esq., *Warnham Court*, Horsham, and Mr. Matthew Russell, *Henfield*, respectively.

Amateurs' Metropolitan Classes.—Nine classes were provided for amateurs and single-handed gardeners, and among these some creditable stands were

noticeable. The best were staged by Mr. F. Laughey, *Wattford*; Henry Fincham, Esq., *Cranbrook*; Mr. J. Horril, *Havant*; Mr. J. Heath, gr. to M. Gurry, Esq., *Abington Place*, *Newmarket*; Mr. J. Little, gr., *The Gardens*, *Rylands*, *Romford*; Mr. W. Jones, gr. to W. Hooper, Esq., *Glenamont*, *Sutton*; and E. Mawley, Esq., *Rosebank*, *Berkhampstead*.

The Metropolitan classes were open to competitors residing within a radius of 3½ miles of *Shoreditch Church*, and considering the conditions under which they had been grown the blooms staged were very creditable. The best stands were shown by Mr. F. Bingham, *Stoke Newington*; Mr. W. Beech, gr. to L. Seligmann, Esq., *Hereford House*, *South Kensington*; Mr. W. Davey, gr. to C. C. Paine, Esq., *Cedar House*, *Stamford Hill*; and Mr. E. Easy, gr. to J. W. Jones, Esq., *Highbury New Park*.

GROUPS AND POT PLANTS.

As has been said, the groups of plants were better than those staged last year. The leading group of *Chrysanthemums*, any varieties, was exhibited by Messrs. Reid & Bornemann, *Sydenham*, to whom the 1st prize was awarded. The plants were well-grown, and the blooms, though not particularly large, were well finished. Mr. G. Stevens, *St. John's Nursery*, *Putney*, followed closely with a fine group, the 3rd prize going to Mr. N. Davis, *Camberwell*. Messrs. Reid & Bornemann also staged a capital group of Japanese varieties; and for a group of *Chrysanthemums* and foliage plants, Mr. E. Easy gained 1st honours for a light arrangement.

Trained plants were very good, the best four specimens coming from Mr. D. Donald, gr. to J. G. Barclay, *Leyton*. The same exhibitor was also 1st for six and four trained standard specimens respectively. Mr. J. Brooker, gr. to W. Reynolds, Esq., *The Grove*, *Highbury*, N., staged the best six large-flowered specimens. Other prize winners for trained plants were Mr. W. Davey, *Stamford Hill*; Mr. J. Weaton, *Claysham Park*; Mr. W. Robinson, and Mr. E. Easy.

SPECIAL PRIZES.

Special prizes were offered by Messrs. J. Laing & Sons, *Forest Hill*; Mr. R. Owen, *Maidenhead*; Messrs. H. Caonell & Sons, *Swanley*; Messrs. Pitcher & Manda, *Hextable*; Mrs. Myers, *Carnworth*; and Mr. H. J. Jones, *Lewisham*. In several of the classes thus provided, however, there was no competition. Messrs. W. & G. Droyer took the 1st honours for six blooms of *Louisa Boehmer*, as also did Mr. Charles Blicke, gr. to Martin R. Smith, Esq., *The Warren*, *Hayes Common*, *Beckenham*; Mr. G. Foster, gr. to W. Hammond Spencer, *Glendaragh*, *Teignmouth*; W. Herbert Fowler, Esq., and Mr. T. Aplin, gr. to W. Meath Baker, Esq., *Gloucester*. The *Gardeners' Magazine* Medals were won by Mr. H. Shoosmith and Mr. Ocock.

TABLE DECORATIONS AND BOUQUETS.

There were but few entries in this section, and in some cases the exhibits staged were not of a very high-class character, though those put up by Messrs. Perkins & Co., *Coventry*; Mr. E. Chadwick, gr. to E. N. Nelson, Esq., *Hanger Hill*, *Ealing*; and Mr. R. Potter, gr. to Sir M. W. Collet, Bart., *St. Clare*, *Hensing*, *Sevenoaks*, were really good. These exhibitors were awarded 1st prizes in various classes.

MISCELLANEOUS.

Mr. H. J. Jones, *Ryecroft Nursery*, *Lewisham*, staged a grand group of single *Chrysanthemums*, which attracted much attention. The plants were well-grown, and covered with bloom. From the same grower came an extensive collection of new varieties, comprising the principal continental and English-raised novelties, some of which appeared to be of real sterling value. Messrs. Pitcher & Manda also staged a number of *Chrysanthemum* blooms, as likewise did Mr. T. S. Ware, *Tottenham*; Messrs. Carter & Co., *High Holborn*; Mr. R. Owen, *Maidenhead*, and M. W. Wells, *Redhill*. Messrs. J. Laing & Sons sent a representative collection of fruit and *Chrysanthemums*; while from Messrs. Cannell & Sons came a showy group of cut flowers, comprising zonal *Pelargoniums*, *Louisa Boehmer Chrysanthemums*, &c. Mr. Whillans, gr. to the Duke of Marlborough, *Blenheim Palace*, staged a fine group of *Caruations*; and Messrs. Cobush & Sons, *Highbury*, foliage plants. Flower-pots and fancy vases were exhibited by Messrs. W. S. Iles & Co., *Camberwell Park*; greenhouses by Messrs. Haywood & Co., *Brockley*; and audries by Mr. J. George, *Putney*.

FRUIT AND VEGETABLES.

Fruit was sparingly shown, compared with other years, but that staged was well finished.

Mr. G. Goldsmith, gr. to Sir Ed. Loder, Bart., Leonards Lee, Horsham, had the best six dishes of dessert and culinary Apples; while the leading prize for Pears went to the same grower.

Mr. W. Harman, gr. to the Earl of Darnley, Wenhams Paddock, Lutterworth, was awarded 1st for White Grapes, this exhibit being some well-coloured Muscats.

The best black Grapes were staged by Mr. C. Giffen, gr. to Miss Christy, Coombe Bank, Kingston; and Mr. W. Wilson, The Elms, Roehampton. Mr. G. Duncan, Warnham Court; Mr. J. Bowry, Forest Hill; Mr. W. Howe, Streatham Common; F. Craven, Potter's Bar, F. Davis, Castle Bar, Ealing, also took prizes for Grapes. Messrs. Cheal & Sons, Crawley, sent a large collection of highly-coloured Apples.

Collections of vegetables for the special prizes offered by Messrs. Sutton & Sons, Reading, and Messrs. Webb & Sons, Stourbridge, were very good, the leading prizes being taken by Mr. R. Lye, Newbury, and Mr. A. Miller, Royal Ashton Park, Trowbridge. The Potatoes, too, staged in competition for the prizes given by Mr. C. Fidler, Reading, and Mr. Whitehead Cousins, Covent Garden, were of first-rate quality, particularly those shown by Mr. E. S. Wiles, Banbury; Mr. A. Miller, Mr. Peckover, Banbury; and Mr. H. Ridgewell, Cambridge.

CERTIFICATES.

A meeting of the Floral Committee took place in connection with the great show, and a very large number of flowers was staged, especially of the Japanese varieties; probably some 500 blooms of new varieties were submitted for Certificates. A First-class Certificate of Merit was awarded to Japanese Comte de Galbert, a grand new variety of great beauty of a pale blush colour, large and full. This came from M. Ernest Calvat, Grenoble, a French raiser, who has succeeded in obtaining some new varieties. Exposition de Grenoble, a very promising variety of a high colour, the Committee wished to see again. Other varieties were much damaged in the course of the journey.

Messrs. James Carter & Co., Holborn, W.C., sent a number of seedlings. First-class Certificates of Merit were awarded to Lord Brooke, a very fine golden-orange incurved Japanese; Holborn Rose was much admired, but it was thought not to be sufficiently distinct.

Messrs. Pitcher & Manda, Hextable, Kent, received a First-class Certificate for Japanese Miss Libby Allen. A large yellow incurved Japanese of excellent character, and a yellow form of Louis Boehmer, the Committee wished to see again. A First-class Certificate was also awarded to large Anemone Delaware, a fine variety, the guard petals white, with yellow centre. A large batch of new varieties came from Mr. R. Owen, Maidenhead, who received a First-class Certificate of Merit for Excelsior, a large bright crise Japanese with a silvery reverse; Japanese Mrs. G. C. Schwabe, delicate rose, shaded with salmon, and tipped with gold, very distinct; and Mrs. Robinson King, a golden incurved of good colour, and fine petal and build. Mr. T. W. Flight, a Japanese, the committee wished to see again.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, sent some seedlings. Among them was Amos Perry, an incurved Japanese in the way of Thunberg, but paler (Commended). A First-class Certificate was awarded to Japanese Florence Davis, a very fine and distinct pure white variety, raised by Mr. Norman Davis, of Camberwell, and shown in admirable character. Mr. Mursell, Streatham, received a First-class Certificate of Merit for Kate Mursell, a pure white sport from Lady Trevor Lawrence; and for Coronet, a large and very fine deep orange-yellow incurved Japanese, of great beauty.

A large batch of new varieties came from Mr. H. J. Jones, of Lewisham, of a very promising character, which the committee wished to see again in better condition; Miss Libbie Allen was also in Mr. Jones' collection. From Mr. Milford, Worcester Park, came Ada Kaye, a sport from Glück, Anemone-flowered, which the Committee wished to see in better condition. Some very fine blooms of Louis Boehmer came from Mr. H. Loader, and were awarded a First-class Certificate; and a batch of plants of the same variety, in pots, of fine quality.

First-class Certificates of Merit were awarded to Mr. James Lye, Clyffe Hall, Market Lavington, for two seedling Potatoes of high character, and a round variety, a refined Schoolmaster named Advance, and kidney Renown of the Lapstone type, but tinted with

red at the broad end. Also to Mr. A. J. Harwood, Colchester, for Colchester Black Bullace, shown in large clusters of fine ripe fruit. Apple Graham's Jubilee was shown by Mr. H. Pocock, and highly commended.

ROYAL HORTICULTURAL.

TUESDAY, Nov. 10.—The usual fortnightly meeting was thinly attended, owing to the attractions of the Chrysanthemums at the Aquarium. Those, however, who visited the Drill Hall, found a good group of Chrysanthemums, from Mr. Wythes, showing what can be done in so smoky a locality as Syon. The collection from Kew was chiefly remarkable for the very great beauty of some of the single forms, which put to shame some of their more-flaunting companions. There was an interesting collection of Orchids, including the inevitable *Labiata autumnalis* and other exhibits specially noticed elsewhere. A flower of the *Stapelia gigantea* figured at p. 728, Dec. 22, 1888, attracted—as well it might—great attention. Mr. Lynch showed from the Cambridge Botanic Garden a spray of the elegant Creeper, *Porana paniculata*, *Aristolochia grandiflora*; and Mr. Wythes showed *Bignonia venusta*. The Fellows greatly appreciate Mr. Lynch's exhibits on these occasions. Would that the managers of other Botanic Gardens would follow the lead of Kew, and send up to these meetings any interesting species they may have. They form so delightful a change from the interminable series of Chrysanthemums, *Gladiosi*, *Narcissi*, or what not. Mr. Ingram's lecture on "Soils" was read by the Secretary, and consisted, in the main, of an enumeration of the principal kinds of soil found in this country, of the rocks whence they have been produced, and of the causes—water, frost, air, ice, &c.—which have been instrumental in their production.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. B. Wynne, H. Herbst, H. Cannell, W. B. H. Poe, H. H. Dombain, C. E. Pearson, W. Watson, C. Jeffries, T. Baines, C. T. Drury, G. Paul, and J. Fraser.

Some few competitive exhibits of Chrysanthemums appeared in response to the invitation of the Society, and had it not been for these the Hall would have worn a very bare appearance. Six bush plants disbudded, and six not disbudded were desired, and Mr. E. Vince, gr. at Highgate Cemetery, was 1st in the former competition, with excellent plants, $3\frac{1}{2}$ feet high and 3 feet in breadth, with very good flowers, fairly abundant; the best were, Avalanche, Madame Rendatler, M. Berard, Madame Lacroix, and Peter the Great. The plants had the rather rare furnishing of foliage to the base of the stems, and were probably two years old. Mr. J. Weston, gr. to D. Martineau, Esq., Clapham Park, was 2nd, Madame Sévin and Avalanche were his best.

In the unthinned class, Mr. Vince was 1st, with the varieties Mons. Lacroix, W. Holmes, Phœbus, Lady Selborne, Source d'Or, bearing numerous flowers—of course, of a much smaller size than those in the other class, but very decorative objects withal. 2nd in this class was Mr. J. Weston, but his plants were immoderately tall and bare of leaves, although in some instances there was plenty of bloom. Mr. Pince showed six Pompons, nice plants full of flowers, Cendrillon and Sœur Mélanie being the best.

In non-competitive groups, we observed one of Chrysanthemums from the Royal Gardens, Kew, some of which were single-flowered, namely, Mary Anderson, Gus Harris, and Miss Rose, all profusely bloomed and showy. Others consisted of Japanese varieties grown without flower disbudding.

Mr. G. Wythes, gr. at Sion House, Brentford, showed tallish well bloomed plants, of some very fine varieties of Japanese and incurves, many of the individual flowers being of exhibition proportions and quality. The plants generally carried from two to four flowers each, that were wonderfully fresh looking for this, around town, rather forward season.

Messrs. J. Carter & Co., 237-238, High Holborn, exhibited Chrysanthemums, Holborn Rose, a large flat petalled mauve-coloured Japanese, Holborn Dragon, an imported Japanese, incurved florets, white with a tinge of pink on the reverse side; Miss Bella Weston, an English seedling incurved, the flowers shown being in some cases from crown, and in others from terminal buds.

Messrs. Cannell & Sons, Swanley, had a large stand filled with blooms of the hairy variety Louis Boehmer. It is a roughish flower, of a dull lilac

colour, with too much green eye noticeable, although that is not always present, as we remarked later in some stands in the National Chrysanthemum Society's show. A Japanese, Colonel B. Smith, of the favourite orange colour, with involved and incurved florets, came also from Swauley; it is a good thing.

Mr. J. Weston showed Pompon Ethel Weston, a pale pink flower with a yellowish centre, a sport from Rosenante. An incurved flower, Mrs. Rowlands, came from Mr. Rowlands, gr., Bardney Manor, Lincoln; and a white Japanese variety, Florence Davis, was shown by Messrs. J. Veitch & Sons, Chelsea. It has confused narrow flat florets, which have a green tinge about the centre of the bloom.

Besides the *Porana*, *Aristolochia*, and *Bignonia* mentioned previously, another very handsome flower, *Gerbera Jamesoni* was sent by Mr. Lynch, of the Cambridge Botanic Garden. It had been gathered from the foot of a south wall which is overhung with glass; there were also from this garden some flowers of the botanically-curious *Narcissus viridiflorus*, a native of Spain and N. Africa. Mr. C. Wood, gr. to Lord Hylton, Merstham, showed *Stapelia gigantea*, figured in these pages in 1887, a rare and interesting subject, with a purple flower, and large fleshy calyx, 10 inches in diameter, of great substance, and banded closely with fine crimson lines. Messrs. Peter Barr & Sons, Covent Garden, showed *Aster grandiflorus*, a bright-coloured, purplish-flowered species, the blooms measuring 2 inches in diameter. A cluster of the rich orange-coloured *Bignonia venusta* came from Mr. G. Wythes. It is remarkable that the plant from which the blooms were cut is sixty years old. Some of their beautiful crosses and hybrids of *Javan Rhododendrons*, came from the nurseries of Messrs. J. Veitch & Sons, and amongst them a novelty in the shape of a semi-double flower, of a pleasing salmon tint, and at present it is without a distinctive name. A Croton named Mrs. Usher with bold yellow markings, chiefly in the middle and lower half of the erect leaves, which are 7 inches long by $1\frac{1}{2}$ broad, came from the raiser, Mr. J. Smith, gr. to R. E. Warburton, Esq., Arley Hall, Cheshire. A distinct showy variety, and a good candle-light colour.

Fruit Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. John Lee, R. Hogg, R. D. Blackmore, G. Eynyard, G. W. Cummins, P. Willard, C. Ross, W. Warren, T. J. Saltmarsh, G. Chiffa, G. Wythes, J. Hudson, G. Reynolds, F. Q. Lane, H. Balderson, G. Norman, J. Smith, Harrison Weir, W. Bates.

A large assortment of Carrots came up from the society's garden at Chiswick, which had been arranged into eight sections, a convenient division for those little acquainted with the diversity of form in this root.

Group 1 contained the knobby forcing varieties, of which Parisian Red and the Forcing Horn are types; 2 is a slightly larger section, of which Carter's Improved Horn is typical; 3, are the roots of the cylindrical, Carentan type; 4, are thicker than the former, but not much, if any, longer, Gueraude and Chantenary Carrots are types of this; section 5 consists of roots longer than those in section 4, but less in diameter, like Carter's Scarlet Intermediate; 6 are mostly Carrots of about the same length as the preceding, but thick, like the English Horn; 7 is a longer form of Horn, with the St. Valery as the type; and 8 includes our Long Surrey, Altricham, &c.

An excellent lot of Pears (thirty-one dishes and varieties) came also from Chiswick, and included many not yet common in gardens, namely Onondago Bouvier Bourgeois, Oken d'Hiver, Helotto Dundas, a bright-looking fruit; Charlotte de Bromes, a fine-flavoured fruit; Louis Gregoire and Comte de Paris. The best flavoured Pear was White Doyenné, and the next, perhaps, Marie Louise.

Many seedling Apples were sent by various growers, but none met with approbation from the judges, except Messrs. Saltmarsh & Sons' Chelmsford Wonder, a large yellow-skinned fruit, and Colonel Eyres' Atalanta, a seedling raised by Mr. Ross, received an Award of Merit. It is a cooker.

Mr. Myles, gr. to Lady Hutt, Appley Towers, Isle of Wight, showed the black Grape, Appley Towers, a seedling raised at that place, and not seen now for the first time. It resembles somewhat Black Alicante, and is a lightly shouldered good-looking bunch. How large it may be grown we do not know. He showed a white delicate-looking Grape, said to have been raised from Gros Colmar and Black Alicante.

A few dishes of fruit came from Messrs. W. Paul & Son, Waltham Cross.

Some Leeks blanched to a great length of stem, and some very fine stout curled Parsley, and Marigolds, came from Messrs. Dobbie & Co., Rothesay, N.B.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. H. M. Pollett, Hugh Low, E. Hill, F. Sander, H. Ballantine, H. Williams, J. O'Brien, M. T. Masters, T. B. Haywood, and A. H. Smee.

Messrs. J. Veitch & Sons, Chelsea, exhibited another handsome hybrid Orchid, raised at their establishment by Mr. Seden, *Phaius maculato-grandifolius* × (*maculatus* ♂, *grandifolius* ♀); the plant had the general habit of *P. grandifolius*, but the leaves were rather thinner than those of that species, and exhibited a few yellowish spots, as in the male parent. The spike was nearly 3 feet in height, and bore flowers as large as those of *P. grandifolius*, the sepals and petals yellow, with a slight coppery tinge; the lip yellow at the base, the in-folded front lobe being chestnut-red, and lines of the same colour extending to the base of the lip. A very handsome species of a colour much needed. Messrs. Veitch also exhibited a flower of *Cypripedium Niobe superbum* × (*Spicerianum* ♀ × *Fairrianum* ♂), a still more beautiful form of the variety previously certificated, the rich purple and white of the dorsal sepal being very showy. Baron Schroder, The Dell, Egham (gr., Mr. H. Ballantine), exhibited the beautiful *Cypripedium insigne Sanderæ*, an unique form in which the flowers are of a clear shining yellow, except the upper part of the dorsal sepal, which is white. The flower is unspotted, and not marked in any way, and is a very charming novelty.

Messrs. F. Sander & Co., St. Albans, sent a handsome new species of *Dendrobium*, named *Leeanum*, which appeared as a single specimen it is feared among their importation of *D. Phalenopsis Schroderianum*. The plant had tall slightly compressed pseudobulbs, like those of *D. taurinum*, and stout ascending spikes of flowers larger than those of *D. superbiens*; the sepals white, with a rosy purple mottling on the outer halves, the petals rich rosy-crimson, and the front lobe of the lip, which has several distinct wavy ridges down the centre, was of the same colour, the base of the lip greenish—a very fine and distinct species.

Mr. Sander also sent the new *Cypripedium Malyanum* × *Spicerianum* ♀ × *Crossianum* ♂, a singular variety, with some resemblance to *C. Leeanum*, but without the purple spotting.

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., staged a very cheerful-looking group of Orchids, to which a Silver Banksian Medal was awarded. Among the fine *Cypripediums* were *C. Morganæ* ×, *C. euryandrum* ×, *C. Arthurianum* ×, with five flowers; *C. Adonis* × (*Spicerianum* × *Harrisonianum*); and several forms of *Cypripedium insigne*, of which some good plants of *C. i. punctatum violaceum*, one with four and one with six flowers, were the best and showiest. Messrs. Williams also had plants in flower of *Odontoglossum grande*, exceptionally good varieties; *Lycaste Skinneri*, with five flowers; *Oncidium varicosum*, *O. tigrinum*, *O. Kramerii*, good plants of *Dendrobium formosum giganteum*, &c.

The Right Hon. Lord Rothschild, Tring Park (gr., Mr. E. Hill), exhibited a life-size photograph of a noble specimen of a fine variety of *Vanda cerulea*, with seventeen spikes, and over 200 flowers, which recently flowered at Tring Park. A special vote of thanks was accorded.

M. S. Cooke, Esq. (gr., Mr. D. Cullimore), Kingston Hill, sent a supposed hybrid *Odontoglossum*, of handsome form, the flowers about 2 inches across; the sepals and petals of a bright yellow colour, spotted with reddish brown; the lip white, with a few purple spots. (Award of Merit, subject to its being named or verified.) Messrs. Paul & Son, Cheshunt, exhibited an interesting series of nine varieties of *Cypripedium insigne*, among which *C. i. Chantinii*, *C. i. Mooreanum*, and *C. i. albo-marginatum* were the more distinct ones.

H. M. Pollett, Esq., Fernside, Bickley, Kent (gr., Mr. T. Paterson), staged a plant, and cut flowers of three varieties, of the old autumn-flowering *Cattleya labiata*.

List of Awards.
ORCHID COMMITTEE.

First-class Certificate.

- To Messrs. Veitch & Sons, for *Phaius maculatus grandifolius*.
- To Messrs. F. Sander & Co., for *Dendrobium Leeanum*.
- To Baron Schroder, for *Cypripedium insigne Sanderæ*.

Award of Merit.

To Malcolm S. Cooke, for *Odontoglossum hybrid*, to be named.

Silver Banksian Medal.

To Messrs. B. S. Williams & Son, for Group of Orchids.

FLORAL COMMITTEE.

First-class Certificate.

- To Mr. R. J. Lynch, for *Gerbera Jamesoni*.
- To Mr. C. Wood, for *Stapelia gigantea*.
- To Messrs. B. S. Williams & Son, for *Rhopaloblabe hexandra*.

Award of Merit.

- To Messrs. Barr & Son, for *Aster grandiflorus*.
- To Messrs. H. Cannell & Sons, for *Chrysanthemum Colonel W. B. Smith*.
- To Messrs. J. Carter & Co., for *Chrysanthemums Holborn Rose and Miss Belt Wilson*.

MEDALS.

Silver Banksian.

To Mr. G. Wythes, for group of *Chrysanthemums*.

Bronze Banksian.

To Messrs. H. Cannell & Sons, for *Chrysanthemums* (cut blooms).

FRUIT AND VEGETABLE COMMITTEE.

Bronze Medal.

To Messrs. Dobbie & Co., Rothesay, N.B., for collection of Vegetables.

First-class Certificate.

To Messrs. Saltmarsh & Sons, Chelmsford, for Apples, Chelmsford Wonder.

Award of Merit.

To Mr. C. Ross, for seedling Apple, Atlanta.

Cultural Commendation.

- To Lady Hutt, Appley Towers, Kyle (gr., Mr. T. Myles), for Grape, Appley Towers.
- To Mr. Barron, Royal Horticultural Society's gardener, Chiswick, for collection of Carrots.

IPSWICH AND EAST OF ENGLAND HORTICULTURAL.

TUESDAY, November 3.—The exhibition of the Ipswich and East of England Horticultural Society has by this time assumed the definite character of a grand festival of flowers and music. There was on this occasion not only a larger and more lovely display of blossom and foliage than has perhaps ever been seen before, but the arrangement was better and more artistic, and the incidental decorations of the room were a very pretty variation upon the style hitherto adopted. The coveted Silver Medal of the National Chrysanthemum Society, for the best single bloom in any amateur's collection, was won by Mr. M. Gurry, of Abington Place, Newmarket, with a very fine white flower of *Queen of England*, which he showed among the six incurved specimens which took 1st prize. Mr. R. B. Cabbell, of Cromer, took the handsome cup offered by Mr. Wm. Colchester, of Ipswich, for the best Japanese blooms grown or fed with pure Ichthemic guano. The whole twenty-four were of enormous size, some rather coarse; but specimens of *Molyneux*, *Val d'Andorre*, and *Oondor* were worthy of high praise. With all respect to the exhibitors of cut blossoms, however, more credit is undeniably due to those who can produce a good group of plants, and in this competition the first place is well earned by the Rev. H. A. Berners, of Harkstead Rectory. Mr. R. M. Miller took the 2nd prize, with a very nice and attractive lot. For collections not exceeding 40 square feet, Mr. E. R. Turner deservedly took the 1st prize, with a very nice collection, among them being a fine specimen of *Stanstead White*. Mr. J. D. Cobbold was 2nd.

The trained and single specimen *Chrysanthemums* were poor indeed, in comparison with the rest of the show.

Groups.—There were five groups of plants arranged for effect, which formed an attractive feature of the exhibition. Major Howey, of the Grange, Woodbridge, took 1st prize with a number of good specimens, which were very lightly and artistically put together. The 2nd prize went to Mr. W. Beer for a bright, varied, and useful lot of furnishing stuff. The *Primulas*, which were not remarkable, helped to adorn the fruit room; there were good plants for table decoration in between the cut *Chrysanthemums*, and Mr. George Gilbert, of the Floral Nurseries, Ipswich, took the 1st prize for specimen foliage plants, with a grand *Paeonium tenax*.

Cut Blooms.—The cut *Chrysanthemums* occupied most classes, and comprised many blooms of great size and beauty of form. The *Duchess of Montrose* headed the list with the best incurves. Against strong competition, Mrs. Lowe, of Gosfield Hall, Halstead, Mr. R. Burrell, of Westley Hall, Bury St. Edmund's, and Mr. R. C. Notcutt, of the Broughton Road Nursery, Ipswich, succeeded in taking minor awards. The Rev. H. A. Berners came in 2nd with a good collection of 24 Japanese and incurved.

Fruit.—The display of fruit was very good, especially in Grapes, Apples, and Pears. Lord Rendlesham showed the best collection, and had splendid Grapes (black Alicante) and Doyenné du Comice Pears. C. H. Berners, Esq., Woolverstone Park, gr. Mr. Sheppard, came 2nd, and the Hon. W. Lowther, 3rd. Mr. H. Berners and the Rev. H. A. Berners were respectively 1st and 2nd for white Grapes.

Messrs. Daniel Brothers, the Nurseries, Norwich, showed largely Potato and Apples, and Mr. F. Cresswell, gr. at Stoke Park, showed well in this section.

PORTSMOUTH CHRYSANTHEMUM SHOW.

NOVEMBER, 4, 5, 6.—Another very successful exhibition has to be chronicled by the Chrysanthemum Society of Portsmouth and neighbourhood as having been held in the Drill Hall in Alfred Road, on the dates above given. This building affords ample space for exhibits and the public alike; and in few towns is there such an interest in flowers generally and especially in *Chrysanthemums* by all classes as here. The managers of the society find in the cheap price charged for admission a most satisfactory addition to its funds; and to such an extent do they carry this idea, that one penny only is charged for admission during the last three hours the exhibition remains open, and as large a sum as twenty-five pounds has been taken at the doors in pennies.

Cut Blooms.—These form the strongest characteristic of the show, no fewer than 2,600 being staged, and the competition in the leading classes as a consequence was very marked. The principal class was one for forty-eight, half incurved and half Japanese varieties, and in not less than eighteen varieties. The 1st prize in this class was a piece of plate value £25, to which £8 in money was added, the conditions being that it should be won twice consecutively or three times in all. Messrs. W. and G. Drover, nurserymen, Fareham, were the most successful exhibitors in 1890, and repeating their success this year, they secured the award, which is now theirs solely. This stand was doubtless the best—as a whole—that we so far have seen this season. The incurved were large, fresh, and well finished, and included *Golden Queen of England*, the premier incurved in the show. The Japanese were large and very fresh, and consisted of some novelties in part. Mr. A. Payne, gr. to Mrs. E. Smith, The Oaks, Emsworth, was winner of the 2nd place, and his Japanese were very good. For twenty-four distinct varieties, twelve to be Japanese and twelve incurved, several valuable prizes were offered, with the result that a good display in this class resulted. With very fine incurved and fairly good Japanese, Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, was 1st, and Mr. Payne 2nd.

Twelve incurved blooms in as many varieties: 1st, Mr. Penford, gr. to Sir F. FitzWygram, Bart., M.P., Leigh Park, Havant, with blooms of medium size; Mr. C. Steptoe, gr. to W. A. Gale, Esq., Horndean, was 2nd.

Reflexed flowers made a good display, and Mr. Penford had here the best twelve in eight varieties, each flower being excellent; Mr. Russell, gr. to Dr. C. F. Lewis, Henfield, Sussex, was 2nd. Separate classes were provided for large *Anemone* and for Japanese-*Anemone* blooms, which also produced good competition, and made a display of much interest: Mr. Penford was again 1st in each class; with Mr. Steptoe 2nd in the former, and Mr. Adams, gr. to T. S. Edgecombe, Esq., Hinton House, Southsea, 2nd in the latter.

Pompon varieties, always pretty, were also numerously shown. Mr. Russell had the best, a choice selection; and Mr. Agate, Havant, 2nd. Fimbriated varieties were shown in triplets, Mr. Laphorne, gr. to Mr. Hawkins, Gosport, taking 1st place for twelve bunches. Five competed with stands of single flowered varieties in twelve triplets set up with their own foliage, and Mr. Agate was 1st with the best varieties. Mr. Edwards, Witley Heights, Surrey, was 1st for six Japanese of one variety, and Mr. Molyneux was 1st in the any variety class with large and solid *Empress of India*, winning easily.

A Silver Cup was offered by Mr. W. Colchester for six incurved and six Japanese, grown with their special Ichthemic manure, Mr. Molyneux also won. The premier Japanese variety was a bloom *Stanstead White*, found in a stand set up by Mr. Penford.

Plants.—The 1st prize, a good one, for eight trained specimens, was easily won by Mr. Penford,

with healthy plants of 3 feet in diameter, currying good foliage and numerous flowers; Mr. G. Lambert, Gordon Terrace, Whyke Lane, Chichester, being 2nd. Mr. Penford was also 1st for one, a freely-flowered Elsie.

A novel yet good class was that for twelve distinct varieties in pots not exceeding 9 inches, inside measurement, and each to carry from six to twelve blooms. In this class, Mr. Barridge won 1st honours, with plants 2 to 4 feet high.

Groups of Chrysanthemums were few, and not very brilliant, and the plants mostly too tall.

Fruit.—A variety of fruits in season made good display. Mr. T. Hall (gr. to S. Montague, Esq.), Mr. N. Molyneux, Mr. J. Chalk (gr. to G. Road, Esq.), Messrs. Bunyard & Co., Mr. J. Watkins, Hereford, Mr. Mariner, (gr. to Lieutenant-Colonel Thistlethwayte, Drayton, Cosham), were the chief exhibitors.

DALSTON AMATEUR CHRYSANTHEMUM.

WEDNESDAY, November 4.—It is well-known in the horticultural world, that amateurs who apply themselves closely and earnestly to any branch of gardening, often excel in the production of plants, flowers, fruits, and vegetables requiring the utmost skill and attention; indeed it is not an uncommon occurrence in open competition for amateurs to defeat experienced gardeners. This results chiefly from the fact that devoting time and attention solely to one class of production gives the best chance of success in cultivation, and this is abundantly proved in the system adopted by market growers at the present time, namely, confining themselves to, and making a reputation for, a few plants, fruits, &c. which become specialties. In floriculture amateurs have done wonderful service, and amongst the Chrysanthemums especially, they have taken a prominent place in the ranks of successful exhibitors. Even in the least favourable districts, closely-pent populous localities of the metropolis and provincial towns, they have overcome innumerable difficulties, and presented the "Queen of Autumn" flowers in a condition highly creditable to themselves, eminently satisfactory to visitors, and offering every inducement to others to enter the ranks of those who engage in such a delightful, healthful, and admirable recreation.

Knowing what has been and can be accomplished in this way, a most agreeable surprise was still afforded by the fourth annual exhibition of the Dalston and De Beauvoir Town Amateur Chrysanthemum Society, which was opened by Lady Hunter at the Albion Hall on Wednesday, November 4. The hall is of moderate size, and its resources were taxed to the utmost to find space for the overflowing exhibits, contributed in competition and otherwise. Around the sides of the hall were groups of Chrysanthemums bearing abundance of brilliant flowers, while the centre tables were devoted to the cut blooms which were of satisfactory quality throughout, and in several classes would have taken a good place in much more extensive shows. There was a freshness and diversity which imparted a most pleasing character to the show, and it is almost needless to say that the committee had arranged the exhibits to the best advantage.

Glancing hurriedly at the winning contributions, we found that in the "Holmes Class" for thirty-six plants, Messrs. Rolt, Reid and Powell were the most successful, in the order named, the first also taking, in addition to the Silver-gilt Medal, a special prize of a Portable Greenhouse, presented to the society by "A Friend of Horticulture." The other two prizes were Silver and Bronze Medals respectively, and the plants in each case were well-grown healthy specimens. With twenty-four plants, Messrs. W. H. Miles, H. R. Pearce, and J. Mann, were the prize winners, the best twelve plants coming from Messrs. Prentiss, G. C. Young, and F. Pearce, and the best trained specimens from Messrs. Rolt and Reid.

The cut blooms were most praiseworthy, the Japanese bright and substantial, the incurved neat and refined. Mr. W. H. Miles had the best twenty-four blooms, twelve Japanese, and twelve incurved, thus winning the Silver Gilt Medal, and Mr. Toope's excellent heating apparatus presented as an additional prize. Mr. G. P. Rolt followed closely in this class, and was 1st with twelve Japanese and twelve Pompons, the latter wonderfully good.

Mr. Miles also had the best twelve, six incurved blooms and six Japanese. In the open classes, Messrs. Winter, Kendall, and Nye were the winners for twelve blooms.

Amongst the non-competing exhibits, Messrs. J. Laing & Sons, Forest Hill, had a valuable collection of foliage plants and Heaths. Mr. H. J. Jones, of Lewisham, sent thirty-six handsome cut blooms, and Mr. C. Gibson, Morden Park Gardens, a well known exhibitor at the leading shows, had twenty-four fine cut blooms, all which added materially to the interest and beauty of the exhibition.

Altogether the Society had good reason to be satisfied with the result of their endeavours, and it is evidently performing valuable service in the district. The committee with their chairman, Mr. Hill, and secretary, Mr. Butler, deserve especial congratulation upon the work performed, which should give ample encouragement to proceed on the same lines.

PUTNEY, WANDSWORTH, AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 5, 6.—The committee of this suburban society made a bold departure this year by carrying its annual show right into the heart of smoky Wandsworth, holding it in the spacious Town Hall, where there was elbow-room. We hope the greater attendance amply justified the change. A few remarkably fine groups of Chrysanthemums were staged, the leading one set up by Mr. Springthorpe, gr. to R. W. Alexander, Esq., Rye-hampton, being pronounced by the judges one of the best and most effective they had yet seen—very high praise for Wandsworth that. Mr. Dark, gr. to J. Hooker, Esq., Putney, whose group came 2nd, had perhaps the best quality in his blooms, but his grouping was ineffective.

Trained plants were plentiful—some excellent. Mr. Bentley, gr. to W. J. Bosworth, Esq., Rye-hampton, had the best four incurved varieties, and Mr. Springthorpe the two best Japanese, in fine plants of Mdle. Lacroix and Madame de Sévigné.

Pompons were plentiful, the best perhaps being the standards Black Douglas, Golden Madame Marthe, and a white variety, which were specially good.

Ferns in fours were exceedingly good. The best lot came from Mr. E. Moe, gr. to F. T. Delcoyne, Esq., Clapham Common, these comprising very fine specimens of *Adiantum concinnum latum*, *A. Farleyense*, *A. trapeziforme*, and *Nephrolepis rutescens tripinnatifida*. Other lots included very fine *Davallia Mooreana*, *Gymnogramma chrysophylla*, *Asplenium bulbiferum*, and *Microlepia hirta cristata*.

The prettiest miscellaneous group of plants came from Mr. Portbury, gr. to W. N. Troy, Esq., Putney Heath; *Bouvardias*, *Cyclamens*, and *Cypripediums*, formed the chief floral feature.

Mr. Methuen, gr. to W. Heiller, Esq., Wimbledon Park, had the best four stove and greenhouse plants in Crotons and Palms. Quantities of scarlet pink, and other coloured zonal Pelargoniums; Chinese Primulas, Capsicums, &c., lent welcome colour to the show. The best of these latter were the erect short red, the yellow drooping Prince of Wales, and the long red Currant or Grape varieties. All blooms of Chrysanthemums were fairly good, but behind the shows of some previous years. The best twenty-four Japanese were shown by Mr. Knowles, gr. to Mrs. Egerton, Rye-hampton, who seemed to be equally invincible in other classes, as he was also 1st for twelve Japanese, and for twenty-four and twelve incurved. From his stands were selected the premier Japanese bloom, a rather loose Stanstead White, and the incurved John Doughty, a capital flower; Jeanne d'Arc, Alfred Salter, and Refulgence were also capital blooms.

Fruit.—Apples and Pears were remarkably good, indeed, finer in their respective classes of kitchen and dessert Apples could hardly have been found. These were all the produce of small private gardens, and exhibited a wonderful advance on what used to be seen on the show tables. Atristron, Lord Derby, Warner's King, Blenheim Pippin, Gloria Mundi, Mère de Méoage, New Hawthornden, and Wellington, were fine; as also were Cox's Orange, King, and Ribston Pippins, of dessert varieties.

Pears, too, were good; Marie Louise, Beurré Diel, Beurré Hardy, Pitmaston Duchesse, &c., being excellent. The residents of Wandsworth who see only such fruit as the shops display, must indeed have marvelled when they gazed upon the fine samples placed before them on this occasion.

CRYSTAL PALACE.

NOVEMBER 6, 7.—Some very fine groups of Chrysanthemums and grandly-developed blooms were the leading features of this exhibition. As is usual the

groups were at the sides of the nave, the flowers arranged on tables in the centre, and the plants following on at the eastern end.

Cut Blooms.—There were seven collections of forty-eight varieties, and Messrs. W. & G. Drower, nurserymen, Fareham, received the 1st prize, their twenty-four incurved, and same number of Japanese being very fine. Among the newer flowers of the former were Mrs. S. Coleman, J. Doughty, Violet Tomlin, Miss M. Haggas, the Queen, Princess, and Empress types being very good.

Among the Japanese were grand blooms of W. H. Lincoln, Stanstead White, Mrs. Falconer Jameson, Mrs. C. Wheeler, a grand variety of the character of Edwin Molyneux, but more refined; Etoule de Lyon and Sundower were finely coloured. 2nd, J. W. H. Shoemith, gr. to M. Hodgson, Esq., Shirley, Croydon, came in a good 2nd.

There were five collections of eighteen incurved, and Mr. Whittle, gr. to C. H. Goschen, Esq., Bal-lards, Addington, was placed 1st, having in fine character Violet Tomlin, John Lambert, Jeanne d'Arc, and other leading varieties admirably finished; Mr. Cox, gr. to J. Trotter, Esq., Brickendon, Hertford, was 2nd, with a capital lot of flowers. Also out of eight competitors, the 1st prize for twelve incurved was taken by Mr. J. Hughes, gr. to H. F. Paravicini, Esq., Bracknell, Berks, who had, in the best form, Alfred Salter, John Salter, Queen of England, Lord Alcester, Violet Tomlin, and John Doughty; 2nd, Mr. A. Felgate, Buckhill, Walton-on-Thames, whose stand was only just inferior to the 1st.

The class for six incurved, one variety, was very interesting; and Mr. A. Turner, gr. to F. Murray, Esq., Woodcote Hall, Epsom, was placed 1st, with superbly-finished blooms of Princess of Wales; and Mr. A. Felgate 2nd, with Queen of England—ten exhibitors competing.

Japanese blooms were superb; not only were they large in size, but superbly coloured for such a season. The best eighteen came from C. E. Shea, Esq., Fooks Cray, Kent, who had, in admirable form, the new Vivand Morel, Mrs. Falconer Jameson, Boule d'Or, Coronet (a very fine deep yellow incurved flower), a superior Taunberg, W. W. Coles, W. H. Lincoln, &c.; 2nd, Mr. Glen, The Gardens, Worth Park, Crawley, his Stanstead White being very fine and Triomphe de Lyon superbly coloured.

There were nine collections of twelve varieties, and Mr. James Douglas, gr. to Mrs. Whitbourn, Great Gearys, Hord, was 1st, with a finished lot of blooms, such as Etoule de Lyon, Boule d'Or, Avalanche, Mons. Berard, Sunflower, Puritan, Stanstead White, &c.

There were thirteen stands of six blooms of one variety, and Mr. C. Cox was 1st, with splendidly-finished Avalanche; and Mr. Glen was 2nd, with the same. This variety took the 1st prize, thus vindicating its claim to be regarded as the most symmetrical and beautiful flower grown. Next season Vivand Morel may possibly dispute its primiership.

Reflexed and Japanese reflexed were somewhat sparingly represented. The best stand of twelve blooms came from Mr. Felgate, who had the usual varieties in good form; the reflexed flowers were very attractive, and it seems a pity they are not shown in greater numbers.

Anemone-flowered were in good character, and the best eighteen (Japanese varieties being admissible) came from Mr. W. Green, gr. to Miss Wyburn, Hadley, Barnet, and their singular character appeared to attract a good deal of attention; Jean Marty, Mrs. Judge, Benedict, Gladys Spaulding, Nouvelle Alveole, L. Denil, Lady Margaret, Glück, and Acquisition are among the best.

Pompon varieties were sparingly represented, and, owing to being much dislodged, the flowers were generally large; and to many, out of character. But the pretty Pompon Anemones are delightful, and one wonders they are not more grown. Mr. C. J. Salter was 1st, with twelve bunches of three blooms, the following being specially attractive, Aglaia, Perle, Madame Montels, Caliope, Briolus Antonius, and Sadawa.

Groups were a remarkable feature. The best fitting a space of 100 feet, came from Mr. J. Townsend, nurseryman, Putney.

In the class for a group of Japanese only, Messrs. Reid & Bornemann, nurserymen, Sydenham, was 1st; and Messrs. James Carter & Co., Holborn and Forest Hill, 2nd, with bold and striking semi-circular groups of high quality.

In the class for group of 50 feet, the best came from Mr. A. Hex, gr. to the Rev. C. H. Spurgeon, Westwood, Upper Norwood, very neatly edged with Ferns. Trained plants showed a great falling off com-

pared to what was seen at the Palace shows of fifteen and twenty years ago. The best came from Messrs. Cherry, Clarke, Weston, and Cooper.

Messrs. Carter & Co.'s special prizes for six dishes of Potatoes brought several very bright collections, Mr. E. S. Wills, of Edgcote Park, taking the 1st prize with perfect tubers.

BIRMINGHAM.

NOVEMBER 11.—The thirty-first annual exhibition took place in the Town Hall, and notwithstanding the wretched weather of the first day, there was a very large attendance.

The principal prizes were those of £20, £15, and £10, for forty-eight blooms, twenty-four incurved and twenty-four Japanese, distinct, for which there were twelve competitors. Mr. Parker, gr. to J. Corbett, Esq., M.P., Impney, Droitwich, staged the best lot, the Japanese being universally acknowledged by the judges to be wonderfully fine.

In the class for twenty blooms, Mr. Parker was again 1st. For eighteen incurved, distinct, Mr. Parker was again 1st, with a fine lot.

For twelve Japanese, distinct, 1st, Mr. Coombes, gr. to the Dowager Countess of Dudley, Himley.

Classes were set aside for twelve and twenty-four *Chrysanthemum* blooms, grown in Birmingham; and Mr. Brasiere, gr. to Sir Thomas Martineau, was 1st in each class, and was closely followed by other exhibitors.

The specimen plants were very fine. In the classes for nine and six, Mr. Dyer, gr. to Mrs. Marigold, was well 1st; Sir Thomas Martineau and Mr. Cadbury running very close. Mr. G. Cadbury's three magnificent Pompons were the only lot staged, and more than deserved the 1st prize.

Fine large Groups were staged, the 1st, 2nd, and 3rd lots running very close together: 1st, Mr. W. H. Dyer, gr. to Mrs. Marigold.

Chinese Primulas also made a grand display. The 1st prize and *Gardeners' Magazine* Medal in the open classes was taken by Messrs. Thomson & Co. of the Sparkhill Nurseries.

For six stove and greenhouse plants, five lots were staged in competition, and two lots of six Orchids were put up, very fine specimens, exhibited by W. Bowd, Esq. (gr. to Mr. W. Palmer), taking the 1st prize, and the 2nd going to the Right. Hon. Joseph Chamberlain, M.P. (H. A. Burberry, Orchid grower), for single specimens of great merit.

Grapes were not so numerous as usual, but some were of excellent quality, especially the three bunches of Muscats and the single bunch of Muscats, all well finished and coloured, exhibited by Mr. Harman, gr. to the Earl of Denbigh, which took the 1st prize in each class. In the class for six bunches of black Grapes, Mr. Slade, gr. to the Duke of Newcastle, was 1st, with a bunch each of Alnwick Seedling, Gros Colmar, Gros Maroc, Mrs. Pearson, Muscat of Alexandria, and Duke of Buccleuch. In the class for three bunches of black Grapes there were nine exhibitors.

Apples were largely exhibited, many of them being very fine. For six dishes of culinary and six dishes of dessert Apples, Mr. Goodacre, gr. to the Earl of Harrington, was 1st, with two very fine exhibits; and Mr. Austin, Witley Court Gardens, was 1st for six and four dishes of Pears.

There was a fine display of vegetables in competition for Messrs. Sutton's prizes for a collection, there being twelve exhibits; and nearly as many for Mr. R. Sydenham's prizes for collections of vegetables, Mr. Greatorex taking the 1st prizes.

Messrs. Pope & Sons, Messrs. Thomson & Co., Messrs. Hewett & Co. staged honorary exhibits, to which Certificates were awarded.

HORTICULTURAL EDUCATION IN KENT.

THE Technical Education Committee of the Kent County Council has devised a scheme for the creation of county scholarships and the selection of county scholars at the Horticultural College, Swanley, Kent, under certain conditions, of which we can only mention a few, and those in a condensed form. Twenty-five scholarships are established, tenable at the college for two years, from January 20, 1892. In respect of fifteen of such scholarships, the committee will pay the whole of the fees due to the college in respect of each scholar. In respect of the remaining ten scholarships, the committee will pay half of such

fees. The fees to be paid to the college in respect of each scholar selected under this scheme amount to £60 per annum, and cover the cost of instruction, board, lodging, and surgical and medical attendance, and all books, apparatus, implements, and appliances, convenient or proper in connection with such instruction. The subjects in which instruction is provided at the college comprise—Horticulture: Orchard trees, bush fruits, fruit borders, fruit culture under glass, pruning, grafting, harvesting and marketing. Mushrooms, Tomatos, vegetables, salads, flowers, hybridisation and propagation, soils, manures. Dairy-work. Poultry-rearing. Bee-keeping. Applied Science: Zoology and general biology, natural history in relation to plant-life, botany, chemistry, horticultural chemistry, geology, meteorology, heat, light, dynamics, hydrostatics and hydro-dynamics, the steam-engine, measuring and surveying, levelling, drawing, building construction, horticultural building, materials, book-keeping, law relating to horticulture. The instruction embraces lectures, classes, laboratory practice and outdoor work under qualified instructors. All students are entitled and required, so far as health and other circumstances permit, to take part in the practical and experimental work of the college in the grounds, glasshouses, and workshops. The scholarships will be granted to three classes of candidates, as follows: Class I. Pupils or past pupils of elementary schools within the meaning of sec. 3 of the Elementary Education Act, 1870, not being teachers, assistant-teachers, or pupil-teachers included in Class II. By sec. 3 of the Elementary Education Act, 1870, the term "elementary school" means "a school, or department of a school, at which elementary education is the principle part of the education there given, and does not include any school or department of a school at which the ordinary payments in respect of the instruction, from each scholar, exceed ninepence a week." Class II. Teachers, assistant teachers, and pupil-teachers in such schools. Class III. Persons (other than those included in Classes I. and II.) who are not, and whose parents are not, in receipt of more than £400 a year from all sources, *i.e.*, who are allowed an abatement of the income tax. The twenty-five scholarships will be awarded among the three classes of candidates as follows: ten to Class I, five to Class II., and ten to Class III. The committee will pay the whole of the fees in respect to scholars in Classes I. and II., and half the fees in respect of scholars in Class III. Candidates must be males, and of not less than sixteen nor of more than twenty years of age on January 1, 1892, must have been domiciled in the county for six calendar months prior to that date, and must possess characters satisfactory to the committee. Each of such twenty-five districts is to be entitled to have one scholar at the college, and with that object is to be entitled to the nomination of five candidates for such scholarship, which five candidates may belong to any one or more of the three classes of candidates before mentioned at the option of the district. From the candidates nominated by each district one will be selected for a scholarship. The committee reserve the right upon the representation of the authorities of the college to remove any scholar whose conduct or progress is, in the opinion of the committee, unsatisfactory, and to supply the vacancy so created by the selection of another scholar from the district from which the scholar so removed was originally selected or from any other district. The scholarships will be awarded by the committee according to the result of an examination to be conducted by or under the direction of the committee, and to be held on Tuesday, December 29, 1891, at 10 30 A.M., at the following four centres or such of them as the committee may determine after the wishes of the candidates in respect thereof shall have been declared upon the nomination papers: Gravesend, Tunbridge, Canterbury, and Ashford. The examination will comprise the following subjects:—1. English; 2. Mathematics; 3. Theoretical Mechanics; 4. Inorganic Chemistry; 5. Physics;

6. Botany and Horticulture. Candidates in Class I. will be examined in the following branches of subjects 1 and 2 only [Elementary]. Candidates in Classes II. and III. will, in addition to more advanced questions upon the branches of subjects required from candidates in Class I., be examined more fully in some of the above-named subjects. In Subject 6, the examination will comprise characters of the root, stem, leaves, and parts of the flower, as illustrated by specimens of common flowering plants; structure of wood, bark, and pith; cells and vessels; food of plants, and manner in which a plant grows; functions of the root, leaves, and different parts of the flower; the comparison of a Fern and a moss with a flowering plant; the formation of different kinds of fruits; the structure of a Bean, and a grain of Wheat or Barley; the phenomena of germination. In this subject, in addition to the branches specified, a few elementary questions in practical horticulture will be set. Further particulars can be obtained from Mr. FRAS. W. CROOK, Secretary, Sessions House, Maidstone.

THE BORDEAUX MIXTURE.

SOME EXPERIMENTS ON THE PREPARATION AND EFFECTS ON VEGETATION OF THE BORDEAUX MIXTURE.

HAVING recently had brought under our notice the fact, that under certain circumstances the application of Bordeaux Mixture to the foliage of young Potato plants may lead to a certain amount of injury to their foliage, it appeared desirable to show how this unfortunate result could happen. We have heard so far of nothing but favourable results following this treatment of the Potato disease. I may say that, personally, the first intimation I received was a letter from an unknown correspondent asking details of the Jensenian method, alleging as a reason that the Bordeaux Mixture had been found an utter failure. I do not mean that these were the exact words used, but that was the sense of the communication. Naturally I felt surprised; but in the course of a few days, the *Gardeners' Chronicle* appeared with a fuller account of the experiment upon which my correspondent had based his unfavourable opinion on the matter.

It is a well-known fact that powdered sulphate of copper, dusted on the leaves of living plants, will destroy those tissues with which it comes in contact. But it is not so well known that a solution of sulphate of copper, however weak, will do the same. The explanation is simple enough. It is simply a question of concentration. The drops on the plants evaporate, and, of course, the solution becomes stronger in each one until nothing remains but the solid copper sulphate, which soon shows its presence by producing brown or black spots, and consequent destruction of leaf-tissue.

In the Bordeaux Mixture, the copper sulphate is decomposed by lime into the hydrated oxide of copper, which body has been found by experience to be fatal to the spores of the *Phytophthora*, and indeed to most other parasitic fungal spores, while it does no injury to the foliage of the host-plants.

On October 28, two samples of 3 per cent. Bordeaux Mixture were made by my friend Dr. H. C. Brown. No. 1 was made with some quick-lime which had been bought two or three days before for another purpose. It was said to be freshly-prepared good lime, and answered the purpose for which it was originally obtained quite well. We found, however, that the Bordeaux Mixture made with it gave a distinctly acid reaction with blue litmus paper, and what was of much more importance, the supernatant liquor contained large quantities of copper in solution, a copious precipitate being obtained with the ferrocyanide of potassium. On the following morning the Mixture was still acid, and gave an abundant precipitate with the ferrocyanide, although not so copious as it did the night before. After four days, *viz.*, on November 1, the supernatant liquor still showed traces of dissolved copper, but this was much

reduced in quantity—reduced to a trace; the reaction was faintly acid. The lime used for this mixture was apparently good. The addition of water to it caused it to become warm, but not distinctly hot.

No. 2 solution was made in exactly the same way, and with the same quantities, but the lime was freshly burned, and evolved great heat when water was applied to it. In this case the Bordeaux Mixture had an alkaline reaction, and no trace of copper could be found in the supernatant liquor of the ferrocyanide test. I may say that the lime used for No. 1 was obtained by myself, and that I had no idea but that it was (as it was said to be) good quick-lime until after the solution was made, and we found traces of dissolved copper in the supernatant liquor. This led us to try the effect of using another sample of really quick-lime. It is clear that a person not alive to the importance of having a mixture free from undecomposed copper sulphate would never have dreamed that his Bordeaux Mixture was not properly made, but it is equally clear that had it been used upon the foliage of young plants of any sort, especially upon that of young Potatoes, it would have produced most disastrous results.

No. 1 solution was left in Dr. Brown's laboratory for four days, until November 1. It had then lost nearly all trace of copper, but for the sake of seeing what effect it would produce, a quantity was sprayed upon the young shoots of a Tomato plant. It contained such a minute quantity of free copper sulphate that we did not expect any result could be produced, but after the lapse of three days its influence was distinctly visible upon the leaves.

As control experiments to test the effect of dissolved copper sulphate upon the foliage of living plants, Dr. Brown prepared three solutions, containing 1 per cent., 2 per cent., and 3 per cent. of copper sulphate respectively.

The 1 per cent. solution was, on November 3, sprayed upon the young shoots of a Tomato plant, upon some seedling plants of Pyrethrum, Celery, Lobelia, and a plant of Ranunculus bulbosus.

The 2 per cent. solution was applied to a Tomato, a Calceolaria, and a young plant of Clover.

The 3 per cent. on a Marguerite Daisy plant, a Scabious, and on a Tomato.

On the following morning all these plants, without exception, had their foliage blackened. Those to which the 1 per cent. solution had been applied were somewhat less injured than those upon which the stronger solutions had been sprayed, but the effect was the same upon all, and the differences much less than one would have expected. Specimens of the injured foliage are sent herewith. *Charles B. Plowright, M.D., King's Lynn, Nov. 9, 1891.*

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

HEATING BY STEAM.—*Amateur* asks if any of our readers will kindly give him some information on this method of heating. Is it cheaper than hot water, and what are its disadvantages? Why is it not more in use?

CIDER MAKING.—Can any of our readers inform "A. W., Hereford, November 9, 1891," the best method of using Hops and sugar, to increase the body and keeping-qualities of cider. How are they applied? and in what quantities per hogshead of 54 gallons?

MARKETS.

COVENT GARDEN, November 12.

BUSINESS quiet. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.			
	s. d.	s. d.	
Apples, ½-sieve	1 0	4 0	
Grapes	0 6	7 6	
Kent Cobs, 100 lb.	30	0-35 0	
Lemons, per case	15	0-30 0	
Melons	0 6	1 0	
Pine-apples, St. Michael, each	2 0	8 0	

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Acacia or Mimosa	1 0	1 3	Marguerites, per doz.	2 0	4 0
French, per bunch	1 0	1 3	Narcissus, paper-	0 6	1 6
Azalea, per doz. sprays	1 0	1 6	white, Fr., p. bun.	0 6	1 6
Camellias, white, doz.	2 0	4 0	Orchids:—		
red, per doz.	1 0	2 0	Cattleya, 12 blms.	6 0	12 0
Carnations, 12 blms.	1 6	2 6	Odontoglossum		
Chrysanthemums, 12			crispum, 12 blms.	3 0	6 0
blooms	1 0	3 0	Pelargoniums, scar-		
12 bunches	4 0	12 0	let, per 12 bun.	4 0	6 0
Cloves, per dozen			12 sprays	0 6	1 0
blooms	2 0	2 6	Roses, Tea, per dozen	1 0	3 0
Eucharis, per dozen	3 0	6 0	coloured, dozen	2 0	4 0
Gardenia, per dozen	2 0	4 0	yellow (Maré-		
Heliotrope, 12 sprays	6 0	9 0	chals), per doz.	4 0	6 0
Hyacinths, 12 sprays	0 9	1 6	red, per dozen	1 0	2 0
Lilac, white (French)			various, doz. bun	6 0	9 0
per bunch	5 0	7 0	Taberose, 12 blms.	0 4	0 6
Lilium Harrisii, doz.	4 0	6 0	Violets, Parme, per		
Liliums, various, doz.	1 0	3 0	bunch	3 0	4 0
Maiden Hair Fern,			Car, per bunch	1 0	2 0
12 bunches	4 0	9 0	English, 12 buus.	1 0	1 6
Mignonette, doz. bun.	1 6	2 0			

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Adiantums, per doz.	4 0	12 0	Erica gracilis	doz.	0 9-12 0
Aralias, per doz.	6 0	12 0	Ferns, various, doz.	4 0	9 0
Aspidistra, per doz.	18 0	63 0	small, per 100	8 0	15 0
Begonias, per doz.	4 0	6 0	Ficus, each	1 0	5 0
Chrysanthemums,			Fuchsias, per dozen	6 0	9 0
per dozen	6 0	9 0	Scarlet Pelargo-		
large, each	2 0	3 6	niums, per doz.	4 0	6 0
Coleus, per dozen	3 0	6 0	Behotrops, per doz.	4 0	6 0
Cyclamens, per doz.	9 0	18 0	Marguerites, per doz.	6 0	12 0
Cyperus, per dozen	4 0	10 0	Palms, various, each	2 0	21 0
Dracenas, each	1 0	5 0	specimens, each	10 6	84 0
Erica hyemalis, per			Solaums, per dozen	9 0	12 0
dozen	12	18 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe,			Lettuces, per doz.	1 0	1 6
each	0 4	0 6	Mushrooms, punnet	2 0	...
Beans, French, lb.	0 6	1 0	Mustard and Cress,		
Beet, red, per dozen	2 0	3 0	punnet	0 4	...
Carrots, per bunch	0 4	0 6	Parsley, per bunch	0 3	0 6
Cauliflowers, each	0 3	0 6	Seakale, p. basket	3 0	...
Celery, per bundle	2 6	3 6	Shallots, per lb.	0 6	...
Cucumbers, each	0 6	0 9	Spinach, per bushel	3 6	...
Endive, per dozen	2 0	3 0	Tomatos, per lb.	0 9	1 3
Herbs, per bunch	0 9	1 0	Turnips, per bunch	0 4	0 6

POTATOS.

Market values remain steady, but with supplies in comparison with last year's arrivals the trade would see lower prices. Taking the cue from the market values at the commencement of this year for last year's crops, the farmers generally are speculating for the same results. We may have weather to correspond with that of last winter, but he who should speculate on such a possibility would be a "plunger," besides taking into consideration what would happen with a mild winter. Market values now about 15 per cent. higher than last year, with 30 per cent. less supplies. All other kinds of vegetables remain low, which have a great influence on the price of Potatos throughout the season. *J. B. Thomas.*

SEEDS.

LONDON, Nov. 11.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., report an improved feeling for Clover seeds generally. American Red is called 1s. higher. Blue Peas continue in strong request at full prices. Haricot Beans are now moving upwards. White Runners offer at reasonable figures. Canary seed, having lain dormant for some years, exhibits a sudden upward jump of several shillings. Hemp seed is also firmer. For Rye there is an improved demand at enhanced quotations. Winter Tares are unchanged. Mustard and Rapeseed keep steady. Linseed, Buckwheat, Millet, and Dari realise former terms.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 10.—Quotations:—Brussels Sprouts, 1s. to 2s. per half-sieve; Parsnips, 4d. to 9d.; Cos Lettuce, 4d. to 9d. per score; Endive, 4d. to 1s.; Cabbage Lettuce, 3d. to 9d.; Leeks, 1s. 6d. to 2s. 6d.; frame Cucumbers, 1s. to 1s. 9d. per dozen; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; English Onions, 4s. 6d. to 5s. 6d. per cwt.; Belgian do., 2s. 9d. to 3s. 3d.; Dutch do., 3s. to 3s. 9d. per bag of 110 lb.; Spanish do., 6s. to 6s. 6d. per case; Celery, 4d. to 1s.; Horseradish, 1s. to 1s. 1d. per bundle; Cabbages, 1s. to 1s. 6d.; and Savoy, 2s. to 3s. 6d. per tally; Greens, 1s. to 1s. 6d.; Turnips, 2s. to 2s. 3d.; Carrots, 1s. to 2s. 6d.; Onions, 2s. to 2s. 6d.; Parsley, 1s. 6d. to 2s. 6d. per dozen bunches; Spinach, 1s. to 1s. 6d. per bushel; English Apples, 2s. 6d. to 6s. per bushel; American do., 10s. to 18s. per barrel; Pears, 1s. to 2s. per half-sieve; English Tomatos, 4s. to 7s. 6d. per peck; foreign do., 1s. to 2s. per box.

BOROUGH: Nov. 10.—Quotations:—Cabbages, 2s. 6d. to 4s. 4d. per tally; Broccoli, 3s. to 5s. do.; Turnips, 1s. to 1s. 6d. per dozen bunches; Carrots, 1s. to 1s. 9d. do.; English Onions, 4s. 6d. to 5s. per cwt.; English Apples, 2s. to 9s. per bushel; Pears, 2s. 6d. to 7s. do.; Canadian Apples, 12s. to 25s. per barrel; and Newtown Pippins, 20s. to 50s. do.

STRATFORD: Nov. 11.—There has been a good supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 2s. 6d. to 3s. 6d. per tally; Savoy, 3s. to 5s. do.; Greens, 1s. to 1s. 6d. per dozen bunches; Cauliflowers, 9d. to 1s. 3d. per dozen; do., 4s. to 6s. per tally; Turnips, 2s. to

2s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 40s. to 50s. do.; do., cattle-feeding, 26s. to 32s. do.; Brussels Sprouts, 1s. 3d. to 1s. 9d. per half-sieve; Spinach, 1s. to 1s. 3d. per sieve; Carrots, 1s. 6d. to 2s. 6d. per doz. bunches; Horseradish, 1s. 2d. to 1s. 3d. per bale; Parsnips, 65s. to 70s. per ton; Mangels, 15s. to 18s. do.; Swedes, 20s. to 25s. do.; Onions, English, 100s. to 120s. do.; do., Dutch, 3s. 9d. to 4s. 6d. per bag; do., Oporto, 6s. to 6s. 6d. per case; Apples, English, 2s. to 6s. per bushel; do., American, 12s. to 22s. per barrel.

POTATOS.

SPITALFIELDS: Nov. 10.—Quotations:—Snowdrops, 60s. to 80s.; Early Rose, 50s. to 70s.; Hebrons, 60s. to 80s.; Imperators, 60s. to 80s.; Champions, 50s. to 65s.; Regents, 60s. to 80s. per ton.

BOROUGH: Nov. 10.—Quotations:—Hebrons and Elephants, 70s. to 90s.; Imperators, 55s. to 80s.; Bruces and Magnums, 60s. to 90s. per ton.

STRATFORD: Nov. 11.—Quotations:—Magnums, 65s. to 85s.; Imperators, 65s. to 80s.; Elephants, 65s. to 80s.; Snowdrops, 70s. to 80s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Nov. 7, and for the corresponding period last year:—1891, Wheat, 35s. 7d.; Barley, 30s. 11d.; Oats, 2s. 6d. 1890, Wheat, 32s. 1d.; Barley, 29s. 5d.; Oats, 17s. 5d. Difference: Wheat, +1s. 6d.; Barley, +1s. 6d.; Oats, +3s. 1d.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; do., inferior, 40s. to 75s.; hay, best, 60s. to 92s.; do., inferior, 26s. to 50s.; and straw, 20s. to 40s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.		
	Above (+) or below (-) the Mean for the week ending November 7.	ACCUMULATED.			More (+) or less (-) than Mean for Week.	No. of Rainy Days since Jan. 4, 1891.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 4, 1891.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.			
1	1 +	24	7	+ 213 +	85 10	200	42.0	13	28
2	1 +	23	10	- 44 +	129 7	150	24.1	10	81
3	2 +	26	0	- 82 +	85 6	146	19.5	0	29
4	1 +	30	3	- 69 +	106 5	158	22.0	18	34
5	0 aver	23	8	- 96 +	101 6	155	24.5	8	32
6	1 -	30	5	- 94 +	135 7	150	26.7	23	37
7	1 +	27	8	+ 97 +	58 12	161	36.1	1	33
8	0 aver	26	3	+ 40 +	34 9	148	28.3	5	20
9	2 -	26	1	- 121 +	110 10	158	34.8	18	38
10	0 aver	25	2	+ 42 +	43 8	180	27.7	12	32
11	1 -	31	1	- 21 +	39 8	163	30.7	16	35
12	3 -	34	0	- 16 +	40 9	157	28.9	64	48

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 7, is furnished from the Meteorological Office:—

"The weather of the week was quiet and dry generally, although a good deal of haze or fog prevailed over Great Britain, and the sky was often very cloudy or overcast.

"The temperature was 3° below the mean in the 'Channel Islands,' and 2° below in 'England, N.E.

and S.W.'; in the other parts of the Kingdom it did not differ materially from the normal. The highest of the maxima were recorded either on the 1st or 2nd, and varied from 57° in 'England, E. and S.', to 52° in 'England, N.E.' During the latter part of the week the daily maxima were generally below 50°. The lowest of the minima were registered during the early morning of the 1st, and varied from 26° in the 'Midland Counties,' and 27° in 'Scotland, E.', to 31° in 'England, S.W.', and 37° in the 'Channel Islands.'

"The rainfall has been much less than the mean in all districts. In several of the more southern and western localities, the fall has been scarcely appreciable.

"The bright sunshine has been very deficient in nearly all districts; in the 'Channel Islands,' however, there has been a considerable excess, the percentage of the possible duration having been as high as 66. Elsewhere the percentage ranged from 23 in 'England, S.', and 18 in 'England, E. and S.W.', to 1 in 'Scotland, W.', whilst in 'England, N.E.', the amount being less than half an hour, was not appreciable as a percentage of the possible duration."

VARIORUM.

THE OPIUM POPPY.—In Persia, where there is a liberal supply of water for irrigation, and in the close vicinity of the village, are to be seen the fields of the Opium Poppy, more especially since the failure in the silk crop, as, wherever the villages have suffered from the disease amongst the silkworms, the inhabitants have taken to the culture of opium, resulting in a complete demoralisation of the villagers, who, almost as a whole—men, women, and children—have adopted the pernicious practice of eating, besides many of smoking, the drug. In Afghanistan there is little opium grown, and the wholesale demoralisation is absent. At Bezd and other villages in Persia, children came to me asking for some means of getting rid of the habit, and out of every small crowd of children who used to surround my tent, coming to see the stranger, one or two could be picked out from amongst the number, from their haggard looks and peculiar pasty complexion, as being addicted to smoking the poison. The eaters look upon the habit of smoking as an enormity that they would never adopt. Large quantities of opium are traded in between the villages and towns, but what became of it after that I could never find out. The people were very reticent in talking about the trade in opium—I suppose, owing to the heavy Government tax upon its cultivation and sale. The oil of the seeds is much used for burning, as also for food, and the seeds are eaten in sweetmeats. *J. E. T. Aitchison's Notes on Products of Afghanistan and Persia.*

NOTICES TO CORRESPONDENTS.

ACER NEGUNDO: *H. C.* The fungi on your tree come after the tree has been injured by frost or wounds of any kind, and are not themselves a cause of disease, provided the bark be uninjured. It is extremely common on dead twigs of all kinds. There are two forms, one in the form of smooth pink pimples, the other in that of small groups of pimples or tubercles, but both forms belong to the same species of *Nectria cinnabarina*.

CORRECTION.—In our report of the Watford Chrysanthemum Show, Mr. Neve was inadvertently spoken of as gr. to H. H. Gibbs, Esq., M.P., instead of Mr. E. Beckett, who was the winning exhibitor in the principal classes. Mr. Neve was awarded first honours in other classes.

FIELD FOR GROWING MUSHROOMS: *Mushroom.* A thick dressing of fresh horse droppings dug in, or buried in patches a few yards apart, and covered with 6 inches of soil, and well trodden into a firm mass, might have the effect of inducing Mushrooms to grow in the field. The land should be made very firm by rolling it when the soil has settled after the digging. Getting these esculents to grow in fields is an uncertain business.

DAFFODILS AND SNOWDROPS IN GRASS: *A Subscriber.* We have never heard of any case of cattle being poisoned from eating the leaves of these plants; still, both contain poisonous matter.

GREASE BANDS FOR FRUIT TREES: *West.* Common cart-grease will answer the purpose. It should be spread on bands of thick paper, 6 inches wide,

which with an underlay of grease-proof paper of the same width, may be fastened with string or wire round the stems, 2 feet from the ground. If the greased paper band could be so cut as to bend over away from the stem at the top, it would answer the purpose it is intended for better than a flat band. The bands should be on the trees ere this, and they will require occasionally smearing anew.

HEAVY GOOSEBERRIES: *A. F. Z.* London, Catherine, Thumper, Macaroni, Rifleman, Lancashire Lass, Roaring Lion, and many others. Apply at any good fruit nursery.

INSECTS: *B. & Son.* The white maggots which are destroying your old crimson Clove plants, by eating out the heart of the stems at the base of the leaves, are the larvae of a two-winged fly, allied to the Lettuce fly (*Gardeners' Chronicle*, 1841, p. 364, *Anthomyia lactuca*). The plants show the presence of the maggots by the withered leaves, which should be picked and burnt. We will try to rear the fly. *I. O. W.—J. S.* The egg-cases and eggs of the Vaporer moth.—*W. W.* The eggs of the Lackey moth.

LARGE GOOD PEARS, ETC: *A. F. Z.* Jargonelle, William's Bon Chrétien, White Doyenné, Beurré Bosc, B. Diel, B. d'Areberg, B. d'Amanlis, Thompson's Napoleon, Colmar d'Or, Hacon's Incomparable, Louise Bonne de Jersey, Marie Louise, Marie Louise d'Uccle, Madame Treyve, Glout Morceau, Vicar of Winkfield, Easter Beurré, and, where it does well, Knight's Monarch. There are several other good trustworthy varieties, but they cannot be called large fruits. We know of no such Celery as you mention.

NAMES OF FRUITS: *S. Reginald.* Small specimen of Margil.—*A Constant Reader.* 1, Marie Louise; 2, Beurré d'Amanlis; 3, smashed; 4, Josephine de Malines.—*A. E. Liddington.* Rymer.—*C. W. D.* London, or Five-crowned Pippin.—*Constant Reader.* Pear: Bellissime d'Uliver.—*J. A. I.* Yorkshire Greening; 2, King of the Pippins; 3, not recognised; 4, Dumelow's Seedling.—*D. I.* Bedfordshire Foundling; 2, Striped Beefing; 3, Beauty of Kent; 4, Beurré de Capiaumont; 5, Winter's Bon Chrétien; 6, Beurré; Durham.—*G. McDonnell.* Apple: Glorie Mundi. Pears: 1, Styrian; 2, Vicar of Winkfield; 3, Old Crassane; 5, Duchesse d'Angoulême; 7, Marie Louise; *W. L.* Colonel Vaughan.

NAMES OF PLANTS: *J. M.* *Strelitzia regina*; ordinary stove treatment; water freely during growth, but very sparingly, when the plant is at rest.—*G. C.* *Abies Veitchii* (true), and *A. pectinata*, the Silver Fir.—*C. T. D.* What used to be called *Usnea florida*.—*J. T. L.* 1, *Grevillea* or *Lomatia*—send when in flower; 2, *Hemanthus albidus*; 3, *Cologyne fuliginosa*.—*C. D. I.* *Davallia pyxidata*; 2, *Pteris serrulata cristata*; 3, *Cyrtomium Fortunei*; 4, *Pteris longifolia*; 5, *Cheilanthes elegans*; 6, *Aspidium (Nephrodium) molle*.—*George.* 1, *Retinospora pisifera*, var. *filifera*; 2, *Retinospora pisifera*, var. *plumosa*; 3, *Thuiopsis dolabrata*; 4, *Thuiopsis borealis*; 5, *Thuya orientalis*, var. *Sieboldii*; 6, *Libocedrus decurrens*.—*J. T. L.* Source d'Or.—*W. L.* *Pandanus javanicus variegatus*. The fruit is not edible, but the plant is ornamental, and it is sometimes employed for table decoration.

NICHOLSON'S Gardeners' Dictionary: *A. A. T.* The work is published by Upcott Gill, 170, Strand, W.C. The report of the Conifer Conference is not yet published.

SACRED LILY OF CHINA: *D. W.* *Narcissus tazetta*, mentioned in these columns, p. 277, February 28 this year, and p. 468, April 13, 1889, where it is also figured; directions for growing the bulbs in a bowl of water being there given.

SHOW REPORTS.—Owing to the great pressure on our space, several of these are deferred to our next issue.

SULPHATE OF COPPER: *S. H., New Zealand.* See our present issue. We do not think any advantage would accrue from its use in the case of the Phylloxera.

COMMUNICATIONS RECEIVED.—*Rambler.*—*J. W. B.*—*J. H. K.*, Haarlem.—*L. L.*, Brussels.—*Ch.* *D. B.*, Liège.—*H. D.*, Breslau.—*W. B. L.*—*W. G.*, Adelaide.—*Dr. P.*—*W. T. T. D.*—*M. B.*—*H. P. M.*—*J. W.*—*R. P.*, Costa Rica.—*H. N. E.*—*C. W.* Cassel.—*J. Riddle.*—*N. D. B.*—*C. E. M.*—*Münner.*—*R. L.*—*E. M.*—*J. Hood.*—*Dr. F. Kränzl.*—*E. C.*—*W. E. D.*—*J. Hughes.*—*Pioneer.*—*J. B. J.*—*W. W.*—*E. Neurt.*—*C. B.*—*T. D. F.*—*J. H.*—*A. P.*—*W. A. C.*—*T. S.*—*T. B.*—*J. R.*—*H. E.* Heushaw Russell.—*J. Carter & Co.*—*J. B. C.*—*P. Pryor.*—*E. P. Dixon & Sons.*

SPECIMENS RECEIVED.—*W. B. L.*, Birmingham (many thanks, very interesting).

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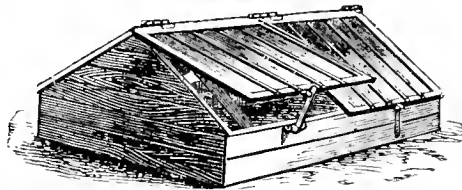
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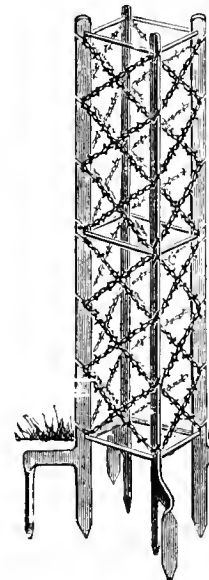
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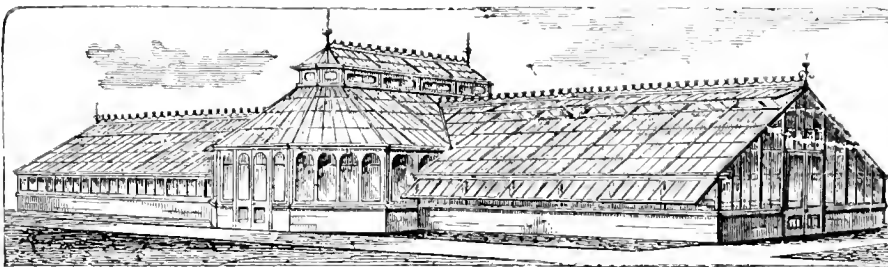
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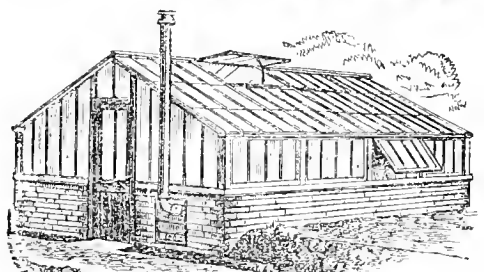
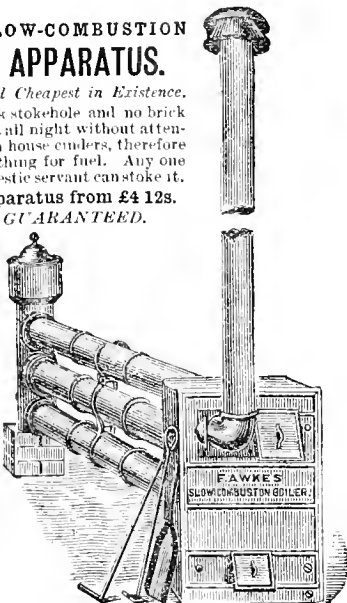
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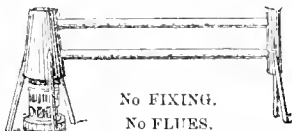
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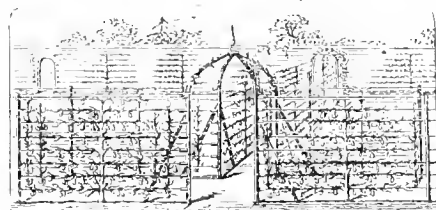
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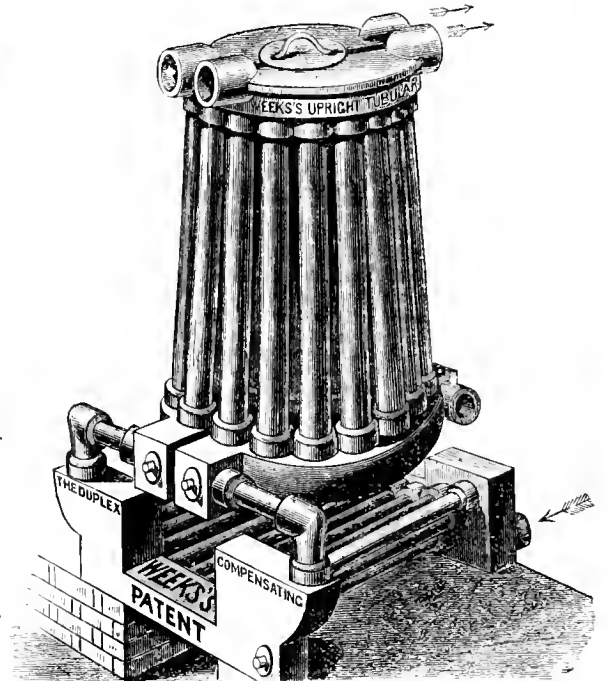
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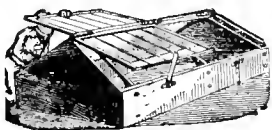
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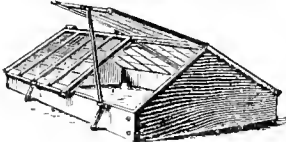
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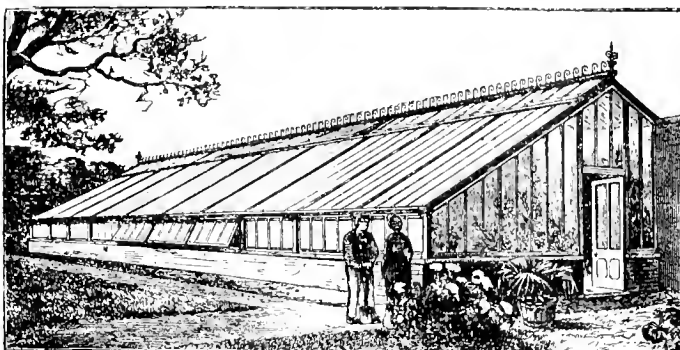
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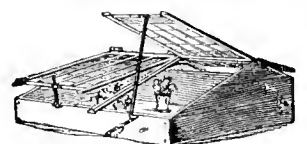
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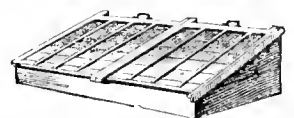
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Friday Next.

A Choice Collection of well-grown ESTABLISHED ORCHIDS, the property of a private Gentleman, who is giving up their cultivation. For Sale, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 27, at half-past 12 o'clock, the above Collection of ESTABLISHED ORCHIDS, comprising 213 lots, and including a number of Odontoglossum Alexandræ, Epidendrum, Cattleya gigas, and others; Cymbidiums, Dendrobiums, Calanthes, Saccolabium, Cypripedium, &c.; together with a few special Hybrid Cypripediums, amongst them C. orphanum, C. amabile, C. robustum, C. grande, C. Sieberianum, C. Lindleyanum, C. plenarium superbum, C. Hera; an Importation of Phalaenopsis violacea, a Calceyia bigger and longer than C. Dayana, evidently most floriferous, some of the flower-spikes being over 4 feet long and through; Vandas, Dendrobies, and Marantias, and eight volumes of the *Orchid Album*.

On view morning of Sale, and Catalogues had.

Heathfield, Sussex.

About ten minutes' walk from the Heathfield Station.

TWO DAYS' SALE of a PORTION of the WELL-GROWN NURSERY STOCK, by order of Mr. W. BEAN, the ground being required for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Tower Nurseries, Heathfield, on WEDNESDAY and THURSDAY, November 25 and 26, at 12 o'clock each day, 6000 Conifers, comprising 2000 Cupressus Lawsoniana and Erecta viridis, and many others, 100 Arancaria imbricata, 5000 Laurels of sorts, 500 Aucubas, a quantity of Border Shrubs in great variety, Deciduous and Flowering Shrubs, Standard, Dwarf, and Climbing Roses, Climbing Plants, 5000 Pinus austriaca, and others, Silver and Scotch Firs, 2000 Standard Trees, quantities of Currants and Gooseberries, Fruit Trees, and a large quantity of Forest Trees, Quick, Beech, Hollies, &c.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Feltham, Middlesex.—Two Days' Sale.

A PORTION of the exceptionally well-grown NURSERY STOCK, by order of Messrs. C. Lee & Son, the ground being required for other purposes. The Stock is in magnificent condition for removal, having been recently transplanted with great care.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Feltham, Middlesex, on THURSDAY, and FRIDAY, December 10 and 11, at 12 o'clock precisely each day, 1500 CUPRESSUS ERECTA VIRIDIS, 25 feet; 2000 ENGLISH YEW, 2 to 4 feet; 1000 HOLLIES, 1000 named and HYBRID RHODODENDRONS, and a large variety of CONIFERS, of which particulars will be given in future Advertisements.

Dutch Bulbs.—Great Unreserved Sales. EVERY MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and SATURDAY.

10 tons, comprising 3000 lots, are actually sold every week. MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., FIVE DAYS WEEKLY, as above, at half-past 11 o'clock each day, LARGE CONSIGNMENTS of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from HOLLAND. Lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Richmond, Surrey.

HIGHLY IMPORTANT FOUR DAYS' UNRESERVED SALE of the FIRST PORTION of well-grown NURSERY STOCK, by order of Messrs. G. & W. Steel, in consequence of the death of the senior partner, and the intention of the Vendors to relinquish the business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Common and Gasheld Nurseries, Richmond, Surrey, about ten minutes' walk from the Richmond Railway Station, on MONDAY, November 30, and THREE FOLLOWING DAYS, at 12 o'clock precisely each day, the FIRST PORTION of the extensive and well-grown NURSERY STOCK, including, amongst other items, 10,000 Aucubas, 1 to 4 feet, a large number being suitable for pots and for growing on; 1000 Green and Variegated Box, 2 to 5 feet; 1000 new Silver Dwarf variety, 12 to 18 inches, suitable for pots; 4000 Golden Privet, 1 to 2½ feet; 4000 oval leaved Privet, 3 to 5 feet; 3000 English Yews, 3 to 6 feet; 5000 Laurels, 4 to 6 feet; 5000 Gold and Silver Variegated Hollies—a splendid lot, including 2000 Standard and Pyramid and single stems; 5000 Green Hollies, 1000 Retinospora plumosa aurea, 2 to 4 feet; 750 Thuja Lobbi, 4 to 6 feet; 750 Cupressus Lawsonii, 3 to 5 feet; 5000 Rhododendron ponticum, 1½ to 3 feet; 5000 Rhododendron Stocks (good), 2500 Rhododendrons, fine named hybrids, 1½ to 3 feet; 500 Standard Rhododendrons, fine named hybrids, 2½ to 4 feet stems; 1000 Azalea mollis, 12 to 18 inches; 1000 Azalea pontica, 12 to 18 inches; 1500 Spruce Firs, 3 to 5 feet; 5000 Green Hollies, 2 to 5 feet; a large assortment of Specimen Ferns, Standard Ornamental Trees, 800 Fruit Trees, 2 to 3 years, amongst them 4000 Plums, principally Victoria and Gisborne; 500 Pyramid Morello Cherries, fruiting trees. Six ricks of old meadow HAY, about 100 loads; large Market VAN, Bay CART-HORSE, rising six years, &c.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—THE LEASE of the Nurseries and old-established Business is for DISPOSAL. Particulars can be obtained of the Auctioneers.

Dutch Bulbs. Dutch Bulbs.

SALES EVERY MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY.

To Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, every MONDAY, WEDNESDAY, and SATURDAY, and frequently on THURSDAY, at half-past 12 o'clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving Weekly from well-known Farms in Holland. On view mornings of Sale, and Catalogues had.

Wednesday Next.

A CONSIGNMENT of LATANIA BORBONICA, KENTIAS, DRACENAS, ARALIAS, and other STOVE and GREENHOUSE PLANTS, in splendid condition, from Ghent, 500 choice named ROSES, a good Collection of BORDER PLANTS, LAURELS, EVERGREENS, &c.; LILIUMS in quantity, SPIRÆA, CARNATIONS and PINKS, LILY OF THE VALLEY, AMARYLLIS, &c.

MR. J. C. STEVENS will include the above in his SALE, by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 25.

On view morning of Sale, and Catalogues had.

Brox Nursery, Brox, near Chertsey, Surrey.

IMPORTANT SALE of NURSERY STOCK. MESSRS. WATERER AND SONS are instructed by Messrs. Gray & Sons to SELL by AUCTION, on MONDAY and TUESDAY, November 23 and 24, 1891, at 11 for 12 o'clock each day, the exceedingly well-grown NURSERY STOCK, which has all been moved within the last two years, and is in perfect order for removal. It comprises 10,000 Cupressus Lawsoniana, 1 to 5 feet; 2000 American Arbor-vite, 1 to 3 feet; 1000 English Yews; 15,000 Thuja Lobbi, 1 to 5 feet; 10,000 Weymouth Pine, 1 to 5 feet; several thousand Green and Variegated Hollies; 1000 Aucuba japonica, 1 to 2 feet; 21,000 Rhododendron and Hybrid Seedlings, 1 to 3 feet; 500 Purple Lilies, 4 to 6 feet; 11,000 Common and Portugal Laurels, 1 to 6 feet; 2000 specimen Border Shrubs; a large quantity of Dwarf and Standard Roses, the choicest sorts; 1000 Standard Lime, Birch, Sycamore, Maple, Ash, and Poplar, 8 to 14 feet; 3000 Larch, 2 to 6 feet; 1000 cut-back Cherry, 2 to 6 feet, &c., &c.

May be viewed seven days prior to the Sale, and Catalogues obtained upon the Premises, and of the Auctioneers, at either of their Offices, at Chertsey; opposite Booking Office, Weybridge Station; and opposite Station Entrance, Walton-on-Thames.

The Tivoli Nursery, Chapel Road, West Norwood.

SALE of SURPLUS STOCK. MR. W. N. WILLOUGHBY will SELL by AUCTION, on the premises, on MONDAY, November 30, at 12 o'clock, a choice collection of NURSERY STOCK, including 6000 Irish Lilies, 1000 of which are in 32-pots, and about 5000 in the ground, from 3 to 6 feet high; Standard and Pyramid-bearing Pear, Apple, and Plum Trees; Rose Trees, Evergreens, Cupressus, Green Euonymus, about 500 Aucubas, Weigelia rosea, Guellder Roses, Privet ovalifolium, and other Deciduous Shrubs; Irish and English Yews, Golden and Green Hollies; Limes, Sycamores, Planes, Mountain Ash, Box, and Copper Beech Trees; Laburnums, Clematis, Forsythias; also a large quantity of Border Shrubs.

May be viewed from Thursday, November 25, between the hours of 9 and 4; and Catalogues may be had on the Premises, or of the Auctioneer, 399, Northwood Road, S.E., and facing the Railway Station, West Norwood.

WANTED, to RENT, a SMALL NURSERY, or a PLACE as WORKING MANAGER, where, later on, to join in the Business.—BRUNSWICK, 58, Quentin Road, Lee, S.E.

WANTED, to PURCHASE, or RENT on LEASE, a SIX-ROOMED COTTAGE, with ACRE of light LAND, suitable for Greenhouses. Near Rail and London.—M. RUSSELL, Henfield, Sussex.

TO BE LET, 14 miles from London, on the Bath Road, HEATHROW FARM, Harmondsworth, Middlesex, from Michaelmas next; contains 438 acres of good Arable and 44 of Meadow Land. Let as a whole, or divided into three or four Market Gardens. The House and Buildings are 3 miles from West Drayton and Hayes Stations (G. W. R.), also Feltham and Asbford Stations (S. W. R.). No Agents need apply.

For particulars, apply to WALTER C. RICHMOND, Wrotham Park Estate Office, Barret, Herts.

To Gardeners and Florists.

MATURED GARDEN, 16 acres, excellent land; twenty Green and Vine-houses (30 to 300 feet in length); two Cottages. Moderate rent. ELDRIDGE, 2, Western Parade, Southsea.

To Florists and Nurserymen.

FOR DISPOSAL, an ESTABLISHED BUSINESS, centre of popular town in Kent. Hand-ome Conservatory, good Gardens and Houses. Rare opportunity for energetic man. No Premium. In-going at Valuation.—B. POMERET, Valner, Tunbridge Wells.

LONDON, West-End.—Main Thoroughfare. Bold Corner position. FURNISHING FLORISTS' and CUT FLOWERS BUSINESS. Suit Lady. Lease 18 years. Price £650, or offer.—Full particulars of PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.

KENT.—To Fruit Growers and Market Gardeners. Adjoining Station, South Eastern Railway. Valuable FREEHOLD FRUIT GARDEN, about 20 Acres. Immediate possession can be had. Personally inspected.

Particulars of Messrs. PROTHEROE AND MORRIS, Land Agents, 67 and 68, Cheapside, London, E.C.

Landscape Gardening.

ARTHUR M. KETTLEWELL (Author of *The Theory and Practice of Landscape Gardening*), brings experienced and careful personal attention to the artistic arrangement of Ornamental Grounds, Parks, Gardens, &c. Excellent testimonials from former patrons. Address, Titley, R.S.O., Herefordshire.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.

Address, SECRETARY, 43, Great Tower Street, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

ORCHIDS.

CATTLEYA TRIANÆ, FROM A NEW DISTRICT.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited,

Have just received a large and splendid importation of CATTLEYA TRIANÆ, from an entirely new district. The Collector discovered the plants during the blooming season, and he states that there are an unusually large number of the pure white forms amongst them. The entire lot looks distinct. Inspection of these and also of the Company's immense Stock of Established, Semi-established, and Newly-Imported ORCHIDS is earnestly invited.

Full particulars on application to the Company.

THE VINEYARD & NURSERIES, GARSTON, near LIVERPOOL.

COMMON ASH and SYCAMORE, stout transplanted stuff, 3 to 4 feet, 20s. p r 1000. No reasonable offer refused for a quantity. RHODODENDRON PONTICUM and HYBRID SEEDLINGS, in various sizes, at low prices. Samples on application. J. J. MARRIOTT AND CO., Nurseries, Wallsall.

MAIDEN CHERRIES, probably the finest in the country; clean, stout, and well-rooted. Fine Standards for Orchards.

TARRAGON, for forcing, large clumps transplanted last spring. VICTORIA PLUMS, thousands of fine Standards and cheap Market Trees.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

SEAKALE for FORCING, superior Selected Crowns, 75s. per 1000; under 500, 8s. per 100. Cash with orders.—Address, ALFRED ATWOOD, Market Grower, 21, Shillington Street, Battersea, S.W.

St. George the Martyr, Southwark.
TENDER FOR TREES.

TENDERS are invited for SUPPLYING FRESH TREES, and KEEPING in GOOD ORDER, &c., the WHOLE of the TREES (420) in the public streets of the above Parish. A Copy of Specification can be had upon application at the Vestry Clerk's Office any day between 10 and 4. Tenders, accompanied by a Deposit of 40s. in money, must be sent in endorsed, "Tender for Trees," addressed to the Vestry Clerk, not later than 5 o'clock on Tuesday, December 8, 1891. The Vestry do not bind themselves to accept the lowest, or any Tender.

A. MILLAR, Vestry Clerk.
Vestry Hall, 81, Borough Road, S.E., November 18, 1891.

FRUIT TREES—FRUIT TREES.

JOHN PERKINS AND SON offer the following STANDARD APPLES, PEARS, PLUMS, CHERRIES, and DAMSONS, 5 to 6 feet stems, suitable for Orchards; very cheap by the dozen, hundred, or thousand. All the most popular sorts in cultivation. Special offers on application.
52, MARKET SQUARE, NORTHAMPTON.
Nurseries, Billing Road.

ANTHONY WATERER invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted, the girth of the stem is taken at 4 feet from the ground.

- ACACIA BESSONIANA, 10 to 14 feet, girth 3 to 4 inches.
- ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
- " WIERII LACINIATUM, 10 to 14 feet, girth 3 to 5 in.
- " NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
- " REITENBACHII, 12 to 14 feet, girth 4 to 5 inches.
- " SCHWEDLERII, 12 to 18 feet, girth 4 to 8 inches.
- " WORLEYII, 12 to 14 feet, girth 3 to 6 inches.
- ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
- BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
- BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
- CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 4 to 7 inches.
- CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
- " Double White, 14 to 16 feet, girth 6 to 8 inches.
- " Scarlet, 12 to 18 feet, girth 4 to 10 inches.
- " Spanish, 12 to 14 feet, girth 4 to 5 inches.
- ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
- " Gaerney, 16 to 18 feet, girth 7 to 9 inches.
- LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
- " EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
- " Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.
- LIQUIDAMBAR, 6 to 10 feet.
- MAPLE, Norway, 12 to 16 feet.
- OAK, English, 12 to 14 feet, girth 4 to 5 inches.
- " Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
- PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
- POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
- SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
- " Purple, 14 to 16 feet, girth 6 to 7 inches.
- THORNS, Double Pink, 8 to 10 feet.
- " Scarlet, 8 to 10 feet.
- " White, 8 to 10 feet.
- TULIP TREES, 8 to 10 feet.
- WALNUT, Common, 10 to 12 feet.

WEEPING TREES.

- BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
 - " Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
 - BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
 - " Cat-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
 - ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
 - LARCH, Weeping, Pyramids, 8 to 10 feet.
 - POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
- Knap Hill Nursery, Woking, Surrey.

SPECIAL OFFER OF FRUIT TREES, &c.
TO GENTLEMEN PLANTING.

PYRAMID APPLES, PEARS, PLUMS, and CHERRIES. Extra-size Fruiting.

DWARF and HORIZONTAL-TRAINED APPLES, PEARS, PLUMS, and CHERRIES.

STANDARD and DWARF-TRAINED PEACHES and NECTARINES.

SEAKALE and RHUBARB for Forcing.

STRAWBERRIES in Pots, in Great Variety.

Also a large Assortment of well-grown Nursery Stock. CATALOGUES and prices on application to—

ROBERT NEAL,
Nurseryman and Seed-man,
Trinity Road, Wandsworth Common, S.W.

Trade Offer of Large Palms.

W. ICETON has a large Stock of the leading kinds of Decorative PALMS, from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracenas, Bamboos, & Foliage Plants. Lowest Prices quoted on application.
W. ICETON, Putney, S.W.

Many Acres of Lilies of the Valley!

JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

FOR ORCHIDS, and GARDENERS
to Grow Them, apply to SANDERS, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

Fruit Trees a Specialty.

APPLES, PEARS, PLUMS, STRAW-BERRIES, and all sorts of Small and Hardy Fruits grown in immense quantities. The best of the Old and New Varieties either to Grow for Market or Private Consumption. Special quotations for quantities. Descriptive CATALOGUE and GUIDE, the most complete issued, 6d. Ordinary LIST free. JOHN WATKINS, Pomonca Farm Nurseries, Withington, Hereford.

To those about to Plant.

A DESCRIPTIVE CATALOGUE of Roses, Fruit Trees, Conifers, Evergreen and Flowering Shrubs, Rhododendrons, Ornamental and Forest Trees, Clematis, and other Climbing Plants, in large variety, sent free on application to—
GEO. JACKMAN AND SON, Woking Nursery, Woking. Established 1810. Area, 150 Acres.

BARR'S BULBS, WINTER and SPRING.

The following Catalogues free on application:—
Catalogue of beautiful flowering Bulbs for all seasons.
Catalogue of all the best and most beautiful Daffodils (Narcissus).
Catalogue of all the best and most beautiful Hardy Perennials.
List of rare and beautiful Croci and Meadow Saffrons.
COLLECTIONS OF BULBS, 10s. 6d., 21s., 42s., 63s., & upwards.
COLLECTIONS OF DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s.
Hyacinths, Tulips, Crocus, Daffodils, Iris, Peonies, Lilies, &c.
BARR AND SON, 12, King Street, Covent Garden, London, W.C.

COVERT FOR GAME.

- LAURELS, Common, 1½ to 2 feet, 70s. per 1000.
- " Bushy, 2 to 3 feet, 100s. per 1000.
- " Very bushy, 3 to 4 feet, 15s. per 100.
- PRIVET, Evergreen, 2 to 3 feet, 35s. per 1000.
- SPRUCE FIRS, fine, 2½ to 3½ feet, 100s. per 1000.
- BEECH, extra strong, 3 to 4 feet, 40s. per 1000.
- QUICKS, extra strong, 2 to 3 feet, 21s. per 1000.
- " thrice transpl., 3 to 4 feet, 30s. per 1000.
- LARCH and SCOTCH FIRS and other trees equally cheap.
Catalogues and Samples free on application.
R. TUCKER, Nurseries, Faringdon, Berks.

Roots, &c., for Early Forcing.—Carriage Paid.

DICKSON AND ROBINSON
Offer the undermentioned, of Finest Quality, and extra Strong, for Early Forcing, viz:—

- LILY OF THE VALLEY, Berlin Crowns, 44s. and 48s. per 1000; 5s. and 5s. 6d. per 100.
- LILY OF THE VALLEY, Dutch and German Clumps, 10s. and 12s. per dozen.
- SPIREJA JAPONICA, Imported Clumps, 30s. and 35s. per 100; 4s. and 5s. per dozen.
- DIELYTRA SPECTABILIS, Imported, 4s. and 5s. per dozen.
- AZALEA MOLLIS, well-budded, 21s., 24s., and 30s. per dozen; 2s. to 3s. each.
- GUELDER ROSE, well-budded, 30s. per dozen; 2s. 6d. and 3s. each.
- LILACS, CHRISTMAS ROSES, HYDRANGEAS, DEUTZIAs, &c.
Seed Warehouse, 12, Old Millgate, Manchester.

CLEARANCE SALE OF PALMS,
DRACENAS, &c.

Strong Small Palms, averaging 10 to 12 inches high, of SEAFORTHIA ELEGANS, LATANIA BORBONICA, ARECA SAPIDA, CORYPHIA AUSTRALIS, KENTIA BELMORIANA, K. FOSTERIANA, and DRACENA INDIVISA, sample 2 of each, 14 plants in all, 5s.; 1 of each, 7 in all, 3s. Package Free, and Carriage Paid for Cash with Order.

- * LATANIA BORBONICA, 4 feet high, with pot averaging 10 fine leaves, 15s. each.
 - * CHAMEROPS EXCELSA, 5 feet high, with pot averaging 12 fine leaves, 30s. each.
 - * Ditto, ditto, 4 feet high, with pot averaging 12 fine leaves, 21s. each.
 - * DRACENA CANIFOLIA, 5 to 6 feet high, 21s. each.
 - * Ditto, ditto, 4 feet high, 15s. each.
 - * PHENIX TENUIS, 3 feet high, 6s. each.
 - * Ditto, ditto, 2 feet high, 18s. per dozen.
 - * DRACENA INDIVISA, 3 feet 6 inches high, 5s. each.
 - * Ditto, KUHRA, 2 feet high, 18s. per dozen.
 - * Ditto, CONGESTA, 2 feet high, 18s. per dozen.
 - * SEAFORTHIA ELEGANS, in 60's, fit for 48's, strong, 6s. doz. Price per hundred on application.
- Those marked * are Packed Free, but NOT Carriage Paid.
W. OWEN, 105, Stamford Hill, N.

WINTER FLOWERING PLANTS. { **HEATHS, EPACRIS, LILACS, GENISTAS, CYCLAMENS, PRIMULAS, ROUVARDIAS, CAMELLIAS, AZALEAS, &c.**
Splendidly set for Bloom.
PRICES ON APPLICATION.

DICKSONS NURSERIES CHESTER
(LIMITED) (400 Acres)

THE CHEAPEST OFFER EVER MADE.

- 40,000 ASH, transplanted, 9 to 13 inches, 9s. per 1000.
- 40,000 ASH, transplanted, 12 to 18 inches, 11s. per 1000.
- 50,000 ASH, transplanted, 1½ to 2 feet, 13s. 6d. per 1000.
- 100,000 ASH, transplanted, 2 to 3 feet, 18s. per 1000.
- 100,000 ASH, transplanted, 3 to 4 feet, 23s. per 1000.
- 50,000 ASH, transplanted, 4 to 5 feet, 27s. per 1000.

A Sample 100 can be had at prices quoted.

ALL FINELY-ROOTED and WELL-GROWN STUFF.

EDWARD WISEMAN, Nurseryman,
ELGIN, SCOTLAND.

EXHIBITIONS.

SOUTH SHIELDS CHRYSANTHEMUM
and WINTER FLOWER SHOW.

EXHIBITION will be held on WEDNESDAY and THURSDAY, November 25 and 26, in the Royal Assembly Hall, South Shields. PRIZE MONEY over £100; £10 for 36 blooms.
BERNARD COWAN, Hon. Secretary.
Harton, South Shields.
N.B.—The Hall illuminated by electricity.
Entries close on the 20th inst.

Bulbs direct from the Capetown Botanic Gardens.

TRADE ORDERS are now being received for this Season's growth of CAPE BULBS, deliverable Jan. to Feb., 1892.—HENRY J. CHALWYN, Botanic Gardens, Capetown

SEED BUYERS! IMPORTANT.—A large

quantity of TELEGRAPH CUCUMBER SEED for Sale. No reasonable offer refused.
HENRY SMITH, Cucumber Grower, Radcliffe-on-Trent, Notts.

FOR SALE.—SMALL-LEAF MYRTLE

good bushy plants, in 48's. Price on application.
C. COOK, Sydney Villa, Northcote Road, St. Margaret's Twickenham.

OLD CRIMSON CLOVE.—Strong healthy

LAYERS, well-rooted, 14s. per 100, cash; or EXCHANGE for VIOLETS, The Czar.
GREAVES AND HAYNES, Florists, Beeston, Notts.

FOR SALE.—New hybrid CYPRIPEDIUM

ENFIELDENSE, described in the *Gardeners' Chronicle*, November 7.
E. AYLING, Forty Hill, Enfield, Middlesex.

Limes!—Limes!!—Limes!!!

BIRD and VALLANCE, American Nurseries, Downham Market, can offer LIMES in good stuff, at the following low prices:—4 to 6 feet, 4s. per dozen; 6 to 8 feet, 7s. 6d. per dozen; 8 to 12 feet, 12s. per dozen. Cheaper per 100.

CHRYSANTHEMUMS, true to name. This

collection includes the very best varieties only. Several silver cups and hundreds of 1st prizes were taken by my customers last year. For price of cuttings and plants see CATALOGUE of W. ETHERINGTON, Swanscombe, Kent.

5000 just to hand. A splendid lot of SPIRÆA

JAPONICA, true imported clumps. Sample six clumps, 1s. or 9s. per 100, to clear.
W. KNIGHT, 7, Prince's Terrace, Holdenhurst Road, Bournemouth.

10,000 EUNYMIUS (Green), bushy, well-

grown, 18 inches to 30 inches, 6s. to 15s. per dozen. Less by the 1000. Cash with Order.
J. J. CLARK, Goldstone, West Brighton.

TELEGRAPH CUCUMBER, TELEGRAPH.

The OLD TRUE Stock of Kollison
A Prodigious cropper, and unsurpassed for Market Work. Seed, just harvested, 1s. per packet; 25 Seeds, 1s. 6d.; 100 Seeds, 4s. Post free, Cash with Order. Price per ounce on application.—C. A. LE TALL & CO., Seedsmen, &c., The Approach, Charing Cross, W.C.

FOR SALE, 10,000 of Bishop's Perfection,

Northumberland Fillbasket RASPBERRY CANES, true to name; the best Market variety and heaviest cropper in existence. Price, 6s. per 100; 50s. per 1000.—Apply, W. BISHOP, Medical Botanist, 33, Paragon Street; also Mount Pleasant, Skidby, Hull, Yorks.

CUPRESSUS LAWSONIANA, 4 to 5 feet,

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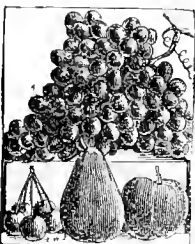
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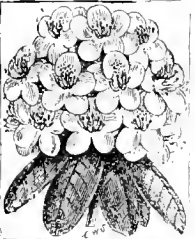


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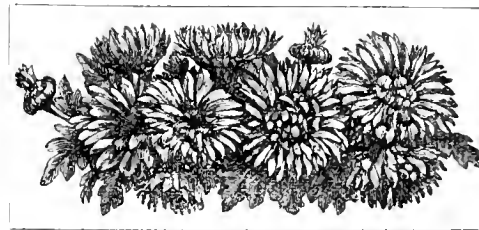
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THE Gardeners' Chronicle.

SATURDAY, NOVEMBER 21, 1891.

TOWN FOGS, AND THEIR EFFECTS.

Now that the fog season is approaching, we call attention to an important lecture on the subject by Dr. W. J. Russell, F.R.S., reported in full in *Nature*, November 5, 1891, and from which we extract a few salient points of interest to our readers.

The deposit analysed occurred during the last fortnight in February of this year (1891), and was obtained from the previously-washed glass roofs of the plant-houses at Kew and of some Orchid-houses at Chelsea. At Kew, 20 square yards of roof yielded 30 grammes of deposit. At Chelsea, the same area gave 40 grammes, which represents 22 lb. to the acre, or 6 tons to the square mile, and the composition of these deposits is as follows:—

Composition.	Chelsea. Per cent.	Kew. Per cent.
Carbon	39.0	42.5
Hydrocarbons	12.3	} 4.8
Organic bases (pyridines, &c.)	2.0	
Sulphuric acid	4.3	4.0
Hydrochloric acid	1.4	0.8
Ammonia	1.4	1.1
Metallic iron and magnetic oxide of iron	2.6	} 41.5
Mineral matter (chiefly silica and ferric oxide)	31.2	
Water, not determined (say difference)	5.8	5.3
	100.0	100.0

These analyses give, for the first time, a definite account of the composition of fog-deposit. Soot and dust are by far its principal constituents, rendered sticky and coherent by hydrocarbons. Mr. Thiselton Dyer says of the deposit, "It was like a brown paint, it would not wash off with water, and could only be scraped off with a knife. It thickly coated all the leaves of the evergreens, and upon what have not yet been shed it still remains." In the above analysis it is curious to note the large amount of metallic iron and magnetic oxide of iron.

We also learn from the Manchester Committee some interesting facts with regard to fog-deposits which occurred last winter in their city. This deposit, which was collected from *Aucuba* leaves, contained as much as 6 to 9 per cent. of sulphuric acid, and 5 to 7 per cent. of hydrochloric acid, mostly, of course, in a state of combination, but the deposit was, they say, "actually acid to the taste." Also that three days' fog deposited per square mile of surface, in by no means the worst part of Manchester, 1½ cwt. of sulphuric acid, and even as far out of the city as the Owens College, on the same area, over 1 cwt. of acid and 13 cwt. of blacks.

AMOUNT OF COAL CONSUMED.

A table shows an absolute increase, during the last fifteen years, of 2,000,000 tons of coal—that is half as much again is now burnt as was burnt in 1875. The coal consumed in London (that by gas companies deducted) amounted in 1889 to 6,390,875 tons.

Supposing only 1 per cent. of sulphur in this last yearly amount is converted into sulphuric acid (H_2SO_4), and passes into the air; this would give 195,720 tons of this acid.

FREQUENCY OF FOGS.

Between 1870 and 1875,	93 fogs occurred.
" 1875 and 1880,	119 " "
" 1880 and 1885,	131 " "
" 1885 and 1890,	156 " "

ATMOSPHERIC CONDITIONS.

The general atmospheric conditions which induce fogs are a still and moist air and a high barometer—a state of the air most usual under anti-cyclonic conditions. The immediate determining cause, however, of a fog is usually a sudden and considerable fall of temperature. Mr. Brodie also points out that last winter was a time of calms; the percentage of such days on the average for the last twenty years is 9.7, but last winter the number was 22. Emphatically, he says, it was an anti-cyclonic winter.

As to the influence of fogs on the death rate, Dr. Russell says it is beyond doubt that an atmosphere charged with soot, dust, and empyreumatic products is an unhealthy atmosphere to breathe; but the principal cause of the great increase of death when fogs occur is attributable rather to the sudden fall of temperature which usually accompanies fog, than to the fog itself.

ACTION ON PLANTS.

The deleterious action of town fogs on plants is more marked and more easy to investigate than its effect on animals. Nurserymen have long known from experience that a town fog will penetrate even their heated greenhouses, and with certainty will kill many of their plants, especially their Orchids, Tomatos, and, in fact, most tender and soft-wooded plants; but on this point Mr. Thibetson Dyer says in a letter to me: "With regard to plants under glass, the effect of fog is of two kinds: 1. By diminishing light; this checks transpiration. The plants are therefore in the condition of being over-watered. A well-known consequence of this is, to make them shed their leaves wholesale. Many valuable plants which ought to be well furnished with foliage become perfectly bare, and it is impossible ever again to recover them into slightly specimens. 2. The toxic influence of the fog is most striking. I attribute it in the main to sulphurous acid, though I cannot help suspecting that some hydrocarbon may also have something to do with it. The toxic effect varies from one plant to another, some are scarcely injured, others practically killed. If the visitation of last year is annually repeated, it must in time make all refined horticulture impossible in the vicinity of London." This fog action on plants is so clearly marked, and so deadly, that it has led the Horticultural Society, aided by a grant from the Royal Society, to undertake a scientific investigation of the matter. Plants are so much more easily dealt with than people, all circumstances of attack by fog, and its immediate results so much more easily noted and traced, that the investigation has already yielded important results, and we shall, I hope, hear from Professor F. Oliver—who is devoting himself specially to the investigation—some accounts

of his latest results. Marked difference between a town and country fog, is, that while country fog is harmless in a greenhouse, town fog produces most destructive results. The power of abstracting light depends principally upon the amount of coal products which the fog contains. Red rays can struggle through a fog absolutely impervious to the more refrangible ones. This opacity of town fog to light is one of its most serious and detrimental characters. Animals can no more thrive in semi-darkness than can plants, and, important as the red rays may be, still it is undoubtedly the blue rays which are most active in producing the principal chemical changes going on around us. It is not possible, I believe, for people to remain healthy where this source of chemical activity is cut off, or even seriously diminished. In addition to the loss of physical energy, mental depression is induced by absence of light.

Another action of light which is potent for good, is its destruction of many forms of bacteria. Professor Koch pointed out how his tubercle bacilli are killed by even a short exposure to sunlight.

DURATION OF SUNLIGHT.

Taking the totals of last year (1890), the hours of sunshine registered at Bunhill Row were 1158, at Greenwich, 1255; at Kew, 1405; at Apsley Guise, 1420; and at Eastbourne (one of the sunniest places in England), 1724. Comparing the amounts of sunshine at these places during November, December, January, and February, we find that at Bunhill Row there were 95.8, Greenwich, 150; Kew, 171.7; Apsley Guise, 205.9; and at Eastbourne, 268.3 hours of sunshine; that is, if Apsley Guise be taken as giving the normal amount, Bunhill Row received only half its due amount, and at Eastbourne there was nearly three times as much sunshine as in the City. Now on comparing the two other periods of four months which are comparatively free from fogs, the amount of sunshine is far more nearly the same at all stations.

Dates.	Bunhill Row.	Greenwich.	Kew.	Apsley Guise.	Eastbourne.
March till June ...	542.4	581.4	619.4	581.1	736.8
July till October ...	519.3	523.8	613.5	632.5	718.5

Mr. Raffles, during the winter of 1887-8 (which was remarkably free from fogs), found that looking south from Primrose Hill on 152 consecutive days, from November to March, only on 78 days could he see a quarter of a mile, and only on 83 days could he see the same distance in a south-westerly direction; this conveys a good idea of our London atmosphere. *W. Watson.*

(To be continued.)

NEW OR NOTEWORTHY PLANT.

ACAMPE MADAGASCARIENSIS, *n. sp.*:
AFFINIS *A. PAPILLOSA*, *Lindl.* (= *SACCOLABIO PAPILLOSO*, *Lindl.*)*

This is a curious little thing, of merely botanical interest—a Vanda-like plant, with thick leathery leaves, and a small flower-stalk of minute whitish

* *Acampe madagascariensis*, *n. sp.*: *Affinis A. papillosa*, *Lindl.* (= *Saccolabio papilloso*, *Lindl.*)—Sepalis oblongis lateralibus subfalcatis; petalis lateralibus linearibus angustioribus omnibus obtusissimis; labelli lobis lateralibus fere obsolete medio oblongo, margine nodulato basi callo v. linea transversa instructo disco verrucoso (nec papilloso); calcaris subcompresso oblongo obtuso $\frac{2}{3}$ ovarii aequante labello fere aequilongo intus piloso; gynoestemio brevissimo. anthera supra carinata, retinaculo lineari tenuissimo. Folia lorata crassissima, 3-4 poll. longa, $\frac{1}{2}$ poll. lata. Racemi brevissimi capitati, rhachis crassissima, bractee fere nulke, flores inter minimos generis, 3-4 lin. diametro, albidii, labellum roseolum.—Ex insula Madagascar importari jussit, Fr. Sander v. cl. Verulamensis. *Dr. F. Kranzlin.*

flowers, with a labellum of a faint rose-purple; that is all! notwithstanding, the plant is an interesting one. It connects the Indian species of *Acampe* with the newly-detected one in the south-eastern parts of Africa; it is the first *Acampe* known from Madagascar, and it shows that Indian types of Orchids also occur in Madagascar. There can be no doubt that it must be placed near *A. papillosa*, *Lindl.*, and *cephalotis*, *Lindl.*, with which it agrees in habit, and from which it differs only by some peculiarities of the very small flower. The author is indebted for the material to Messrs. F. Sander & Co., St. Albans. *Dr. F. Kranzlin, Berlin.*

ALDENHAM HOUSE, ELSTREE.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE fine estate of Henry Hucks Gibbs, Esq., M.P., on which over 100 acres are devoted to gardens and garden-kept pleasure-grounds, gives one of the best examples of good gardening in the county of Hertfordshire. Rich in noble old Oaks and Elms, and naturally beautiful, its beauties have been developed and increased to a great extent by the landscape work carried on of late years by Mr. Edwin Beckett, the gardener at Aldenham House. The latest, and by far the most marked improvement is the winding stretch of ornamental water running through the grounds as far as the eye can reach, its sloping grassy banks beautified by some of Pulham's best work in rockery, and which by its unartificial style and arrangement, converts the whole scene into such as one might witness in some lonely rocky glen and far away from the haunts of busy mankind. Over the upper part of the ornamental water a fine rustic bridge is thrown, capable of bearing heavy traffic, its base on either side being of massive rocks, among which are planted rare shrubs and flowering plants, the whole presenting a fine picture against the background of stately trees.

Further on another fine view is obtained, embracing a rocky bridge with a waterfall above it, and below the bridge after meandering through the tortuous rocky banks, it forms another waterfall into the lake below, a splendid view of two of the reaches being obtained from the stepping-stones which cross the water above the lake. From this point we are attracted by a brilliant mass of bright scarlet falling over the rocks below even to the water. It is produced by the scarlet climbing *Tropæolum* which here trails over, and forms an admirable and striking plant for summer effect. Still further away stretches this fine water scene among the rocky banks, until it is lost to the eye in the plantation of graceful Birch and other trees, and fine Conifera. Glancing along the more salient features in the plantings which cap and back the rocks, we observe that the masses of scarlet *Kniphofia* are very telling, and in one place the golden variegated *Privet*, and in another a mass of golden *Elder*, are bright and conspicuous objects; and here and there clumps of *Bamboos*, of *Gunnera manicata*, &c., are effectively arranged, while the planting of the lesser alpine and herbaceous perennials and Ferns have been well done. Above the banks irregular groups of *Thuias*, *Cupressus*, *Golden Yews*, and other ornamental trees have been planted. Some of the *Thuia gigantea*, which were moved from another part of the grounds, are over 30 feet in height, and their safe removal reflects great credit on Mr. Beckett, and speaks well of the efficacy of the lifting truck, which he has designed and had constructed for the purpose.

THE FLOWER GARDEN.

The entrance gates and new gardens beside them, arranged on the piece acquired by the extension on that side, form another great improvement quite worthy of the immense amount of labour bestowed on the work. From here the noble mansion appears at the end of the avenue of Oaks and Elms, and away to the right runs the terrace, with its vases of bright flowers at not too frequent intervals, and fine beds of flowers and shrubs. Close beside the gates are banks of *Privet* and other shrubs which it is

intended to always keep low, and along the terrace the large masses of mixed sunflowers edged with Mignonette, are very effective, and the great beds of *Lilium auratum* with an undergrowth of *Andromeda floribunda* edged with Heaths, are a grand sight. Permanent masses, too, of *Cotoneaster microphylla* edged with *Euonymus radicans*, and of other dwarf shrubs which retain their leaves in winter, have a telling effect. Following on we come to the drive planted with neat Conifers and shrubs, and about a mile in length, past the greater lake, and in its course disclosing many fine views.

At the south-east front of the mansion, which is on that side partially covered with *Crataegus pyracantha*, are the arrangements of bedding plants. The design composed of four oblong-square carpet beds alternating with three circular ones of the old white corolla *Fuchsia Madame Cornellisen*, makes a very

drives planted irregularly in clumps with *Hydrangea paniculata* now in full bloom; *Rosa rugosa*, and its white variety, with flowers, and their no less handsome orange-scarlet fruits; *Rubus laciniatus* which, in addition to being of ornamental foliage, supplies quantities of Blackberries; *Rhus cotinus*, a very effective shrub when covered with its white beards; clumps of golden Yews and of various Conifers, and shrubs of neat growth, and *Rhododendrons*, *Azaleas*, *Kalmias*, &c.

THE WALLED-IN GARDEN.

Both within and without the walls the fine crops of fruits and vegetables are well up to the usual standard at Aldenham. Within and without the walls, too, on the borders running around, and at the sides of the walks which meet at the ornamental fountain in the centre, are planted showy

walls, and forming one of the prettiest objects in the garden, is a mass of the Scarlet Flame *Nasturtium* (*Tropaeolum speciosum*), which for a long time refused to grow kindly here, but is now established, and not likely to give trouble again.

THE GLASS-HOUSES.

Commencing at one corner of the wall, and leaning to it, is a long range in several divisions, enclosing Peaches, Nectarines, &c., all well cropped; then come several large vineries, in which the bunches of the Muscat of Alexandria are large and well finished, while all the others are good. In one of the vineries the basement is filled with *Celosias* (Prince of Wales Feather) of a fine strain, worked up by Mr. Beckett, and which for elegance of form and brightness of colour are far beyond the average.

Fig-houses and Pine-pits follow, and, passing through the stove-houses, in which are some fruiting Bananas, some very fine *Eucharis*, *Stephanotis*, *Crotons*, and other plants fit for exhibition, we come to two houses chiefly containing healthy specimens of Orchids, whose blooms are arranged among plants in flower of white and red *Lilium speciosum*. Then follows a neat span-roofed range of glass in the first division, of which are *Dracænas* and other plants suitable for table decoration, perfectly grown; the next has a fine crop of Melons, with *Anthuriums* beneath, and in the third beautifully coloured *Crotons* and other decorative plants; and everywhere that perfect neatness and good culture which characterises the Aldenham House gardens is evident. J. O'B.

MR. OWEN THOMAS.

We are pleased to lay before our readers a portrait of Mr. Owen Thomas, who has recently been appointed Superintendent of the Royal Gardens, Frogmore, in place of Mr. Jones, resigned. Mr. Thomas's career at Drayton Manor, and afterwards at Chatsworth, is too well known to need more than reference. We wish him all success in the very arduous and responsible position he now holds, and trust that his duties at Frogmore will not prevent him from taking part in our metropolitan meetings.

BORDEAUX MIXTURE AND THE POTATO DISEASE.

MESSRS. BROWNS' EXPERIMENTS IN TYRONE.—Now that the results of the copper treatment of the Potato disease are beginning to appear, we all feel anxious to learn what has been the general outcome of them, especially from the practical standpoint of whether it will pay. At the early part of the present year I was in communication with Mr. R. Brown, of Donaghmore, Tyrone, on this subject, and am pleased to be able to report to the readers of the *Gardeners' Chronicle* the results of these experiments.

Although the tabulated statements do not cover so many folio sheets as do those of a recent experiment, which has been made public, yet they are sufficiently voluminous for our purpose. Nothing wearies the eye of the ordinary reader so much as page after page of statistics, so we will endeavour not to disgust any one who has sufficient interest in the subject to peruse the present communication. These experiments were made upon Champion Potatoes grown upon two different farms. The treated and untreated plots were close together, and identical as to seed, manure, cultivation, and so forth. I am given to understand by a gentleman who visited these experiments in the month of August last, that the plots selected were near the roadside, so that the effect might be the more easily visible to the passers-by.

We will take them in the order of time at which the dressing was first applied. The mixture was in all cases the same, viz., per acre:—32 lb. copper sulphate, 16 lb. lime, 160 gallons water. It was applied by an *Eclair Knapsack Pump* (price 35s.),



THE QUEEN'S GARDENER, MR. OWEN THOMAS.

fine display. The carpet beds, which are of elaborate design, are chiefly of the different coloured *Alternantheras*, and they are very bright; and the beds of *Fuchsias* are literally masses of bloom. Another set has the beds filled in with *Pelargoniums* and other flowering plants, the two most effective being those planted with the old *Calceolaria amplexicaulis*.

Passing the long stretches of covered walks on which the *Clematis* and other climbers mingle their flowers, we come to the Rose garden, enclosed by clipped Yew hedges, and so on to the subtropical garden, which, although good, is, on account of the wet season, not up to the mark of previous years. Bearing away to the left are the winding walks among rustic rockery, planted with Ferns, and a most varied and complete collection of Ivies; and running out into the pleasure grounds are long

herbaceous plants, among which the tall *Phloxes* are especially bright and profusely flowered here, as in most other places this season, during which they have not suffered from heat or drought as they do some years. Two large beds of that fragrant and profuse flowering white *Carnation Gloire de Nancy*, well display its sterling merits as a florist's flower. Here, too, the different varieties of perennial *Helianthus* have a fine effect, and the *Asters*, *Stocks*, and other annuals make a great show. One large border is planted with *Dahlias*, of which only the *Pompons* are grown, and beside the border, under the glass houses on one side, are the large army of *Chrysanthemums* grown up to the highest state of perfection, and with which Mr. Beckett will doubtless wage his usual successful warfare from the exhibition stands at the most important *Chrysanthemum* shows. On one of the

and the cost was about 10s. per acre, that is, 6s. for the Bordeaux Mixture, and 4s. for labour. Although in some cases heavy rain fell immediately after the dressing was applied, this did not apparently have any effect upon the result. The leaves of the untreated plots were destroyed by August 21, but the foliage of the dressed plots was quite green for nearly a month longer.

Plot No. 1.—Treated July 21, 1891.

	Ton.	Cwt.	Qr.	Lb.
Large tubers	19	4	1	4
Small tubers	2	5	2	24

12 10 0 0

Untreated.

Large tubers	7	10	0	0
Small tubers	2	15	2	24

10 5 2 24

Increase by treatment, 2 tons 4 cwt. 1 qr. 4 lb.

Plot No. 2.—Treated July 21, 1891.

	Ton.	Cwt.	Qr.	Lb.
Large tubers	8	14	1	4
Small tubers	2	15	2	24

11 0 0 0

Untreated.

Large tubers	6	17	0	16
Small tubers	2	15	2	24

9 12 3 12

Increase by treatment, 1 ton 7 cwt. 0 qr. 16 lb.

Plot No. 3.—Treated July 30, 1891.

	Ton.	Cwt.	Qr.	Lb.
Large tubers	8	12	3	12
Small tubers	3	7	0	16

12 0 0 0

Untreated.

Large tubers	7	14	1	14
Small tubers	2	12	3	12

10 7 0 26

Increase by treatment, 1 ton 12 cwt. 3 qr. 12 lb.

Plot No. 4.—Treated July 30, 1891.

	Ton.	Cwt.	Qr.	Lb.
Large tubers	8	17	0	16
Small tubers	3	5	2	24

12 2 3 12

Untreated.

Large tubers	7	18	2	8
Small tubers	2	12	3	12

10 11 1 20

Increase by treatment, 1 ton 11 cwt. 1 qr. 20 lb.

Plot No. 5.—Treated August 11, 1891.

	Ton.	Cwt.	Qr.	Lb.
Large tubers	10	7	0	16
Small tubers	1	15	2	24

12 2 3 12

Untreated.

Large tubers	9	4	1	4
Small tubers	1	5	2	21

10 10 0 0

Increase by treatment, 1 ton 12 cwt. 3 qr. 12 lb.

SUMMARY—PER ACRE.

Treated with Bordeaux Mixture.

	Ton.	Cwt.	Qr.	Lb.
Large Tubers	9	5	0	16
Small Tubers	2	14	1	0

11 19 1 16

Untreated.

Large Tubers	7	17	0	16
Small Tubers	2	8	2	8

10 5 2 24

Increase by treatment 1 ton 13 cwt. 2 qr. 20 lb., of which 1 ton 8 cwt. were large tubers.

Another experiment was made on the field of a small farmer; the crop here had been planted late, and but scantily manured. The result per acre was:—

	Ton.	Cwt.	Qr.	Lb.
Treated	7	3	0	0
Untreated	5	3	0	0

Increase by Treatment ... 2 0 0 0

Thus the increase by treating with Bordeaux Mixture was nearly 40 per cent.

The blue tint of the hydrated oxide of copper was quite visible upon the treated plots some days after the Bordeaux Mixture had been applied, and the difference in the amount of foliage was very

soon observable, and, of course, became more and more apparent as time went on. Whether at the present price of Potatoes a gain of a ton and a half in the one case, and of two tons per acre in the other, is worth the expenditure of 10s., I will leave the practical men to say. *Charles B. Plowright, M.D., King's Lynn.*

THE SEED TRADE.

THE SEASON'S PROSPECTS.—The prospects of the seed trade have, in the face of a season so hostile to the harvesting of seeds, a more than ordinary interest for all connected with the garden. Reports from the Pea districts in the Netherlands affirm that the crop is very good, though the early varieties suffered much from the rain. In our own country the yield is short, and the samples very much injured by continuous wet; the wrinkled varieties, especially, will require that nearly one-half of discoloured and imperfect seeds be picked out, in order to make the samples fairly good, and the choicer and more valuable varieties appear to be the worst samples.

Broad Beans are by no means plentiful, and good samples are scarce. On the continent, the report is that they are backward, owing to unfavourable weather, but otherwise good.

Dwarf French Beans are very late in being harvested, and the earliest varieties are expected to show the best samples. English Scarlet Runners, being extremely late, must show very bad samples indeed. In the Netherlands, Cabbage, Savoy, Swedes, and Turnips suffered severely from the effects of the extraordinary severe winter, but the plants which escaped produced fairly well. The yield of English Cabbage seed is very short, and the seeds much shrivelled, and the pods did not yield nearly what was expected. English Turnips show a fair crop; Swedes very short, and samples indifferent.

Of Mangel Wurzel seed there is very little indeed saved in this country, and continental crops are certain to be thin.

The harvest of foreign Onion seed appears to be better than at home, as it is believed the English crop is small, and the quality not good; and, therefore, prices are likely to rule high.

English-grown Carrot is reported to be nearly a total failure, and prices will, no doubt, be higher than for years past. Of Altrincham and Surrey, two popular long varieties, it is said there is scarcely any to be got. The continental crop, it is expected, will be a fairly good yield.

Radish is not yet threshed, but it is fully expected the yield will be a poor one, and this appears to be true of the foreign harvests also.

Spinach is fairly good at home, and certainly no better, even if as good abroad.

Leek seed is very scarce at home. Mustard plentiful, but Cress not so good.

The foreign crop of Cauliflower will be a small one, and there is but a poor yield in this country. The continental Parsley crop is near a failure.

On the whole, the outlook is by no means cheering, and there is reason to fear many small growers of seeds will feel the effects of short and unsatisfactory crops keenly. *Pisum.*

CHRYSANTHEMUM SPORTS.

[A paper read at the Conference of the National Chrysanthemum Society, November 10.]

(Concluded from p. 576.)

ALTHOUGH we have no direct control over climatal conditions, we can do what we like with the soil. We can impoverish it or enrich it, or supply any special ingredients we choose. Such undoubtedly affects the colouring of flowers, and apparently the power of sporting as well. To give one or two examples:—Mr. Hovey said,* that striped Dahlias will be best kept clean by planting them in a poor soil, while a rich soil invariably runs them. I believe this treatment is well known to florists, and generally

adopted for other plants as well. As another result of impoverishment, Mr. Lowe describes a number of sports of Chrysanthemum, as having been, as he surmises, actually caused by it.* "Two years ago I treated the plants badly; they were never potted off, and took care of themselves as best they could in an orchard; they never bloomed that year, and were all but killed. I cannot help thinking that this has been the cause of many of the sports."

A hint from Mr. Burbidge† corroborates Mr. Hovey's remarks on Dahlias, when writing about the fixation of sports:—"It is advisable to grow cuttings of sports in such a way as to ensure the full development of all the flower-buds they form . . . and so prove them to the core, as sports often revert to the parent type. Now to do this, it is advisable to grow them in a poor soil, without stopping . . . and to take care to give them no more pot-room than is needful for fair growth, but at the same time taking care not to starve them out of constitution."

I quote these few cases of the effects of a poor soil to show that growers have found out by experience, if not by experiment, at least something towards the production and fixation of sports. On the other hand, nutrition enhances the intensity of colorisation. A friend told me that he watered white-flowered Balsams with a solution of ammonia; by this means the plants bore red flowers. Mr. G. F. Wilson found that he could intensify the blue colour of alpine Gentians, growing, I believe, in a peaty soil at Wisley, by supplying them with lime. Chloride of lime has been found to cause a whole-coloured Camellia to become striped, &c. Mr. Claydon also found that Weigela changed from white to rosy-pink, according to the nature of the soil‡ These few facts are suggestive of experimentation, as the number of earths and salts, &c., which might be tried are innumerable. And since ingredients of the soil is the only one of all the circumstances which conspire to make up the plant's environment which is really in the power of the grower, it is clear that it is in this direction that experiments should be made.

Besides the colour, the form of the flower may be more or less completely altered in the sport. For example, Mr. Maries of Lytham, met with a case in which a sport appeared on Source d'Or, half the flower-head consisting of spreading, flat, canary-yellow coloured ray florets, while the other half of the flower-head was composed of recurved dark golden-bronze florets with revolute edges.§ As another illustration, Mr. Molyneux speaks of George Glenny (itself a yellow sport from the white incurved Mrs. Rundle), sporting to a true reflexed type of the same colour, in the garden of Mr. Horril at Havant. This variety is known as Mrs. Horril. Again, a true Anemone-sport occurred from the reflexed variety King of Crimson, and called Mrs. R. A. Mudie. Mr. Gallier of Edghaston, records how "a completely tasselled Japanese variety with pale pink or flesh-coloured florets, which were long, narrow and very full, arose as a sport from the fine incurved show pink variety, Miss Mary Morgan."¶

Lastly, Mr. Fortune remarked, "There is a curious circumstance about these plants which I must not omit to mention. Of course there were many varieties that I did not succeed in introducing; but, strange to say, many of these varieties were raised afterwards by Mr. Salter, of Hammersmith, from those I had introduced. An old lady, who lived near me in Kanagana, used to point to a number of varieties in her garden, and say that they all came from one and the same plant. I had the experience of Mr. Salter, and knew this was not unlikely. I think she was rather surprised when I said I fully believed her."¶¶

Similar experiences have been recorded in France. Thus M. Carrière mentions how a variety called

* *Gardeners' Chronicle*, Jan. 5, 1878, p. 18.

† *The Chrysanthemum*, p. 46.

‡ *Gard. Chron.*, Nov. 23, 1889, p. 599; Dec. 6, 1890, p. 668.

§ *Op. cit.*

¶ *Gardeners' Chronicle*, December 25, 1880, p. 819.

¶¶ *Gardeners' Chronicle*, January 17, 1880, p. 73.

* *Magazine of Horticulture* (quoted in *Gardeners' Chronicle*, 1812, p. 8).

Sophie bore flowers which were flat, having the petals narrow and imbricated, as well as flowers which were rounded; the petals being large and but little compact. As another instance, that author remarks that the variety Argentine, which is a Pompon, gave rise to a more vigorous branch, which bore large flowers, like the ordinary large-flowered *Chrysanthemum*. This may, therefore, have been a case of dissociation, the form Argentine having probably been a descendant from a cross between some form of *C. indicum* and *C. sinense*.*

This property, which might be described as the storage of forms and colours, strikes one as not only very remarkable, but practically suggestive. It seems as if a plant having been subjected to some new conditions, sports. The sport is propagated, and retains the character peculiar to the parent "in the blood," which enables it to revert. The sport itself sports again, and the latter now contains two forms in its constitution. It may sport again and so on, perhaps any number of times, and yet probably retain all the preceding sports latent in its constitution. Now, as *Chrysanthemum*s imported into this country have been grown from time immemorial in China and Japan, every variety may now be, for all we know, a sort of *mutum in parvo*, and the oftener one alters the conditions of the environment of those which have proved themselves to be most sportive, such as the so-called "families" of Queen Victoria, Princess of Wales, Duchess of Teck, &c., so much the more likely, as it seems to me, will fresh sports be produced.

Hence, it would seem from a study of sports, that the *Chrysanthemum* contains two means at its disposal. One is a force which causes the sport to reproduce an ancestral form which had existed before; a second, when, by a new combination of its internal forces, it produces an entirely new and original colour or form altogether. We cannot tell to which class a sport may be referred, unless we possessed every sport that ever existed, for comparison. But that no new sport can arise without some alteration in the surroundings, as ingredients in the soil or climate, I think all evidence concerning plant-life tends to show.

I do not mean to imply that the sport need immediately follow some alteration; for if we regard the formation of flowers as the result of forces, we know that forces may accumulate, lie dormant, or remain potential till circumstances occur which, so to say, liberate them. So that a new feature may take generations, for all we know, before it can make itself apparent; or an old character may lie dormant for ages.

Hence, to produce sports, the more varied the surroundings can be made; so, I believe, is the greater chance of sporting to be induced.

I have said nothing about intercrossing, this is too obvious a means of introducing changes in the offspring, but it stands altogether outside the limits of our subject, for sports are, strictly speaking, limited to "bud-variations," which appear on an individual during the course of its growth, and not in the seedling.

Consequently, I need not detain you with any remarks upon it; merely stating the two well-known laws of such propagation, viz., cross for variation, and self-fertilise for fixation.

Now let us examine the structure of the flower of the *Chrysanthemum* itself, and see how variations arise from it. Florists recognise several distinct forms. Starting from the original "single," or wild form, we have the ray and the disk florets, like a Daisy. The first change is the so-called "doubling." In this the disk florets become very similar to the ray. Now follow various details. If we examine a ray floret, we find it has a short tube, with a flattened limb of three petals only. If the tube is elongated, with little or no limb, the quilled form results. If the limb is enlarged, widened, and the tube is short, we get the recurved and the incurved forms, according as the flat piece bends outwards or

inwards. If the limb is very narrow and long, the Japanese actiniform varieties result.

Returning to the wild type we start afresh, and simply enlarge the disk florets. We thus get the Anemone form. If the ray becomes tubular like the disk, but enlarged, the number of the lobes to the corolla increasing, as in the Cornflower, the Dragon's-mouth variety is secured. If, however, we ask what causes all these differences to arise respectively, at present there is no reply, and, therefore, we do not know what steps to take to induce them to form respectively, until Nature herself has supplied the first indication of a change.

The first thing to do, if we want to discover a cause, is to look out for coincidences. If a sport appear, take note, and record in your note-book anything and everything you can observe as to the conditions surrounding that plant; find out its ancestry. It would seem desirable to note also the climatic conditions at the time, as sports of a like kind in plants, as we have seen, often appear simultaneously both in different places of the same county or counties, and also in different seasons.

It is only by accumulating coincidences that we can arrive at the first suspicion of a cause. When we think we may have discovered that a certain result seems to occur often or generally under certain particular circumstances; then is the time for experiments, to try and induce the same result to occur by artificially supplying those circumstances.

Practical men are often inclined to look suspiciously on scientific men as being too theoretical; but the reply is, that if only practical men would observe more, and record their observations, and then hand them over to the scientist, each party would, without doubt, benefit very largely by the other. The scientist has no such grand opportunities as the practical man. Thousands of facts familiar to the latter would be inestimable boons to the former, if only he could get at them. The practical man, unfortunately, does not always perceive their significance, but if every sport that has occurred on *Chrysanthemum*s had been recorded, coupled with the whole history of the plant and description of its surroundings, the method and kind of soil used, &c., as Dr. Masters suggested, whose remarks I have quoted above, I might, perhaps, at this moment have been holding forth on "The Causes of Sports, and how to Produce them," instead of being compelled to expose my ignorance by saying neither I nor any botanist, so far as I know, can yet tell you the why and the wherefore of bud-variation. *G. Henslow, M.A., F.L.S., &c.*

VEGETABLE PRODUCTS IN NEW GUINEA.

AMONGST the natural productions of the German possessions of New Guinea, many are valuable as drugs, for which it is expected an outlet may soon be found in the European markets, some having already come into commerce. On this subject the *Chemist and Druggist* makes the following remarks:—

"The long nutmegs obtained from the *Myristica argentea*, Warb., and locally known as Pala Papua, are the usual currency of certain parts of the country, and form, along with Massoi bark, the staple goods used by the natives in their barter with white traders. The root of *Derris elliptica*, Benth., is used as fish poison, while *Euphorbia pilulifera* is a common weed, which occurs as plentifully as it does throughout other parts of Polynesia and Australia. Although the natives know the Tobacco plant well, and were already cultivating it to some small extent before the arrival of the white man, yet singularly enough they give the name of Tabac to the fruit of *Carica Papaya*. A small-podded variety of *Capsicum longum* occurs wild, while *Anodendron Aambe*, Warb., is likely to become one of the most valuable products of German Polynesia. It is a new variety of rubber-yielding climber, which occurs largely in the new Lanenburg Archipelago, where its hard polished fibres are much

used by the natives; the capsules are from 4 to 5 inches long, tapering towards the end, blackish externally, and straw-coloured internally; the seeds are dark brown, elliptical in shape, flat, usually concave, broadest in the centre, with a flat base and with hooked point, from which springs a tuft of silky hair, about 2 inches in length. Both capsules and fruit closely resemble those of the *Strophanthus*."

CHEMISTRY OF THE APPLE.

COMPOSITION OF APPLE-TREE LEAVES.—Agricultural chemists throughout the world are, and have been for some years, directing their attention towards the solution of questions concerning the growth and bringing to perfection of plants and animals which serve for the use of man. With regard to plants, analyses have been made of all their parts, so that their composition is to-day pretty well known. But, as yet, it appears that little has been done in this direction for the aid of fruit-growers, and the reason is not difficult to find.

In all experiments of this nature, it is necessary to weigh and analyse an aliquot part of the final product of vegetable growth in order to arrive at the amount of plant-food absorbed from the soil and other sources; and, in this way, to ascertain the extent to which the soil has been exhausted, and the special elements which enter into the composition of plant tissues.

In the case of farm or garden crops, which are gathered annually, this is comparatively an easy task; but it is obvious that in the case of fruit trees, this, of necessity, cannot easily be done. As, however, it is as highly important to fruit-growers to know what kind of food, and what class of soils are best suited to yield the largest amount of fruit, as it is to the farmer or the gardener to be in possession of such information respecting his produce, it is but the duty of those engaged in working out these problems to direct their study so far as in their power lies towards the solution of such difficult questions.

It is with this view that Professor Shutt, M.A., of the Ottawa Experimental Agricultural Station, has directed his attention to the chemistry of the Apple. As time allows, he proposes to analyse the fruit, and the old and young wood of the tree; and from the data thus amassed, it is confidently hoped that the fruit grower will be able to ascertain with more or less accuracy the nature and amount of those fertilising elements withdrawn from the soil by the Apple tree in bearing. This will be the first step towards a more rational mode of applying manurial substances to orchards and garden fruit borders.

Professor Shutt says, it must not be thought that, even if we knew the exact composition of all the parts of an Apple tree (and as long as the fruit is hanging, it remains part of the tree), and the total weight of those component parts, and had also a knowledge of the composition of the soil in which the tree was growing, that the whole question would be settled. Until a few years ago, it was thought that such data were sufficient to guide the agriculturist and the horticulturist in manuring certain soils for certain crops, but later facts, evolved by patient experiments, conducted most carefully over many years, have now proved this theory fallacious.

We might illustrate this by reference to the cereal or grain crops of a farm and the Leguminosæ—Clovers, Beans, Peas, Vetches, &c. The former contain but one-half of the nitrogen of the latter, yet, notwithstanding this fact, and all that it seems to imply, it is found that the application of nitrogen as a manure is specially beneficial to the grain crops, but of little or no value to the Leguminosæ, especially after a certain stage of their growth. Without going into the theories which have been advanced to account for these facts, we must understand that we have to draw upon the soil, the air, and the water, or rain, for the constituents of plant-food, and the soil, generally speaking, is the only one of the three we can modify or alter in com-

* The real name appears to be *C. monfolium*.

position by mechanical and chemical agents. The climate, including degree of frost, amount of rainfall, snow, sunshine, &c., all these are important factors in horticulture and fruit growing.

But as we have no control over the atmospheric elements, the line of experiments seems rather in making choice of and multiplying from such varieties, whose qualities, dependent upon heredity and environment, make them especially adapted to the climate in which we are placed, and thus finding out by all the means at our command, and applying those constituents of plant-food best suited to their growth and development.

In the experiments of Professor Shatt, five well-known and hardy varieties of Apple trees were selected, and for the purpose of investigating the constituents which composed the leaves, these were gathered at two stages of their growth, viz., May 25 and September 20 in the same year.

Upon the first date the specimens represented leaves in a very early stage of development. On September 20, all the leaves were still quite green, and their life apparently unimpaired and vigorous. The following list gives the names of the Apple trees experimented with:—No. 1, Duchess of Oldenburgh; No. 2, Tetosky; No. 3, Wealthy; No. 4, Fameuse; 5, Northern Spy. And the appended table shows the chemical composition of the Apple tree leaves, together with such other data as may help to elucidate the questions under consideration.

The first portion of the following table represents in parts per hundred the average composition of the Apple leaf—the water, the organic matter, the mineral or ash constituents, and the nitrogen in the organic matter. The second portion shows the average percentage of the chief inorganic components of the ash. The third portion gives the average amounts of nitrogen, phosphoric acid, and potash contained in 1000 lb. of the green leaf, which serve to illustrate the absolute and relative values of the Apple leaves as a fertiliser, as well as to show the quantities of these materials abstracted from the soil by the growth of the tree foliage.

ANALYSES OF APPLE TREE LEAVES.

Composition of the Leaf, and percentage Composition of Important Constituents in the ash.

Description.	When gathered.		Difference.
	May 25.	Sept. 20	
Moisture	72.36	60.71	Loss, 11.65
Organic matter	25.31	35.83	Gain, 10.52
Mineral matter (ash)	2.33	3.46	Gain, 1.13
Nitrogen in organic matter	2.94	2.48	Loss, 0.46

Selected Constituents in the ash.—Per cent.

Phosphoric acid	10.47	5.82	Loss, 4.65
Potash	10.82	11.63	Gain, 0.81
Lime	17.40	27.91	Gain, 10.51
Magnesia	9.77	4.81	Loss, 4.96
Oxide of iron	1.49	1.41	Loss, 0.08
Silica	1.07	1.14	Gain, 0.07

Weight of Fertilising Constituents in 1000 lb. of Leaves.

	Lb.		
	May 25.	Sept. 20	Difference.
Nitrogen	7.12	8.87	Gain, 1.75
Phosphoric acid	2.45	1.94	Loss, 0.51
Potash	2.52	3.92	Gain, 1.40

We see from the foregoing data that there is from the one period to the other a loss of moisture and of nitrogen, with a gain of organic matter and of ash, which is due to increased growth, to maturation, and to increase of woody fibre in the leaves.

In order that the tree may carry on this accumulative process and produce fruit at the same time, it is absolutely necessary that it find within the soil a sufficiency of available plant-food for its use. We leave the further consideration of the subject to a future paper. *J. J. Willis, Harpenden.*

THE FLOWER-BEDS IN HYDE PARK.

EARLY in September last, in fine weather, on visiting Hyde Park, I made some notes on the style of bedding practised there; knowing that what is there carried out has a good deal to do with the fashion of other flower-beds and borders in many a fair flower garden all over the country. It is not the excellent manner in which the beds are planted and maintained which induce favourable impressions on visitors—it is the many charming ways in which the plants are disposed of, from the majestic Palm down to the lowly blue Lobelia and *Spergula pilifera* aurea, that specially attracts attention, and excites a spirit of emulation in the minds of the possessors of gardens who frequent the park during the "season," and who note the kinds of plants that please them most, and the excellent manner in which the "solitaire" and specimen plants are disposed on the turf or in the beds. My remarks on the subject which follow may prove of interest and usefulness to not a few of the readers of the *Gardeners' Chronicle*, who may not have had the opportunity of seeing the bedding-out in this park and others in and about London.

Roughly speaking, the dimensions of that portion of the Hyde Park between Stanhope and Grosvenor Gates, in which the flower-beds herein referred to are situated, are about 400 yards long and 30 yards wide; and this space is enclosed by a low wire fence, and bounded on one side by the carriage-drive (which encircles the park), and a broad walk, whereon seats are placed at short intervals, and on the other by Park Lane. In this strip of green turf there are three rows of circular and oblong beds, of uniform size, situate opposite one another, and a short distance apart, with a broad walk dividing the second and third (next Park Lane) rows of beds; large Palms in variety being disposed with excellent effect along the border of turf which extends between the first and second rows of beds for the entire length of the strip, with a fine plant of *Phormium tenax variegatum* at the Grosvenor Gate end. The pots are in all cases plunged beneath the soil. Foliage and flowering plants (the latter with the shoots tied out to green sticks), are also employed in the same manner, and with great advantage, as an irregular background to the beds next Park Lane. Among the flowering plants so used (in groups, may be mentioned the Coral Tree (*Brythrina cristagalli*), pyramids of *Cobaea scandens variegatum*, *Pelargonium Madame Crousse*, showing its large trusses of magenta-coloured flowers to great advantage; *Plumbago capensis*, *Fuchsias*, *Petunias* (single flowers), blue *Clematis*, Sweet Peas (apparently Eckford's excellent varieties), a *Begonia* of the manicata type, and large plants of scarlet and pink-flowered *Pelargoniums*. The composition of the beds, as noted in my stroll from Stanhope Gate to Grosvenor Gate and back, is as follows:—Oblong beds filled with pyramids of *Madame Crousse Pelargoniums*, *Liliums*, and *Carnations*, set in a ground-work of yellow *Violas*, with a broad band of *Coleus Verschaffeltii* and an edging of blue *Lobelia*. The next set of similarly-shaped beds were filled with pyramids of *Nasturtiums*, *Campanulas*, *Daturas*, *Calceolaria amplexicaulis*, and *Lilies*. Circular beds having double-flowered *Begonias* planted in a ground-work of *Mesembryanthemum cordifolium variegatum*, with a band of the dark-foliaged *Iresine Lindenii*, and edged with a dwarf golden *Fuchsia*, were very effective; as also were beds filled with pyramidally-trained *Fuchsias*, dark and light colours, set in a carpeting of blue *Viola*, and edged with blue *Lobelia*. Circular beds, studded with pyramids of a very dark flowered *Heliotrope*, encircled with *Coleus Verschaffeltii* and fringed with *Lobelia*, perfumed the air with its delicious odour, especially during the early morning and in the evening. Beds carpeted with blue *Pansies*, and dotted with *Fuchsias* from 3 to 4 feet high, of the *Madame Cornellisen* type (red and white), with an inner band of *Coleus Verschaffeltii*, and edged with *Lysimachia nummularia aurea* (*Golden Moneywort*), made a nice contrast to the beds previously

mentioned, as also did the beds filled with yellow-flowered *Chrysanthemums* and dark-foliaged *Coleus*, and edged with blue *Lobelia* and *Alternanthera polygonoides major*; *Canna*s intermixed with *Lilium auratum* and *Campanula pyramidalis*, with a band of blue *Lobelia*, another of *Iresine Lindenii*, and finished off with a good broad edging of *Mesembryanthemum cordifolium variegatum*, made very pretty beds; and the same may be said of *Abutilon Thompsonii*, set in a ground-work of *Coleus Verschaffeltii*, and edged with the popular blue *Lobelia*. Four circular beds—two being on either side a cross-walk, about mid-way between the gates mentioned above—filled with well-flowered plants of single red *Begonias*, encircled with a 12-inch wide band of variegated *Mesembryanthemum*, and finished off with *Echeveria secunda glauca*, had a very telling effect. I may remark that, among the beds described were interspersed several good examples of carpet-bedding, the designs, selection of plants, arrangement of colours, and the keep, being everything that could be desired—creditable alike to the park superintendent and his staff. These remarks also apply to the sub-tropical work so effectively carried out in the neighbourhood of Knightsbridge Barracks and the Serpentine. *H. W. W.*

THE STRUGGLE FOR LIFE IN THE GUIANAN FOREST.

(Concluded from p. 579.)

HAVING provided a guard against crawling vermin, the *Coryanthes* proceeds to develop a most wonderful flower, in which every part is obviously formed to attract a particular insect. The majority of insect-fertilised flowers are grateful for the visits of either bees, butterflies, or flies, but not so the *Coryanthes*. It has laid itself out only to catch and utilise, without hurting it, a beautiful metallic-green bee (*Euglossa aurata*). From the base of one of its pseudo-bulbs, a long flower-stem is produced, which pushes itself straight downwards. Upon this it hangs a number of beautiful cups, into each of which a liquid drips from two horn-like processes in the upper part of the flower. Take a china tea-cup, with a spreading mouth, hang some little flags over the handle, and stick a model of the figure head of a Polynesian canoe opposite, and you have something like one of them, as it opens itself in the early morning from a bud resembling the swathing of a Chinese lady's foot. The species vary in colour and markings, being generally whitish, or yellow, blotched and spotted with crimson. Their odour, as judged by our standard, is not pleasant, but, nevertheless, it is very attractive to the bees, which, immediately on their opening, swarm round in great numbers. Flying towards the flower, as a moth to a candle, the bee falls into the liquid which covers the bottom, and wetting its wings, is unable to use them. Look into the cup, and you will see a dozen bees swimming round and round, or vainly trying to climb the slippery sides, and, if it is the second day after opening, one or two may be seen drowned. It was never the intention of the flower, however, that their lives should be sacrificed, but on the contrary, that they should escape, and in doing so perform the office for which the whole contrivance has been arranged. Under the flags, where the column comes near but does not actually touch the cup, is a narrow opening, through which the bee can push its way out. In doing this it has to use sufficient force to widen the gap, which opens like a spring door, when it comes in contact with the pollen case, ruptures it, and carries off the male organ on its back. Not being able to fly, there is nothing to be done but to crawl over the flower spike, where, heedless of its former trouble, it soon finds itself inside another flower. In making its way out, the pollen masses are rubbed on the stigma, and the ovary fertilised, after which it may carry out the pollen masses of this flower in turn to fertilise another.

In observing these wonderful contrivances, of which almost every genus of plants furnishes ex-

amples, we are struck with the thought that there must be something like consciousness in some at least of the higher species of plants. What can be more like reasoning than the fact that Orchids and many other plants have provided against so many contingencies, some of which may not occur during the lifetime of the individuals? Some of these contrivances do not show a very high standard of morality. It is rather hard upon the butterflies, for instance, that an Orchid should take care to warn them off during the larval stage, while it cordially invites them when they suit its purpose. It seems to say, "I will have no ugly crawling worms depending on me, but you may come to my wedding, and have a sip of the nectar, when you also have on your holiday dress." In the struggle for life, there is not the slightest gleam of anything like benevolence, but on the contrary, selfishness and greed are most prominent. If a flower provides food for the perfect insect, it is simply because in doing this, the plant derives a certain advantage. There is a continual

selection is continually at work in the forest, the result being the innumerable variations which attract the amateur orchidophile.

Another side of the struggle for life is exemplified on the sand reefs. Extending for miles, large expanses of white ridges vary the monotony of dense forest and stream. Here and there, between clumps of low bushes the open spaces glare with reflected light and heat, while the sand itself is so hot that the bare-footed Indian is obliged to peel two pieces of bark to protect the soles of his feet against it. Without such an excessive rainfall as that of Guiana, these reefs would be quite barren, but under the circumstances, the hardier shrubs and a few trees manage to exist. Orchids abound everywhere upon the low shrubs, while several genera have succeeded in accommodating themselves to the sand itself. Here is a *Cyrtopodium*, with a magnificent panicle of yellow flowers, but what a fine pseudo-bulb is this! 3 to 4 feet long, and thick and fleshy, it contains a store of food against all contingencies. Unlike its relations

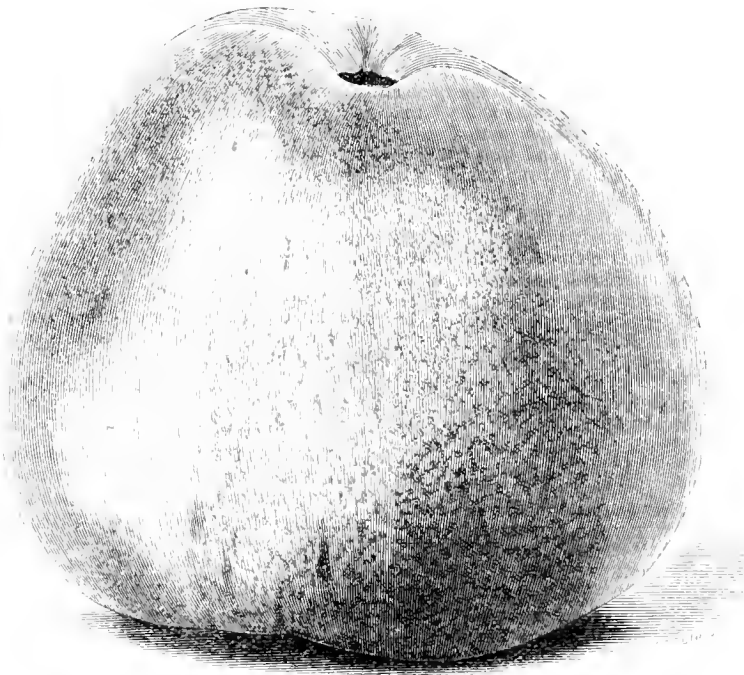


FIG. 84.—CHELMSFORD WONDER: YELLOW, SPOTTED RED.

straining of the insect to over-reach the plant, which in its turn does its very best to prevent this. The plant elaborates bitter, noxious and poisonous secretions, but notwithstanding this, some larva or other succeeds in almost every case in overcoming the difficulty. There is hardly a vegetable poison that cannot be eaten by some larva or other, and we may reasonably presume that, as the plant concentrates its deleterious secretions, the insect develops its digestive powers to meet the difficulty.

The Orchids, above every other class of plants, are examples of the highest individuality. Even the most casual observer will notice that if he has half-a-dozen plants of one species, they all differ from each other in colour, markings, size, and shape. Every plant is an individual as well as a species, this characteristic being very prominent in nearly all tropical plants. Entirely apart from the environment of the particular plant, which necessarily produces diversities in vigour and size, every Orchid may be known and recognised as easily as one of his flock by the shepherd. By artificial selection, desirable varieties of so many garden flowers have been perpetuated, but in the case of the Orchids natural

of the tree-tops, it revels in the glare, only partially screening itself beside the bushes. *James Rodway, F.L.S.*

CHELMSFORD WONDER APPLE.

THIS Apple was raised from seed by the son of a mechanic some twenty years ago, in a cottage garden in the neighbourhood of Chelmsford, but of its actual parentage nothing is known. In appearance, the fruit partakes somewhat of that of King of the Pippins, but it is larger and more solid, being adapted on that account only for culinary purposes, whilst its foliage and habit of growth resemble more closely that of the Blenheim Orange, though in young trees it is more erect, and might well be taken for a cross between those two excellent varieties. The tree is a free bearer, never having failed a good crop for the past ten years, and the fruit keeps firm up to April or May, and does not shrivel easily from exposure to the air. When cooked it is of excellent flavour, and may be used from the present time to the end of the season. Our illustration (fig. 84) is taken from a specimen which received a First-class Certificate from the Fruit Committee on November 10.

A THEORY OF HEREDITY, BASED ON FORCES INSTEAD OF ANY SPECIAL FORM OF MATTER.

SYNOPSIS of a communication to the Linnean Society, November, 1891.—Why and how forces produce hereditary effects, are beyond discovery; but it is maintained that no special form of matter (as is generally supposed) other than protoplasm is required. The latest discoveries of the organised structure of protoplasm militate against the idea of any other special form of matter.

Universal vegetative multiplication shows that every plant-cell must contain the supposed special matter (e.g. "germ-plasm" of Dr. Weismann) if it exist.

Illustrations.—1. *Animal.*—Two varieties of chickens are fed from the first day to full growth on the same kind of food: why are they different? It is more probable that the results are due to different arrangements of the same kinds of molecules than that they are due to different kinds of "germ-plasm."

2. *Vegetable.*—*Ranunculus heterophyllus* produces a land-form and a water-form, according to its environment. It therefore exhibits both "heredity" and "acquired characters." As the materials of its structure are the same in both cases, the different results must be due to different arrangements of its molecules. This must be effected by forces. In both cases it establishes an equilibrium between itself and its environment. The general effect of water on plants is degeneracy. The sudden appearance of stomata on the land-form, illustrates a case of forces normally "potential" while the leaf is submerged, becoming "actual" when the leaf develops in air.

Further Deduction.—Aquatic plants are degenerate forms of land plants. This deduction is established (1) by experimental verification; (2), by comparative morphology and anatomy.

The formation of submerged and floating leaves is the result of self-adaptation to the environment. Such are now hereditary.

Predispositions Considered: How Arisen.—Illustrations of predispositions:—Sir J. Paget on cancer; Dr. Weismann on Myopia; hereditary blindness in a cat.

Responsiveness of Protoplasm.—Illustrations of the action of the innumerable forces in the construction of the human body and soul. The soul compared to light.

Conclusion.—Protoplasm and the forces bound up with it are perfectly able to do all the work of transmitting parental characters, as well as to acquire new characters, which in turn may become hereditary as well. *G. Henslow, M.A., F.L.S.*

THE BULB GARDEN.

THE HIPPEASTRUM.

THESE plants have now quite finished their growth, and whether their cultural requirements are better understood, or the season has been favourable to them, I do not know, but they certainly have matured well, notwithstanding the unfavourable autumn.

During the last week in October, or some time in November, the entire collection should be taken out of the plunging material; and the bulbs ought to be cleaned from the outer skins, under which may perhaps be lurking insect pests of various kinds, such as thrips and mealy bug. To make sure that any examples of these troublesome parasites are destroyed, I dust the bulbs over with tobacco-powder. They are also kept dry at the roots, and placed in a greenhouse temperature, with a dry atmosphere and plenty of ventilation, until it is time to repot them in January.

The leaves ought to be removed now from all except the seedlings of the present year, which may yet be kept in a growing condition. These young seedlings do not lose their leaves in winter, and it is necessary to give them enough water to prevent their flagging. The best place for them at present

is an intermediate-house, where the temperature would not fall lower than about 50°; and it is better to place the plants near the glass roof on the sunny side of the house. When potting them in January or February, three plants may be set in a 6-inch flowerpot, and to promote root-action and start them on at once, let the pots be plunged in a bed of some fermenting material—spent tan is best, as this does not become over-heated. This is the right time to see that the wood and glass-work of the house are washed; a little soap only should be used in the water, as too much soft-soap causes the paint to come off, and it has also a tendency, I fancy, to dull the glass. The bulbs must be kept out of the way of the water.

The question was asked the other day by a grower who does not raise seedlings, "How many good varieties were obtained from a hundred seedlings?" Such a question cannot be answered right off, for a great deal depends upon what the parents are from which the seeds have been obtained. I have noticed, that if seeds are obtained by cross-breeding two distinct original specific forms, the seedlings are nearly all alike, and intermediate between the two parents; this method of cross-fertilisation is the first, as it is the best, way to obtain garden varieties of plants or trees. If a garden variety and an original specific form is crossed, there is greater variation in the seedlings; but if we hybridise two garden varieties removed several generations from the original hybridisation of two species, we obtain a much greater variation in form and colour, and the cultivator who thoroughly understands the work in which he is engaged, and has a knowledge of the various points of excellence, such as form and colour of the flowers, the number of flowers on a scape, habit and constitution of the plant itself, &c., will be sure to excel.

As we go on towards perfection, we find the more highly-developed flowers are not so prolific as seed bearers; but it is necessary to select them as pollen and seed bearers. A flower with such excellent qualities as good form and substance of petal, and with a vigorous constitution, may be chosen as a seed bearer, even if the colour is not satisfactory, for this may be secured to the progeny by the selection of a well-coloured pollen-bearer. The number of good seedlings may be determined by the wisdom displayed in the selection, but at least 10 per cent. of really good varieties may be expected; whereas in raising seedling Auriculas we should be glad to obtain 1 per cent. The only way by which I can account for this difference in results is, because the Auricula has been brought to such a high state of perfection through so many years' cultivation. *J. Douglas.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

WINTER TOMATOS.—The winter-fruited plants should have every attention to get a good set of fruit before the short days of winter set in, and to do this with so little sun and much rain more difficulty will be experienced. The foliage must be kept thin, and the plants near the glass. More warmth will now be required and the house kept drier, airing freely in the daytime, and having a chink on at night. These plants will now do with much less moisture than is usually given them, for excessive supply is the for-runner of disease. The most suitable way to fruit these plants is to grow them to a single stem, and thus get the trusses close together. These should be gone over daily, and the blooms fertilised with a camel's-hair brush. Feeding should take place when a good set has been secured: I find Thomson's Vine Manure excellent for winter Tomatos. The Old Red is one of the best for winter work; it sets more freely than the smooth round kinds, and when grown in pots the plants make a starchy growth. If white-fly is troublesome, apply flowers-of-sulphur with a duster, and treat as advised in a previous Calendar. Plants struck from cuttings some weeks back should get a saift and be kept near the light, giving the roots a little assistance by plunging in a mild bottom heat for a short time, airing freely from

the top ventilators to keep them sturdy, and when potting to make the compost firm and not too rich.

STRAWBERRIES.—With heavy rains these plants will now require shelter, and though I do not care to take them into houses that are at times warm to keep out damp, it is time they were in their winter quarters. The best place is in cold frames, or in an unheated fruit-house. If cold frames can be afforded them, it is much the best, as the crowns are near the glass, and thus get all the light possible, with plenty of air and free exposure in mild weather. If the pots are placed in frames, they should be plunged to the rim in ashes or Cocoa-fibre; if in a house, keep the plants to the front as much as possible, and do not let the roots suffer from dryness, but avoid excess of moisture. Those plunged in frames will not require water for some time; but when in fruit-houses, with free circulation of air, they dry more freely. Without frame convenience, the plants may be plunged in the open in ashes. The late forcers should be left as long as possible. Before housing, we stack ours, and in ordinary winters they do well; but with winters like the last, they require more protection to keep the roots from injury. Therefore, when stacking, it is best not to build too high, also to face north and south, as the east wind after frost, is worse than frost, and use plenty of material between the pots. *G. Wythes, Syon House, Brentford, W.*

PLANTS AND THEIR CULTURE.

FORCING-PITS.—In this department great foresight and thought will now be required in bringing forward the different kinds of plants, bulbs, &c., so as to provide a succession of blooms to furnish the conservatory and greenhouse, and also for providing cut flowers. Some of the early-potted Tulips and Paper-white Narcissus should be examined, and when well rooted bring them into this structure, in batches, so as to form a succession, according to the requirements. Well-ripened clumps of Lily of the Valley should also be introduced; plunge them in Cocoa-nut fibre refuse, where the bottom-heat can be kept from 75° to 80°, and the temperature of the structure from 80° to 85°. Keep them dark until they have commenced to throw up their flower-spikes, when they should be kept well up to the light. Single crowns may also be planted in boxes filled with Cocoa-nut fibre refuse, when required for cutting purposes, as by so doing space is greatly saved.

A few clumps of Christmas Roses, *Helleborus niger* var. *angustifolius*, should be brought forward, as they will be found very useful about the end of the year; also roots of *Spiraea japonica*, *Dielytra spectabilis*, and Solomon's Seal (*Polygonatum*); the two last-named, where cut flowers are used, should be grown in quantity. A few plants of *Deutzia gracilis*, Charles N., Lilac, and *Syringa persica* should also be introduced, and kept in a temperature fluctuating between 60° and 65°. Should the flowers of the last-named be required white, the plants should be forced in the dark.

CAMELLIAS.—The present is a most critical period in respect to these plants dropping their buds, and care must be taken not to allow the soil or the atmosphere of the house to become too dry. On all favourable occasions slightly dew the plants overhead with luke-warm water. Any late plants which have set their buds thickly, and have not been disbudded, should have attention, and assist any plants which are pot and tub bound with some well-ripened fertiliser. Keep the foliage thoroughly clean by frequent sponging, but do not use any kind of insecticide at this season of the year, as it is liable to injure the buds, and be the cause of them falling; but rather use clear soft water, which will be found much safer, and quite as efficient. *T. W. G., Finch Cuth, Easton.*

THE KITCHEN GARDEN.

ASPARAGUS.—Roots that are being forced should be examined carefully daily, to see that the heat is not excessive. Should the temperature be too great, holes of 2 inches in diameter must be made in several places, to allow the excessive heat to escape. A small amount of air may also be afforded the pit during the night, when the crowns begin to push above the soil. Abundance of light and air should be given on fine days, so as to secure a green, crisp head.

If necessary to make new beds of Asparagus, the work should be commenced by deeply trenching the ground, and upon light sandy soils a large quantity

of good manure should be worked into it. If cold and clayey, the sand must be well drained, and additions will have to be made that will render the rooting more lasting. The best materials for improving clayey soils are well-burnt garden refuse, road grit, decayed leaf-soil, and the clearings of ditches. The time to commence the making of extra beds is usually when those established show signs of degenerating, or when plantations are lifted annually for forcing.

MUSHROOM-BEDS.—Beds in the open air should be carefully examined, and if the covering materials are wet, they must be carefully removed and replaced with drier stuff, keeping the beds from exposure as little as possible. See that the beds are thoroughly covered again to a good thickness, and made as far as possible water proof. Continue to collect fresh materials, drying and preparing them under cover, to make up new beds in the Mushroom-house in place of others which have ceased to bear.

GLOBE ARTICHOKE.—For protection against severe frosts, some dry light material should be placed around the base of the leaves, having first removed dead and decaying foliage from the plants.

THE FRAME GROUND.—Materials should be got together in readiness for making up hotbeds; fresh litter from the stables and good Oak or Beech leaves well mixed and turned before using are most suitable for the purpose. Cold frames containing Endive, Lettuce, and Cauliflower should be made secure from frost by lining the outsides with some kind of litter, or by banking the soil up around them; extra coverings in severe frost will also be necessary on the glass. All such frames should be freely ventilated. The plants also must be looked over frequently, and all decayed matter removed, and the surface of the soil between them kept stirred. Any appearance of mildew among Cauliflower plants should be at once checked by light dusting of flowers-of-sulphur.

STORE ROOTS.—Look over stores of Potatoes, Onions, and all other root crops, removing all signs of decay, and sorting them to suit future intentions in regard to each. *C. J. Waite, Glenhurst, Esher.*

THE ORCHID HOUSES.

THE CATTLEYA-HOUSE.—Too much cannot be said in drawing attention to the reintroduction of the autumn-flowering varieties of *C. labiata* that are now being sold in quantity at very moderate prices. This brings the whole of the *C. labiata* within reach of the amateur and small growers. In large collections the *C. labiata* will always remain in bloom from year's end to year's end. That these plants are of a good constitution, and free in flowering, a first-year's growth will prove; we find that they do well when placed with *C. Mossiae* and *C. Mendelii*, and potted in a compost of three parts fibrous peat to one of sphagnum moss, with some broken pieces of potsherds intermixed. We have been re-arranging our plants of *Laelia anceps* varieties, so that by staking and tying the spikes of flowers gradually, we may obtain the whole of the flowers to face a given point; this adds materially to the beauty of the flowers, as each bloom can be seen in its entirety.

The watering of the Cattleya should only now be done by those who have some practical knowledge of the requirements of the plants, as each plant must be considered individually. Plants that are in small pots or baskets will require much more attention in this respect than those that have been repotted during the past summer. Although I do not advise the drying up of Cattleyas at any season sufficiently to cause the pseudobulbs to shrivel, yet to rest the plants efficiently they must be kept on the dry side for some weeks; this allows the temperature to be so reduced, that the rest necessary is compulsory. This must, of course, only apply to those plants that have finished the season's growth, or the plants would suffer from being thus treated. Any late-growing kinds should be placed in a warmer house, to swell off and perfect their growth; they may then be brought back, and treated as above.

THE INTERMEDIATE-HOUSE.—*Vanda suavis* tricolor, and, indeed, the whole of this section of Vandas, should be kept on the dry side from now to the end of February. These plants delight in a cool-house and a long rest; at the same time the atmosphere must be kept moist, which will keep the leaves plump and hard. The best way in which

to test whether moisture is required at the roots is by feeling the bottom foliage of each plant; when this softens, and shows signs of shrivelling, water should be given, but then sparingly, or the roots that are enclosed in the pot are apt to suffer. Another plant that must be kept dry for a long season is *Odontoglossum citrosum*; this plant can hardly be induced to flower, no matter how large the new pseudobulbs may be, unless a long season of rest is given. The new growth should now be about finished; if this is so, on examination of the plants, then they should be placed in a light position near the glass, and no water given at the root until the back bulbs are seen to be shrinking. To get these plants to bloom freely, it is better to err on the dry side than on the wet.

I am not at all satisfied with the colour of our *Lycastes*, the new growth is as good as we ever had, yet the flowers are neither as large or good in colour as before. It would be interesting to know if other growers have experienced the same during this season. I am afraid that this dull sunless summer and autumn has much to answer for, yet some Orchids seem really finer in colour, notably *Cattleya Bowringiana*. The temperature for each division will be safe with the figures given in last Calendar. *A. G. Catt, Parkfield, Hallow, Worcester.*

THE HARDY FRUIT GARDEN.

FRUIT TREES ON NORTH WALLS.—Morello Cherries and other fruit trees growing on northern aspects may now be safely pruned, winter dressed, and put in good order for the season. In pruning the Morello, reserve plenty of young fruiting wood, but avoid overcrowding of the shoots, as this not only prevents the ripening of the wood but weakens the trees, and the fruit, in consequence, is rarely fine. These trees also bear well on the spur system, but, owing to heavy cropping, soon become exhausted; but when trained like the Peach, they keep up a healthy growth for many years. Spur back to a couple of eyes all weak shoots not required for filling-up, and lay in at intervals young medium wood well ripened; the distance apart should range from 4 to 6 inches. See that all old shreds or ties pinching the bark be removed and replaced by fresh materials, and allow them plenty of room to swell. Young trees should, if not well-balanced, be taken entirely off the walls and regulated. In commencing to nail a fan-trained tree, the young beginner will do well to regulate and fasten all the main branches first; when once these are made to balance, then the young shoots may be filled in. Do not make use of too many nails, only sufficient to keep the branches in position. When drawing strong wood to the right place use either Willows or tar-twine, placing a piece of cloth to prevent the bark being injured. In the case of well-balanced trees, and where much nailing has to be done, there is no need for taking the whole of the trees from the walls each year, but examine the shreds and loosen them should there be any danger of the bark being pinched. Take care with the hammer, as a slight bruise not unfrequently leads to gumming.

The trees should be thoroughly washed to destroy insect pests, and if there is scale present brush it off and dress the trees with a solution of soft-soap and paraffin, keeping the two well mixed together when syringing. After the dressing and nailing is completed, should it be desirable to top-dress, remove from 9 to 12 inches of the top soil and bring to the surface some of the principal roots, first trimming the tips, and then relaying them in sweet loam and lime rubble, &c. A good dressing of lime carefully pricked in will be found very beneficial to most trees growing on northern borders, as for want of sunshine the soil is apt to become sour. Should the trees be infested with moss, dust thoroughly with fresh lime, and in a few weeks the moss will disappear.

NUTS.—Both the Filbert and Cob Nuts should be planted if the soil is of a medium loamy nature, and a good distance apart. These, with Apples, pay probably better than most fruits, as they may be stored for a length of time, and kept in good marketable condition. The Nuts should be planted at from 12 to 15 feet apart, and trained in cup-shape, which for the present is done by keeping the centres open, selecting from three to five shoots at equal distances to form the future heads; from these, as the bushes increase in size, more may be left so long as there is no crowding. Suckers should always be kept removed, and the stem clean 12 inches from

the ground-level to the bottom branches. Do not manure to cause strong growth; what is required is medium growth, and plenty of fruiting-wood.

FRUIT ROOM.—In wet weather the fruits should be gone over, and all faulty ones removed. Do not handle the good fruit more than possible, though a careful lift with the hand and the fruits again put down will do no harm; but this shifting should only be done to keep gaps good, and to keep the fruits together. Ventilate the room freely in mild weather, and to prolong the season of Pears some may be placed at the cooler end, always picking out the ripest fruit for present use. To hurry the ripening of Pears is somewhat difficult, and to attempt to retard them by placing them in a very cool spot will not do, as in both cases the fruits are never so good as when allowed to ripen gradually in a comfortable temperature.

VARIOUS.—Shred-cutting in wet weather should be pushed on so that there is plenty in readiness for fine days. Peg-making for Strawberries; fruit-boxes, &c., to be washed and put aside; net-making, stakes-pointing, and label-making are all jobs which should be forwarded in bad weather, and never left till the last minute. *H. Markham, Mereworth Castle, Maidstone.*

THE FLOWER GARDEN.

RECENT GALES.—The recent gales have caused the ground to be strewn with the branches of trees and leaves, consequently a general cleaning-up should be given in as speedy a manner as possible. Recently-planted trees and shrubs which have been loosened by the wind should, if not already done, be seen to forthwith, placing them upright, and making the soil firm about them. Plants of Wall-flowers and other spring-flowering subjects similarly affected should also be attended to in the manner indicated.

SELECT LIST OF TREES AND SHRUBS.—In forming new grounds and shrubbery borders, the following trees and shrubs should be planted among the common kinds, as well as singly on lawns and places where their characteristics will be seen to advantage; they are sufficiently hardy to be planted in all but the coldest parts of Britain:—*Acer japonicum* var. *aureum*, a most distinct variety; the leaves are many-lobed, usually seven to nine, but not infrequently eleven, which are of a soft pale yellow, with rose-coloured foot-stalks. *A. palmatum*, remarkable for the great variety in the form and colour of the leaves. *A. palmatum linearilobum* produces long narrow, slightly-toothed lobes, cut to very near the base; in the young state they, like the shoots, have a reddish tinge, but become grey as they grow older, the former retaining the reddish tinge in their foot-stalks and margins only. *A. palmatum linearilobum atropurpureum* is a very handsome and distinct sub-variety of the preceding, in which the leaves when first expanded are rose-purple, but which deepen with age to a bronzy-red hue. *A. palmatum septemlobum elegans* is remarkable for the changes of colour which its leaves undergo from first development to maturity, changing from a soft fulvous-green to rose, and subsequently to a deep red. *A. palmatum septemlobum elegans purpureum* is the most highly-coloured of all the varieties of *A. palmatum*; both young shoots and leaves when first developed are of a deep purplish-crimson, which ultimately become suffused with a greenish-black. *A. palmatum septemlobum laciniatum* is quite distinct from the preceding, and from the typical *septemlobum*; the leaves are of a soft pale green, with apex of the lobes tinted with rose when first developed—the lobes are linear, with the margins lacinate. *Cesalpinia japonica* is a beautiful Japan shrub, with leaves from 9 to 12 inches long; the inflorescence is a thyrid or sub-corymbose raceme as long as the leaves, and bearing from twenty to thirty bright canary-yellow flowers an inch in diameter, with which the red filaments and anthers form a striking contrast—the raceme remains fresh in water several days after being cut. *Clerodendron trichotomum* is a free-growing shrub, with erect stems and branches, forming in a few years a dense globose bush 8 to 10 feet high, and as much through; it is clothed with a bold dark green foliage, its large ovate-acuminate leaves being nearly 6 inches long. Its flowers appear in September, and are produced in large terminal cymes; they are white, with a purplish calyx, and deliciously fragrant. *Styrax japonica* is a deciduous shrub, of rather dense habit, from 8 to 12 feet in

height, furnished with a neat, deep green foliage, and bearing simple racemes of fragrant white flowers. *Cornus brachypoda* is a handsome deciduous tree, reaching to a height of 30 feet, and quite unlike any other *Cornus* in cultivation; the flowers are produced in cymes about as large as those of the common Elder, but of a purer white—they appear in June, and project well beyond the foliage of the tabulated branches. *Eucryphia pinnatifolia* is another remarkably handsome tree, growing from 8 to 10 feet high in its native country, Chili; it is furnished with a deep glossy green pinnate foliage, each leaf consisting of five ovate, toothed leaflets, about an inch long. The flowers, which are produced from the axils of the upper leaves, are from 2½ to 3 inches in diameter, each with four pure white spreading petals and numerous stamens, with long filaments, terminating in bright golden yellow anthers; they resemble in form an *Hypericum*, and are produced in July and August.

PLANTING BULBS IN GRASS.—During the last few days we have been planting bulbs of various kinds in masses in the grass in open spaces among the trees near walks. There are already well-established lines of Snowdrops on either side of the walks, as well as clumps among the trees, together with masses of Daffodils and Bluebells, so that with the addition of Hyacinths, Tulips, *Scilla sibirica*, and *Polyanthus Narcissus*, we expect to have a good show in the spring. To this display masses of Wall-flowers will add fragrance as well as variety. Bulb planting in the manner indicated (in holes about 7 inches deep), deserve to be more extensively practised than it is at present. The same remark applies to the planting of Lilies in open spaces, in bog and other beds. If planted in sunken pots filled with suitable soil, their roots will not be interfered with by those of trees and shrubs. *H. W. Ward, Longford Castle, Salisbury.*

THE APIARY.

STORING AWAY COMBS.—This should have early attention if not already done. Spare frames containing comb should be looked over, and those found to contain many drone cells are best put on one side to be melted down for wax. The remainder should be sorted, and those intended to be used for extracting purposes tied up in newspaper, labelled, and put in a dry place for fear of mildew; whilst those for use in the brood nest are best placed by themselves and treated in a similar fashion. If frames are too numerous to be tied up in this way, it is best to have a rack made in a dry room where they can be hung close together and covered over to protect them from dust. As a protection from the wax moth, a few pieces of naphthaline may be placed about them.

Sections that contain worked-out comb are very useful for the following year's work, as the bees are attracted to the crates, and take to them at once if a few drawn-out sections are placed in the centre. They, therefore, should be taken every care of, and prevented getting soiled by being packed carefully away in the crates and covered over. Should any of the comb in the sections be at all discoloured, the cells must be rubbed off down to the midrib, which can readily be done now that the wax is brittle.

SECURING HIVES AGAINST WIND, ETC.—The recent gales will have made havoc with hives in exposed places, where they were not made secure beforehand. A stake driven on each side of a hive is an easy means to prevent it being blown over; or if the roof only is likely to part company, this can be tied on with a piece of stout cord or galvanised wire. The legs of hives should stand well above the ground, preferably on pieces of brick, so as to keep them well out of the wet, and so prevent rotting. Hives should also stand level, as if they do not, they are apt to rock about, and be a constant source of disturbance to the inmates at a season when absolute quietude is essential. Hive roofs that leak and have gone too far to be puttied up should be covered with zinc, which will fit them for service for a long time to come. Hives with glass sides require to be very warmly wrapped up, as bees rarely survive the winter in them unless so treated.

PLANTING FOR BEES.—If evergreen shrubs can be placed to shelter the apiary from the north and east, if required, it will be found to be a great advantage in the spring, when so many bees come to an untimely end through exposure to the winds. *Expert.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Nov. 24 } National Chrysanthemum Floral
Committee, at 2 P.M.
SATURDAY, Nov. 28—Royal Botanic, General meeting.

SHOW.

WEDNESDAY, Nov. 25—South Shields (two days).

SALES.

MONDAY, Nov. 23 } Dutch Bulbs, at Protheroe &
Morris' Rooms.
Dutch Bulbs at Stevens' Rooms.

TUESDAY, Nov. 24 } Great Sale of Lilies, Daffodils, and
other Bulbs, at Protheroe &
Morris' Rooms

WEDNESDAY, Nov. 25 } Greenhouse Plants, Palms, &c., at
Protheroe & Morris' Rooms.
Clearance Sale of Nursery Stock, at
Heathfield, Sussex, by Protheroe
& Morris (two days).
Dutch Bulbs at Stevens' Rooms.
Palms, Azaleas, &c., from Ghent,
at Stevens' Rooms.
Roses, at Stevens' Rooms.

THURSDAY, Nov. 26 } Dutch Bulbs, at Protheroe &
Morris' Rooms.

FRIDAY, Nov. 27 } Established and Imported Or-
chids, at Protheroe & Morris
Rooms.

SATURDAY, Nov. 28 } Dutch Bulbs, at Protheroe &
Morris' Rooms.
Liliums, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°.5.

Electro-culture: or the cultivation of plants under the influence of electricity.

CENTURIES ago the commoner phenomena of electricity and magnetism had attracted some attention, but no one suspected that they meant anything in particular, or that they afforded indications of a

power everywhere present, and only waiting a summons to enter into the service of man. Yet we must not blame our ancestors for lack of attention or intelligence. The doors of knowledge have had to be opened one by one, and in early times, when so many of these doors still remained closed, and others were at best but slightly ajar, it is not a matter of wonder that the elusive laws of electricity should have remained unexplored. Even in our own century, what a long gap there was between the first production of the electric light and its application to practical purposes! It all seems very plain now, but two generations had to elapse before the electric light, as produced by Sir HUMPHREY DAVY in 1808, became available for general use.

If the progress made by electrical science was slow in its earlier stage, amends are truly being made now in the rapidity with which new views and new applications of it are crowding upon us. In electricity we have a power that has been in the world from the beginning, but from which, down to the present century, not one single valuable result was drawn, for the simple reason that our predecessors did not know how to make use of it; did not know enough even to recognise it in some of its manifestations. To-day, mankind has no more obedient, or, it may be added, capable servant.

The early students of electricity had a task that closely resembled putting together a complicated puzzle, of which there was no plan; but as piece was joined to piece, the plan began to reveal itself, and subsequent progress was rapid. And if, in this year of grace, 1891, the puzzle is not complete, at least we have, as far as it goes, a fairly symmetrical and intelligible pattern before our eyes, a circumstance which enables us to develop any new suggestion much more rapidly than before.

The title electro-culture is one of those new words which the progress of science is continually adding to our language—it refers to the cultivation of plants under the influence of electricity. To many this will appear as an entirely new idea, but the notion of helping forward the growth of plants by the aid of electricity is not actually new. Experiments appear to have been made by MAMBRAY in this direction as early as 1746; and the notion has probably been simmering in the minds of some scientists ever since. It is only within recent years, however, and since we have learned more about the management of this wonderful power, that any serious researches have been undertaken, and the word *electro-culture* is, as it were, but a word of yesterday's coinage.

There are two ways in which the influence of electricity upon plant-life may be studied:—

1. The effects of the rays of electric light upon vegetation may be investigated.
2. The influence of electric currents upon growing plants may be examined.

Let us first inquire into the history of electro-culture, and notice the experiments which have been made from MAMBRAY'S empirical researches down to those of the present day.

Little is known of MAMBRAY'S work beyond the fact that he carried on a number of experiments; and when we remember the loose habit of thought which characterised the "scientists" of the eighteenth century, we may feel certain that there is little use in speculating upon them.

In 1806, we learn that DE CANDOLLE gave a great deal of time to the examination of the behaviour of plants under the action of electricity, but with little result for the science of electricity was then but little advanced. Later, HERVÉ-MANGON and PRILLIEX worked upon this curious subject of research, and with no better results.

Some really interesting experiments were, however, carried on some time ago by GRANDEAU and NAUDIN. GRANDEAU tried to prove that electricity was a vital necessity to the growth of vegetation, and that this electricity naturally existed in the soil. Now, there are some substances which, like glass, porcelain, &c., prevent the movement of electricity; these are called insulators, and a body is said to be insulated when it is so mounted on or surrounded by one of these substances that no electricity can get to it. Again, electricity can act at a distance, but if a body is placed in a metallic cap, and then mounted upon an insulator, no electricity can get to it or act upon it.

GRANDEAU took advantage of these facts, and one of his experiments was as follows:—Several Tobacco and Maize plants were placed in an insulated position, and surrounded with a continuous metallic cap. After being carefully grown under these conditions for several months, it was observed that the plants had become unhealthy, whilst similar plants grown under normal conditions, being neither insulated nor capped in, developed perfectly.

It must be admitted that a critical observer, who possessed a good knowledge of the laws of electricity, could not be expected to attach much importance to this experiment.

NAUDIN performed a less negative experiment. He planted Beans, Lettuces, Tomatos, &c., and surrounded each plant with an iron wire cap, and connected this cap by means of conductors to a source from which electricity could be freely supplied. The results obtained by this treatment were somewhat significant, and, as similar plants were cultivated in the ordinary way, NAUDIN was able to draw comparisons.

The Lettuces under the cap obtained an average height of 1.20 mètres (a mètre is equal to about 39 inches), and a weight of 427 grammes (a gramme equals about 15½ grains), as against a height of 1.0 mètre, and a weight of 337 grammes when grown without the aid of electricity.

The Tomatos grew to an average height of 1 mètre, and a weight of 3.754 kilogrammes (a kilogramme is about 2½ lb.), whereas, when grown in the ordinary way, the height was 80 centimetres (a centimetre equals about $\frac{1}{10}$ inch), and the weight 3.627 kilogrammes.

No data are available with regard to the Bean-plants, but it is stated that they grew to a large size, and looked more healthy than those which had not been treated with electricity.

In England, the late Sir W. SIEMENS made some very remarkable and much more searching experiments, especially regarding the influence of electric light upon plant life. One of his investigations lasted several months. The plants were grown in two small greenhouses. Two lamps were employed of about 5000 candle-power; one of these was placed inside one of the greenhouses, whilst the second was suspended at a height of about 4½ yards above the other. The temperature of each house was maintained as uniform as possible at about 15° Centigrade.

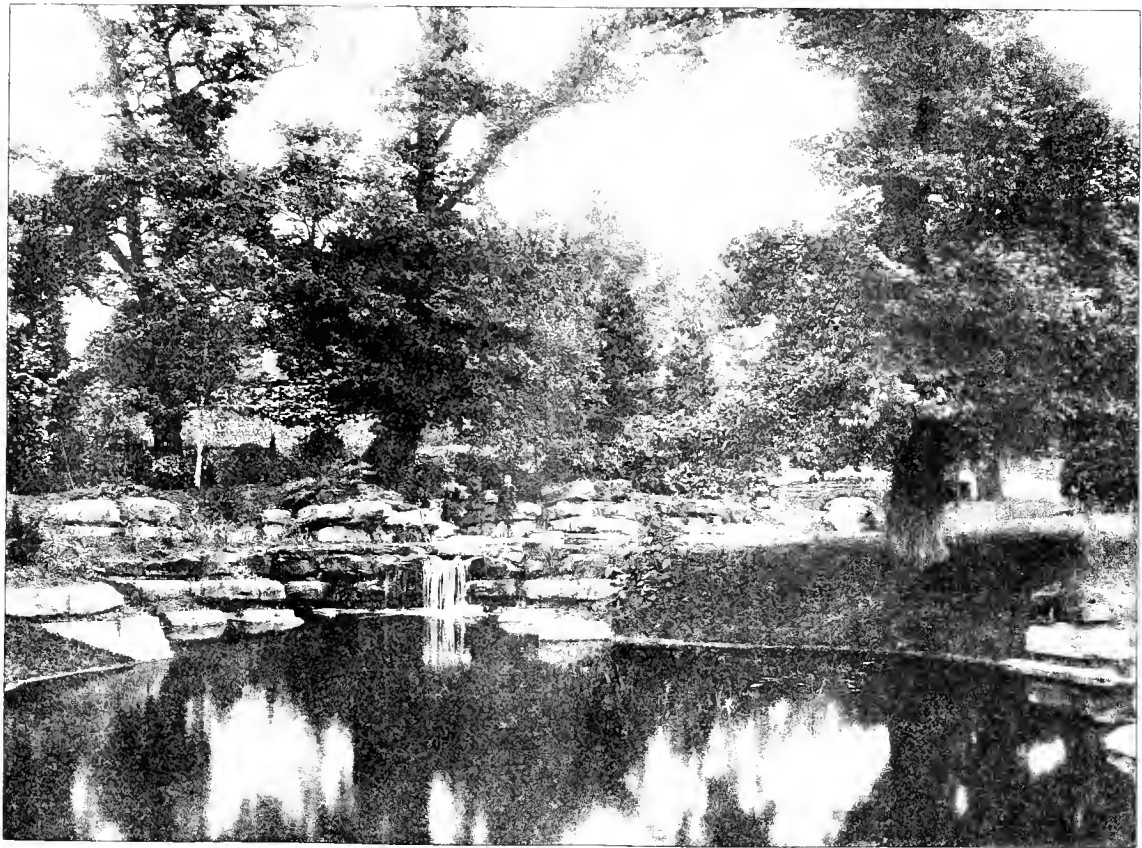
Several kinds of seeds were sown, and plants set in, and the results were observed to be, on the whole, unfavourable, especially in the case where the greenhouse was illuminated from the interior.

Sir W. SIEMENS then thought of softening the intensity of the electric light by covering it with variously tinted glasses. By this means he was enabled to demonstrate that vegetation proceeded rapidly when white glass was used; that it was much slower under yellow glass, and that in this case the plants were less vigorous and paler in colour; that red glass produced a medium growth, whilst the foliage was meagre and yellowish; finally, that blue glass yielded the worst results of all.

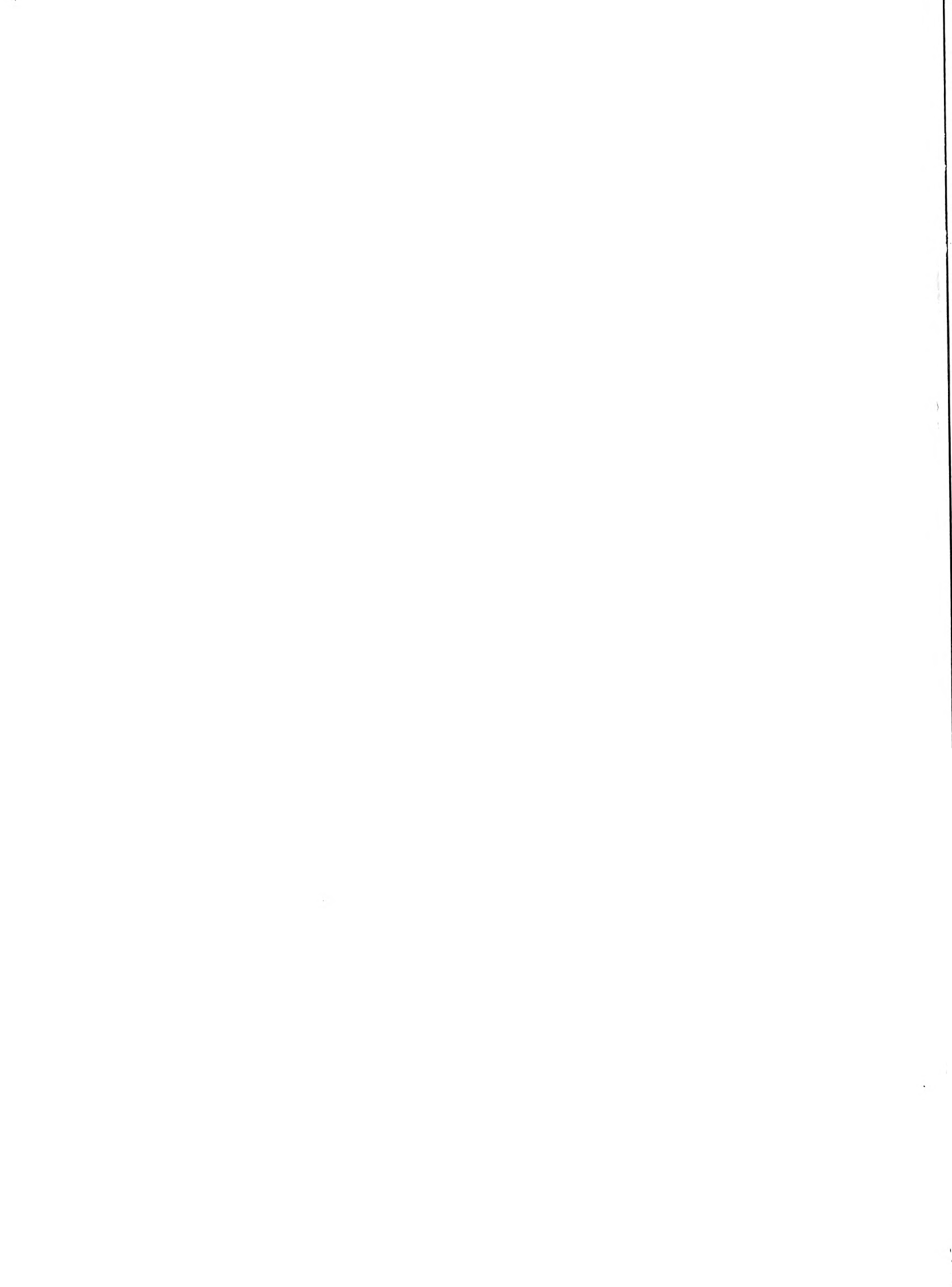
Where white glass was used, Raspberries planted on December 16 bore fruit on March 1. Strawberries planted on December 10 furnished ripe fruit on February 14. Vines planted on December 26 gave excellent Grapes, fully ripe, on March 10. With cereals there was equally rapid growth: Peas germinated in two days. The examples exhibited before the Royal Horticultural Society, at various times, by Sir W. SIEMENS, were little short of marvellous, as regards rapidity of growth. The general results are given in the *Gardeners' Chronicle*, by Sir WILLIAM SIEMENS, and others, in our volume for 1880, March 20, March 27, and April 3, together with illustrations showing the manner in which the light was applied.

It appears, then, that the effect of the electric light upon plants is of a very powerful order, and such experiments open up an exceedingly interesting line of research, which might lead to really practical results, of which we shall have more to say on another occasion.

CATTLEYA LABIATA WITH TWO LIPS.—Mr. LUCIEN LINDEN has been good enough to forward us a flower of the true autumn-flowering labiata with two lips. These two arise apparently from the subdivision or branching of one, and not as sometimes happens from the unusual development of a stamen in the form of a petal. We may add also, *à propos* of recent discussions, that whilst one lip had the character of *C. labiata autumnalis*, the other had the features of *C. Warocqueana*.



VIEWS IN THE GARDENS AT ALDENHAM.



POTATO DISEASE AND THE BORDEAUX MIXTURE.—The report made to the chief of the division of Vegetable Pathology in the United States Department of Agriculture, shows that the cost of treatment made with a small handforce pump, and in the most thorough manner, was more than compensated for by the increased yield secured.

A SYRIAN TRUFFLE.—In a recent number of the *Comptes Rendus*, M. A. CHATIN describes a peculiar Truffle, under the name of *Terfesia*. The species is known to the Arabs under the name of *Kammé*, and is brought to Damascus by a tribe of Arabs who are clothed in skins of the gazelle. Some idea of the quantities collected may be gained by the record that during the season ten camel-loads are daily brought to Damascus.

PLANT DISEASES.—The *Journal of Mycology*, published under the auspices of the United States Department of Agriculture, is devoted especially to the study of fungi in their relation to plant diseases. It furnishes an excellent example of the go-ahead-ness of our cousins on the other side of the Atlantic, and one which we should be glad to see followed here. Indeed, it is much to be desired that a Society be instituted in this country for the investigation of plant diseases, and the publication of results. The County Councils, moreover, might very well combine to secure the services of competent fungologists and entomologists, and to pay them sufficiently well to induce them to devote their time and their talents to research and experiment. Such a scheme, together with the institution of a pathological Society, would greatly advance matters.

"DIE NATURLICHEN PFLANZEN FAMILIEN."—This work, several volumes of which are in process of issue concurrently, appears with its usual regularity. Owing to the manner of publication, the sorting of the sheets for the binder becomes a matter of difficulty; indeed, it will be found preferable, we think, in order to avoid mistakes, to keep the several Lieferungen, Theilen, Abtheilungen, and Bogen unbound till the whole is complete. What LINDLEY did single-handed, or with scant assistance, in his Vegetable Kingdom is here worked up by several monographers, who incorporate a summary of the most recent researches in histology with those relating to the morphology and affinities of the several orders. In the last part we find that our humble *Adoxa* is advanced to the dignity of having a separate order all to itself, so that *Adoxaceae* now constitutes an order of a single genus and that of a single species!

JUBÆA SPECTABILIS.—"W. O.," Fota, writes in the *Garden*, that this noble Palm survived the winter at Cork, with little or no protection, even though 14° of frost were registered. The writer considers it as the most hardy Palm next to *Chromerops excelsa*.

LINNEAN SOCIETY.—At the meeting on November 5, Professor STEWART, President, in the chair, Mr. W. L. BROWN was elected, and Professor W. F. WELDON was admitted a Fellow of the Society. On behalf of a number of subscribers, Mr. CARUTHERS presented to the Society a half-length portrait in oils of Sir JOHN LUBBOCK, Bart., M.P., P.C., and F.R.S., a former President, painted by Mr. LESLIE WARD; and the remarks which he made on the services rendered to biological science by Sir JOHN LUBBOCK drew from the latter a graceful acknowledgment of the honour conferred upon him. Amongst the exhibitions which followed, Mr. E. M. HOLMES showed some new marine Algae, from the Ayrshire coast; Mr. J. G. GRENFELL showed some Diatoms with pseudopodia, illustrating his remarks with diagrams, upon which an interesting discussion followed. The President exhibited, and made some observations on, a tooth of the walrus, which illustrated in a curious manner the periods of growth. Mr. R. V. SHERRING called attention to a large series of framed photographs which had been taken under his direction in Grenada, and illustrated the general character of the West Indian Flora, as well as the

physical features of that particular island. Mr. J. E. HARTING exhibited a specimen of Wilson's petrel, which had been picked up in an exhausted state in the county Down on Oct. 2 last, and had been forwarded for inspection by M. R. PATTERSON, of Belfast. Mr. HARTING gave some account of the species, and remarked upon the unusual number of petrels, shearwaters, skuas, and other marine birds, which had been driven inland to a considerable distance during the recent gales. A paper was then read by the Rev. Professor HENSLOW, M.A., entitled "A Theory of Heredity based on Forces instead of any Special Form of Matter" (see p. 613).

VARNISH TREES AT FRANKFURT.—When, in 1875, Professor Rein returned from his travels in the Orient, and two years of whose time had been utilised in journeyings in Japan, he brought home seeds of the best of the cultivated Japanese species of varnish-furnishing trees, which he presented to the botanical gardens at Frankfurt-on-the-Maine for cultivation, says the *Illustrierte Garten Zeitung*. The seeds were sown in the open air, and about forty plants grew. The soil in which they were sown and reared was rich and moist. The plants flowered with great freedom, and set seeds, which ripened completely. The German government at the end of August this year deputed Professor Rein, who was at Bonn, to go to Frankfurt to put into practice the methods he had learnt in Japan of extracting the juices of the plant, and manufacturing lacquer. These experiments brought satisfactory results. In Japan the lacquer harvest is begun in July, and the Professor believes that equally good trees can be obtained here as there. The question is, is the lacquer as good as that obtained in Japan, and the point is to be settled by scientific investigation. Experiments have proved, that on cool days the flow of sap was very small, whilst on warm ones the flow was abundant. The trees which have been tapped can, after a short interval, be again operated on.

STOCK-TAKING: OCTOBER.—Once again the record is against us in the matter of imports, but the "difference" shows a diminishing quantity—£872,407. The figures for the ten months show an increase of £4,251,836. For those who have the time it would be an interesting exercise to see how much of the reduction is due to lower prices. The same remark applies to the matter of exports; of this, more anon. The following is our usual excerpt from summary of *Imports of Foreign and Colonial Produce for October, 1891*:—

	1890.	1891.	Difference.
	£.	£.	£.
Total value for month	£17,746,236	£16,873,829	-872,407
§II.—(A.) Articles of food and drink—duty free ...	12,440,183	12,929,033	+488,850
(B.)—do., dutiable	3,165,302	3,323,452	+218,150
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	6,997,451	5,423,318	-1,574,133
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,105,988	4,038,042	-67,946
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,331,166	1,301,447	-29,719
(B.)—Parcel Post ...	58,438	59,152	+714

In the exports of British and Irish manufactures, there is recorded a decrease of £2,506,977 as compared with the same period last year, and of £12,491,168 for the ten months as compared with 1890. It must here be borne in mind that there is not this year a M'KINLEY "boom"—things are all the other way; and we cannot record a perfect recovery in the money market from the effects of the BARRING scare. Affairs in Chili and Brazil

have had a damaging effect on our commerce; so much was expected from those localities after the M'KINLEY Tariff Act had begun its operations. Altogether the wonder is—not, perhaps, so much that the exports have been reduced by the figures noted, but that the falling off has not been more. Common sense is coming to the help of those peoples equally interested with ourselves in the spread of Free Trade principles, and these are not the millionaires of protected countries. The "set" to be made in the United States against the M'KINLEY Tariff will be a very determined one in the imminent Presidential election campaign; and the demoralising effect of Protection in the encouragement of smuggling, &c., is being felt on the enormous "borderline" of the United States. It is worthy of note that "indirect" smuggling is largely on the increase in the States, for all travellers of that ilk on their return home are simply loaded with articles of personal attire, which pay nothing to the Customs; and an association has been formed in New York whose object is to watch all such "operations," and draw the attention of the Government and its officials to this, as it is termed, "unpatriotic" conduct. In France, the discovery has been made that protecting the silk industry is all against the trade, for by just so much as that of France has decreased—and the figure is considerable—so great has been the gain in Italy—a double discovery, of equal value to the parties interested. The Ministers of Commerce in both countries have made the discovery, but not until the artisans had had tangible experience of the grave blunder. We must wait returning confidence at home and peace abroad, improving the processes of manufacture wherever possible, ready for a fresh start at, let us hope, a not distant date. The following figures are extracted from the general mass of imports for the month, and possess all the old attractiveness:—

	1890.	1891.	Difference
§ II. Fruit:—			
Apples, raw ... bush.	586,832	593,402	+6,570
Unenumerated, raw	686,262	706,685	+20,423
Onions	514,681	474,881	-39,800
Potatoes cwt.	55,938	44,135	-11,803
Vegetables, raw, unenumerated value	£60,191	66,805	+6,614

It may not be inopportune here to record that the Council of the Central and Associated Chambers of Agriculture have been taking stock of the Railway Tariff which is to come into operation in August of next year, and have found that the railway companies will not be altogether losers by the new state of things. The grower near London will be in no better position than he is to-day, owing to the terminal charges and the diminishing scale for those further afield. This is certainly hard upon those who pay such rents and rates as those within comparatively short distances of the metropolis. Messrs. HICKS-BEACH and CHAPLIN will doubtless have their attention drawn to this at the earliest possible date, but however willing these gentlemen may be to help the tiller of the soil in this dilemma, we doubt if anything can be done to mend matters until the new Parliament meets.

CHICHESTER MUNICIPAL ELECTION.—It may interest many of our readers to know that at the recent municipal contest at Chichester, Mr. H. H. MOORE, of the Chichester nurseries, was returned at the head of the poll by a majority of twenty.

THE CHICAGO EXHIBITION.—California is the first State to respond to Chief BUCHANAN's request that each State contribute the trunks of three of its most characteristic trees, to be used in constructing a rustic colonnade for the Forestry building. California's contribution includes a Sugar-pine, *Pinus Lambertiana*, furnished by TOWLE BROS.; a Redwood, *Sequoia sempervirens*, by J. F. CUNNINGHAM; and a Sequoia (*Wellingtonia*), by SMITH COMSTOCK. One acre of ground within the horticultural building has been reserved for an Orange grove from Florida, and the same amount for a grove from California.

These trees will be brought to Chicago next year, and planted so that they will bear fruit while the Exposition is open. These two acres constitute two interior courts of the building.

NEWCASTLE-ON-TYNE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The third ordinary meeting of this Society was held at the Literary and Philosophical Institute, Newcastle, on Thursday, November 5. Mr. A. HESLOP presided. Mr. ADAMSON introduced the questions which had been asked by various members of the questions committee, and which included *Eucharis candida*, Tomato disease, herbaceous plants, &c. A slight discussion took place in answer to each question. Seventeen new members were proposed and elected. On November 19, a paper was read by Mr. JOHN ELLIOTT on "Plant Construction."

A £250 CYPRIPEDIUM.—In the Orchid-houses at Messrs. F. SANDER & Co.'s may be seen a plant in flower of the *Cypripedium insigne* Sanderae, which was so much admired when it was exhibited at the last meeting of the Royal Horticultural Society. It was introduced by Mr. SANDER three years ago as a single plant. Half the plant was acquired by Baron SCHRODER at auction for 70 guineas, the other half going to Mr. R. H. MEASURES, who divided his portion into four, one being secured by Mr. R. I. MEASURES, one passing into the hands of F. L. AMES, Esq. The remaining two parts were retained by their owner, who sold one to Mr. SANDER on Saturday last for £250.

COUNTY COUNCILS AND THE EDUCATION SCHEME.—In a circular addressed to teachers in public elementary schools, the Technical Education Committee of the Surrey County Council state that arrangements have been made for the following lectures and classes on Saturdays, at 11 A.M., beginning on October 3:—

GUILDFORD.—Agricultural Chemistry, followed by Laboratory Work. In the afternoon a class in Qualitative Analysis.

FARNHAM.—Experimental Mechanics, followed by Laboratory Work.

REDBILL.—Culture of Fruit and Vegetables, followed by a class. (Illustrations by diagrams.) Probable class in Qualitative Analysis.

CROYDON (or the neighbourhood).—Experimental Mechanics, followed by Laboratory Work.

KINGSTON.—Chemistry of Arts and Industries, followed by Laboratory Work, with class in Qualitative Analysis.

CHERTSEY.—Agricultural Botany, followed by a class; or Animal Physiology, followed by Laboratory Work.

After Christmas, the subjects in the various centres are to be changed. In reference to this matter, a correspondent writes as follows:—"You will see by the enclosed cutting that the Committee of the Surrey County Council has arranged for six courses of lectures in as many different towns for teachers in public schools, five out of which six courses are of great importance to all gardeners, but everyone except the teachers is effectually stopped from attending, the lectures starting at 11 o'clock on Saturday morning. Why could they not be fixed for some time in the evening? thus enabling persons engaged during the day to attend, especially as the public can do so for a fee of 2s. per lecture; and it would be no more trouble to address a full room than it is to address one half-full. The hour is fixed, I suppose, to suit the teachers (which I doubt if it does); but surely they would not object to have them on another week-day evening, and thus get Saturday clear. This alteration would be a boon to thousands of farmers and gardeners, instead of which, as at present arranged, it is a great means of good only half used."

CATLEYA LABIATA.—Now that attention is called to the plants of autumn-flowering labiata of the old stock, there seems to have been many more

varieties than was anticipated, and some of them of but indifferent quality. The best we have seen is represented by a superbly rich-coloured flower from Sunny Hill, Llandudno, taken from a plant which the owner, JOSEPH BROOME, Esq., says has been in his possession for more than a dozen years. The flower is $7\frac{1}{2}$ inches across, with petals $2\frac{1}{2}$ inches wide. The sepals and petals are bright rosy-lilac, and the lip has but little yellow at the base, and with a dark velvety crimson front lobe. There is a white ray from the column up the base of each segment, and the flower looks particularly bright at night by artificial light—a quality which is shared by all of the recent importations, which have flowered, and which seems to assist greatly in establishing their identity.

MANCHESTER ROYAL BOTANIC GARDENS.—The following dates are fixed for exhibitions during the forthcoming year:—First Spring Show in the Town Hall, Manchester, March 15, 16; second do., April 26; Special Exhibition of Orchids, Roses and Rhododendrons, opens at the Gardens, June 3; Orchid Conference, June 4; Rose Show, at Gardens, July 16.

SANDRINGHAM.—In connection with the extensive alterations which have been carried on since Mr. MCKELLAR took charge, there has been just completed a fine and commodious bothy for the young men, fitted up with all the latest improvements in heating and sanitation, hot and cold water, lavatories, baths, &c.; and to inaugurate the new premises, the gardeners on Thursday evening last gave an evening entertainment, which was much appreciated.

THE DESTRUCTION OF BLIGHT ON PLUM TREES.—In order to destroy blight and insect pests generally on Plum trees, the foliage may, it is said, be advantageously sprayed with a liquid composed of the following ingredients: black soap, 35 grammes; warm water, 1 litre; amyl alcohol, 60 grammes. The soap is dissolved in the water first, the solution cooled, and then the amyl alcohol added. Care should be taken to reach both surfaces of the leaves with the spray, and the operation should be performed either in the early morning or in the evening. The treatment is only necessary about twice.

THE LIBRARY AT KEW.—The December number of the *Bookworm* will contain an article on the Library at the Royal Gardens, Kew.

OAKDENE, GUILDFORD.—This estate has been purchased by the Marquis of SIBBO. Mr. H. AUGER remains in charge as Head Gardener.

HEN AND CHICKENS CHRYSANTHEMUM.—Messrs. CANNELL send us specimens in which the terminal flower-head was surrounded by a cluster of side-buds, just as in the Hen and Chickens Daisy, but more crowded. The bond between mother and children, however, was not very strong, as they all fell away one from the other.

NOVELTIES.

DALGARNO'S PATENT TURF CUTTER (fig. 89). This machine has been designed in order to furnish an implement for cutting turf, to supersede the edging-iron and spade. Where large breadths of turf require to be cut for bowling and tennis-greens, it has hitherto been a tedious process, and it is also difficult to cut the turves all an equal depth, as also to cut them perfectly square. The cutting part of this machine is a round steel disc, with a socket for inserting into the handle; this disc is made to shift by a screw, to cut any depth from 1 to 3 inches. The guiding wheels are attached to the casting at a convenient distance on either side of the disc, and when it is cutting, these wheels keep the disc in proper cutting position. The main casting is so constructed as to give the required weight needed for making the disc cut the grass freely. In cutting the turf, a line is laid down from end to end, the disc inserted on the line, and the machine moves

along quite freely. The sides of the turf are cut perfectly square, and at an equal depth, which ensures perfect accuracy when a tennis-green has to be turfed. Mr. Barron, of Chiswick, and others, have seen it at work, and speak highly of its simplicity and efficiency. The machine can be worked easily at an ordinary walking pace. The patentee is Mr. Dalgarno, gardener, Gilcomston, Aberdeen.

HOME CORRESPONDENCE.

A FINE CROP OF ONIONS.—This year it seems that the spring-sown Onions in this locality have proved almost a failure. In the first place the maggot spoiled a quantity, and what survived the mildew seemed to have been completely demolished. I have seen the remains of what at one time promised to be a very fine crop; but the maggot and mildew has made a fearful havoc amongst them. I have grown six of what may be called the best sorts, viz., Bedfordshire Champion, which is considered a heavy cropper; James' Long-keeping, an excellent keeper; Rousham Park Hero, Nuneham Park, Veitch's Maincrop, and Dickson's Defiance; the last-named is the best. From the first it took the lead, and those who have not grown it will do well to give it a trial. All the above kinds were grown on the same piece of land, and given similar treatment. The ground was dug last autumn, and left rough; at the end of February it was forked over, working in lime and soot mixed together. Dickson's Defiance Onion is of fine shape, and available for the exhibition-table. It is also one of the best for general use, it being firm, heavy, and an excellent keeper. C. E. Martin, *The Hoo Gardens, Welwyn.*

THE PROPOSED INTERNATIONAL FRUIT SHOW.—There can be no doubt whatever but that the proposed international fruit show, referred to in your leader of November 7, has already attracted great attention. It is a fact, good or bad, that fruit culture, and all that relates to it, is just now a dominating idea in the public mind; and, so far as I can learn, the chief object of the proposed show is to help to turn that sentiment to practical account. I was not present at the impromptu meeting held at the Crystal Palace in the afternoon of the day of the October fruit show held there, but I am informed that the original suggestion, that such an international show should be held, and at the Palace, was a spontaneous one, and in reality grew out of the recent International Fruit Show at Edinburgh, which some of those present at this informal meeting attended, and who were desirous of seeing something of the kind promoted in London. Amongst those interested in fruit culture with whom I associate, I never hear, publicly or privately, one word derogatory to the Horticultural Society on its premier position as a horticultural society, but simply objections which seem to be used as to the business capacity of the Council in relation to the conduct of large national or international enterprises. It cannot be too clearly shown, that the mere fact that a gentleman is made a member of the Council does not evidence that as a consequence he is therefore a first-class business man, and it is specially evident that good business qualifications, with plenty of shrewd clear-headedness and independence of thought, as well as decisiveness of action, are the chief elements desired when the conduct of a great effort such as this proposed exhibition is in question. I venture to think that the Council could hardly send as representative, if it purposes to do so, on to the proposed committee better men than Mr. W. Marshall and Mr. G. Bunyard; but all the same I would point out, so far as the latter gentleman is concerned, that as I gather the wishes of the original promoters, it is hoped that the nursery trade will be only very sparingly represented, because it is so earnestly desired that the exhibition should not be concerned or conducted in the interests of any section or class; but be as much in the interests of consumers as of growers, and of private gardeners, amateurs, cottagers, &c., as of the fruit tree trade. In the ultimate formation of the Executive, it will be impossible to overlook these various interests, hence there can hardly be found stronger reasons for keeping the entire control of the exhibition in the hands of a body which represents no special interest, but the interests of fruit universally. Of course, there are many "ifs" to be encountered before the proposal can be realised, but I do know, that

whilst Providence may shape our ends, rough-hew them how we will, yet it is the possession of plenty of moral force, courage, and capacity to perform the rough-hewing, which becomes the assured creator of ultimate success. For this reason opinion is, I believe, unanimous in favour of the leadership of Sir James Whitehead. The proposition needs powerful influence and a strong financial backing. But more than that, Sir James Whitehead has literally taken the lead in fruit culture, quite apart from the Fruiterers' Company, because he is endowed with strong enthusiasm in its favour. I incline to the belief that every agricultural, as well as horticultural, body in the kingdom ought to be anxious to give the proposed exhibition every possible encouragement and support. It is to be a great national effort, and any bodies which hold aloof will suffer in prestige, and lose a splendid opportunity to render horticulture, so far as relates to fruit culture, great and good service. Let the council of the Royal Horticultural Society learn to realise that some may be of its most earnest supporters, and yet as anxious to help every good movement of an horticultural nature, and then it will take no unwise course, but will, heart and soul, associate itself with the proposed exhibition. *Fructus.*

its usefulness as a pot plant for room decoration, as it will last in bloom quite six weeks in the drawing-room. The plant is of easy culture, and may be said to be capable of growing anywhere. In very wet soils, a little protection should be afforded it by covering the soil around the plant with charred garden refuse. *G. B. Claydon.*

CIDER KEEPING (see also p. 620).—If your correspondent, "A. W.," Hereford, p. 591, will get 4 or 6 lb. of common treacle and 1 lb. of ground ginger, mix well together, put it into a tin pan, and bake it well until quite hard; then break it up and put into his cider, let it stand perfectly bunged-up for three months, he will find on tapping that his cider will be perfect, and fresh as champagne. I have known cider keep beautifully for several years on this treatment. I have never known Hops used. This is an old recipe of sixty years ago. *T. H. R.*

ABUTILON THOMPSONI.—This is one of the best yellow foliage plants at command for employment in the flower garden. The large blotches of marbled yellow on the deep green leaves are very effective when judiciously employed in beds with suitable companions. We plant this Abutilon among

nepalense. The dissections in the original drawing (six separate perianth-segments, a single stamen, pistil complete and horizontal, and vertical section of ovary), are not reproduced in the published plate. The figure in *Elvans* is copied from the published figure of Wallich, both as regards form and colouring. The three figures are in reality one only, and that one drawn and coloured from a dried specimen of *L. nepalense*, Dön. No one, who has seen the three figures, could possibly suppose that they had any thing to do with the Burmese *L. Wallichianum* superbum. Leaving flowers out of account, in the Nepal plant the leaves are short and oblong-lanceolate, in the Burmese plant they are long and narrowly linear. *J. G. Baker, Ken.*

BOUVARDIAS—Very few flowers are so useful as these at this time of the year, and onwards to next March. One of the prettiest shows of Bouvardias I have ever seen, came under my notice this week. There were plants in all sizes of pots from 48's up to 16's, and ranging from 9 inches up to 4 or 5 feet in height. Many of them were quite covered with flowers, particularly Mrs. Green, Vreelandii, and Hogarthi flore-pleno. They were not grown in any particular compost; some had a nice mixture of turfy loam and sand, others; leaf-soil and ordinary garden loam, and a few were grown in garden loam and well-decayed stable-manure from an old hot-bed. All of them, however, were looking remarkably healthy, and there was little to choose between them, whether grown in one composition or the other. I discovered that the main reason of such a grand success lay in having the plants thoroughly well drained, and giving them plenty of water. Struck in the spring, and grown on rapidly in a temperature of 65° to 70° until the middle of July, afterwards kept in a cool-house and well syringed upon bright days, constituted, according to my informant, all the attention they received. By the end of September the plants had a little fire heat, and were very soon in active growth and flower. By feeding the plants and giving them a temperature of not less than 55° at night, rising to 65° and 70° upon a bright day, these plants will continue to supply an immense amount of flowers for another two or three months to come. Bouvardias like a good supply of water, but the plants must not be allowed to get sodden at the roots or dire results are certain to accrue. *A. P.*

CLIMBING NIPHETOS ROSE.—Referring to your notice (p. 586) of the disappointment one of your German correspondents has received regarding the above, I must say a word in favour of this Rose. Your correspondent, and also the nurseryman he mentions, have evidently not got hold of the proper variety. You mention that it may be that the climbing habit is not assumed at first. Now quite the contrary is the fact, for from the very first growth this grand variety grows very vigorously. I have young plants that were grafted during last February and March, and that are now carrying two to four long shoots, some of them fully 12 to 15 feet long. This is the first time I have heard any complaint respecting this Rose. Climbing Niphetos has with me proved itself all that Messrs. Keynes, Williams & Co. claimed for it on introducing it to the public. Its flowers are in all respects equal to the well-known kind that it originated from. If your correspondent would purchase from a sound firm, or from the raiser, I do not for a moment think he will be disappointed as regards its climbing characteristics. *A. Piper, Uckfield.*

— An article or paragraph referring to this Rose (p. 586) would probably excite some suspicion as to the climbing capabilities of this Rose. I have one here that is upwards of 14 feet, and that has borne probably over 700 flowers since last Christmas. I have frequently been asked if that is the climbing Niphetos, but I am under the impression it is not, because it was planted before the so-called climber came into repute. It does climb certainly, and that very well; and may easily be called under that head. I have not yet seen a good plant of the climbing Niphetos, neither do I want it, as the variety we have climbs as far as we need it to, and is the most useful Rose that we have, for I need hardly say that we are seldom without a bloom of it. *W. A. Cook, Compton Bassett.*

BEGONIA WELTONIENSIS.—This is one of the best of the fibrous-rooted Begonias for flowering in the greenhouse continuously for five and six months at a stretch, provided, of course, it receives reasonable treatment. The bright salmon-pink of the



FIG. 85.—PATENT TURF CUTTER. (SEE P. 618.)

FORCED SPINACH BEET.—Most gardeners know the value of this kind of vegetable, and often substitute it for true Spinach, especially if the summer has been a dry one. Spinach Beet may be forced by filling a garden-frame, standing on a mild hotbed. This may be done in the late autumn, and there will be no lack of young leaves to use as Spinach during the first three months of the year, a time when but little true Spinach can be found in the garden. *G. B. Claydon.*

BOCCONIA CORDATA.—All who are in search of stately free-growing perennial plants, and not already in possession of *Bocconia cordata*, should hasten to secure it. It is not only suitable for back rows in roomy herbaceous or mixed borders, but also makes a suitable display as a single specimen lawn plant. Its bold and pleasing contour is made up of numerous large, irregular-edged, heart-shape leaves of glaucous hue, over which rise bold panicles of light-brown flowers, with chaste elegance. Therefore, as a Chinese plant, it has distinctive features, whilst its hardiness, and the very moderate price it is catalogued at, leaves nothing to be desired, though it may be well to remark it thrives best in deep sandy loam upon warm aspects, and is not at all partial to cold undrained soils. *William Earley.*

SEDUM SPECTABILE.—This is one of the prettiest of our autumn-flowering plants, with its glaucous foliage; but its greatest merit is, in my opinion, in

tuberous-rooted Begonias, mainly red varieties, keeping them about a yard apart, and restrict them to a single stem. The deep green of the Begonia foliage, and the bright red of the blossoms, make a capital contrast with the yellow blotches of this Abutilon, especially when the plants stand above the Begonias a couple of feet. Cuttings inserted in a brisk bottom heat in March grow into nice plants by the beginning of June. The plants should be restricted to a single stem, allowing that to grow uninterruptedly, in this way the finest leaves are developed. If larger plants are required, cuttings should be inserted, three or four together, in 3-inch pots early in September, plunging them in a gentle hotbed until roots are formed, when the plants ought to be kept stocky by placing them near to the glass in a cool-house through the winter, potting them off separately early in March. *E. M.*

LILIUM OCHROLEUCUM, Wallich.—I am much obliged to "J. M." for the reference to Lindley's note on *L. nepalense*, in *Gardeners' Chronicle*, 1855, p. 564. Judging from the short description, I should think the plant he had before him is more likely to have been polyphyllum than nepalense. In answer to "J. M.'s" question about Wallich's ochroleucum, the following is how the matter stands:—The drawing which we have in the Kew collection marked *Lilium ochroleucum* in the handwriting of Wallich, is manifestly the original of his plate published in *Planta Asiaticae Rarioris*, under the name of

reely-produced blossoms is very pleasing on the plant, and in a cut state it is serviceable, when in good lengths and associated with its own foliage, set up lightly, adding only a few fronds of Maidenhair Fern to make the appearance lighter still. Dividing the roots is a ready means of increasing the stock. *E. M.*

YUCCA FILAMENTOSA.—If planted in masses on a lawn, *Yucca filamentosa* is very attractive when in flower during August, the almost white flowers contrast so well with the surrounding green of the turf. Any ordinary good soil will grow this *Yucca* to perfection, provided some manure is added at planting-time, which not only increases the size of the flowers, but gives a deeper colour to the leaves, which enhances the appearance of the plants at all times. *S.*

ESTATE FRUIT PLANTING—At p. 557 "A. D." appears sceptical upon some of the points raised, especially as to whether we are pursuing the best tactics in the matter of stocks. I suspect he has formed his opinion from the condensed reports only, and not from the entire substance of the paper. At all events, his theory and doubts as to "whether there could be found outside of nurseries, just the technical knowledge, born of wide experience, which nurseries alone afford," is extremely fallacious, and his fears as to the inferred supplying of "badly worked or inferior trees" to tenants is equally absurd. The purchasing of maiden trees from the trade would not remedy this, and the least experience would soon convince "A. D." how erroneous it was to remove maiden trees that were intended to make standards for orchards, although the plan may do for bush work or pyramids. We do not want to dwarf the Crab stock, nor yet to lose any of its vigour; but we do want to substitute for its natural and barren tap-roots a multiplicity of fibrous and fruitful roots, for which purpose we always select the strongest and healthiest seedlings. Moreover, we hold that the extra trouble taken in the preparation of the stock, prior to working, is amply repaid in after years, especially when the question of root-pruning, and its doubtful consequences by inexperienced persons, are considered. Home plantations have been made of all the best varieties, demonstrating the best known methods of cultivation, in order to teach an object lesson to such tenants as are open to receive sound practical ideas on fruit growing. There may be other advantages, on large estates, without casting any reflection upon the trade, but I ask, what scheme can be more likely to succeed as a permanency, or more worthy of encouragement, than the enterprise of supplying tenants gratis, farm and cottage alike, with first-class trees of first-class kinds, well proven to suit the locality? We are so sanguine of the results, gained by past experience, that we shall continue to extend it, thereby adding to the commercial value of the property. If such were universally carried out, we should certainly bear less about the deferred planting, owing to the insecurity of tenure, &c. The scheme adopted here, first suggested itself from the fact that, both cottages and farm tenants, during the long years of agricultural depression, who were best suited with fruit trees on their holdings, were in a better position to meet their rent obligations, than their brethren less fortunately placed with fruit trees. If "A. D." is still sceptical, I hope he will arrange to pay us a visit now at once, before the trees are sent out for distribution, in which case I promise hospitality and welcome, and I will further undertake to demonstrate more fully the practice I have hitherto conscientiously preached, endeavouring to convince him that the quality of both trees and stocks are inferior to none, although worked by a handy labourer, without the supposed inevitable "long nursery experience." *Wm. Crump, Madresfield Court.*

COPROSMA BAUERIANA VARIEGATUM.—This makes a showy specimen for a large conservatory, where numerous foliage plants are grown. The rich yellow of the variegated leaves show to advantage when the shoots are trained flat to a balloon-shaped trellis. *S.*

CHRYSANTHEMUM SPORTS.—In last week's *Gardeners' Chronicle*, p. 576, there is an article upon sporting, and it is said that *Etoile de Lyon* bears two kinds of flowers (which I do not dispute), the crown or single buds being pure white, while terminal buds are a lilac-rose. With us this season we have no such distinction, but we have a white bloom and a lilac bloom upon the same plant, and both were crown-buds. We have several plants, but the sport

has only appeared upon one, and this plant has only two flowers, both crown-buds, the one white, and the other lilac. *Stanstead Surprise* is indeed a surprise, for we have no less than three sports, and all different, but none of which are better than the original. I enclose sports from several, and also the two *Etoile de Lyon* flowers. *W. A. Cook.*

PRIZES AT THE BOTANIC.—At the Royal Botanic Society's fête, held at Regent's Park on July 8 last, I was awarded a prize, value £5, for an exhibit. Not having received either the prize or any reply to two letters I have addressed to the secretary on the subject, I shall be glad if you will be good enough to insert this, in order that future exhibitors may know what to expect. If the society has not funds available with which to distribute their prizes within four months of the date on which they are awarded, it seems scarcely right to offer prizes, which are intended to induce exhibitors to furnish the tents, and without which inducement there would probably be no exhibits. *A Prize Winner.*

CIDER MAKING.—(See also p. 619). In reply to your question from "H. W., Hereford, p. 591, we have pleasure (as one of the chief wholesale sugar dealers in England), in enclosing a pamphlet on the use of sugar in cider making, compiled by us some years ago. This question is really of considerable importance if the fruit crops of this country are to be properly developed. Our cider, generally speaking, is made by rule of thumb, and the farmers or manufacturers are quite at a loss to understand its variations in quality from year to year. In the same way they have no clue to the varying times for which their cider will keep. A little scientific inquiry would show them, however, that the whole of these variations are due chiefly to the varying proportions of saccharine in the raw Apples. In a damp sunless year like this, the proportion of saccharine would be very small, and the same Apples in a very sunny year might be far sweeter. The amount of sugar to be added has to be governed by the amount of saccharine in the fruit, and this can only be ascertained by the use of a cider saccharometer. One adapted to French measures and called "*pèse cidre*," has been invented by Mons. Vivien, a well-known French chemist, and we believe a cider saccharometer adapted to our pounds and gallons can be had of Messrs. Negretti & Zambra, Holborn Circus. The inferiority of British cider to that made abroad is well known to all those who have visited Normandy. The production of cider in France is over 226 million gallons a year, and a great deal of sugar is used in its preparation. Sugar is also used to a large extent in the manufacture of American cider, which is actually exported to this country where the best sugar cider in the world could be made. In the pamphlet we send you, London pearl sugar is recommended, but the manufacture of that quality has been discontinued, and its place could best be taken up by German granulated, which would be sold in 2 cwt. bags by any grocer at 17s. or 18s. per cwt., according to the carriage and the quantity taken. It is specially to be noted, that it is during the process of fermentation that sugar can be properly added to cider. When so added, it is converted into alcohol, and enables the liquid to be kept for any length of time. If added after fermentation, it is simply an adulteration to conceal bad flavour, and the addition ensures the rapid deterioration and destruction of the cider. Unconverted sugar, in the same way, is unwholesome, while the converted sugar is not so. *Travers & Sons, Limited.*

AUTUMN-FLOWERING PLANTS.—In a large herbaceous border I saw the other day, the following were bright and flourishing, even after the wretched "rain of terror" we had last month. They were the white *Tradescantia*, *Physalis Alkekengi* or the Winter Cherry, *Calceolaria hyssoaphylla*, which did not seem the least affected, and whose pretty foliage was covered with bright golden flowers; *Agathaea celestis*, *Cuphea*, *Nicotiana glauca*, the *Heliotropes*, and *Cnothera taraxifolia*. To the last-named hangs a tale: a visitor, who was very fond of giving advice, reported to the proprietor that the border was full of Dandelions, whereat the canny Scotch gardener scolded all along the line. *Vagabond.*

HARDY PERENNIALS.—I would mention as just occurring to my mind, the herbaceous *Polygonum* as answering to my classification of hardy herbaceous shrubs. These are too hard-wooded to be classed with ordinary herbaceous plants, and in all respects bear more resemblance to shrubs than to border flowers. I do not see that some *Hydrangeas*

differ much from these when the annual growths die back, as is often the case, to the lower buds of the previous summer growth. They then become nearly herbaceous shrubs. The point raised in this particular instance shows in one direction the extreme difficulty there is in determining the nature of strictly herbaceous plants on the exhibition table, whilst the interesting case which arose at the recent Chiswick Conference, when collections of hardy flowers were disqualified because they included bulbous flowers, which were not recognised by the judges as hardy perennials, shows in another direction how great is the need for some clear and authoritative definition of what are hardy perennials, what are hardy herbaceous plants, and what are not. The decision of the judges at Chiswick gave rise to much adverse comments, chiefly perhaps because the grounds of their decision were not understood. I take it that they regard bulbs as of annual production root and plant, and therefore whilst still reproducing their kind annually are yet not perennial strictly. At many exhibitions the rule has been to allow almost anything to be shown under the term hardy flowers, and this laxity of interpretation leads to the making of numerous mistakes. *A. D.*

BLUE MICHAELMAS DAISIES.—The Michaelmas Daisies never in this garden approached the colour of true blue so nearly as they have done since the clear frosts and sunny days of last week. I send a few gathered this morning, November 2. They belong to the section known as *Aster novi-belgii*. Asa Gray describes several of these as having rays of "bright blue;" and in their own country, where they are sure of fine frosts during their flowering season, no doubt a better colour is usual than in England, where the first frosts are likely to find them drenched with rain. But most gardeners must have noticed that cold nights always improve the colour of all Michaelmas Daisies. *C. Wolley Dod, Edge Hall.*

RHUS TOXICODENDRON.—*Apropos* of the recent observations contained in your columns pertaining to antidotes of the poisonous properties of this plant it would be interesting to learn, if the common potash-soap alluded to by your American correspondent, has also proved an efficacious antidote in cases of eczema caused by the handling of *Primula obconica* plants and flowers. The writer is cognisant of cases that have successfully been treated by the application of a solution of Fir-tree Oil and warm water to the affected parts, also by a like application of Condy's Fluid. *W. G., Harborne.* [Take care that the skin is not broken before you try such experiments. Ed.]

POTATOS.—As usual, the *Magnum Bonum* has proved our sheet-anchor, inasmuch as the crop of it has turned out far larger and sounder than that of any other variety of Potato grown by us, most other sorts having been badly diseased when taken up, and the disease has spread greatly in the tubers of some varieties since that time. The American varieties are, as usual, the worst this year, *Beauty of Hebron* being very bad, and fully one-third have rotted, decay having set in. *Imperator* is generally good in the field, but they are coarse and rough, owing to the excessive wetness of the season. Potatoes were cheap at one time, owing to the markets being glutted; but I am of opinion that higher prices will rule for sound lots long before the winter is over. *J. Sheppard, Woolverstone Park.*

THE EDUCATION OF GARDENERS.—I should like to say a few words on this subject, which is one of importance to us all, at the same time I fear that a thorough practical and scientific education in horticulture avails little towards a man's future success and eminence, if he do not possess influential friends who are willing to afford him their assistance. Remember, gardeners' situations at the present time are not got by merit, but by favour, by having useful friends and recommendations; it matters little as to capability. I can give several instances of uneducated and ignorant men, who can scarcely read, much less write, holding situations where three and four men are kept. Their practical experience will not cover more than five years, and these situations have been obtained for them by their friends, to the exclusion of educated and much more experienced men. It is to be regretted that such a state of things should exist; but undoubtedly it is sometimes true. I am at present contemplating leaving the profession for one which will pay me better, though my experience extends over fifteen years amongst Vines, Figs, Pines, Peaches, Orchids, stove and greenhouse plants, kitchen, fruit, and flower gardens. Referring

to the scientific portion, I have attended classes and privately studied botany, agriculture, meteorology, chemistry, geometry, mensuration, surveying, and levelling. I have written and read essays upon various branches of gardening before gardeners' and mutual improvement associations. I have also contributed articles to several gardening periodicals, given public lectures upon horticultural subjects, illustrated by the magic lantern, the slides of which I carefully prepared myself. My moral character is all that one could desire, yet, for the want of influential friends, my labours to obtain knowledge and gain an honourable position in the gardening world are frustrated—to live in oblivion seems my doom. When advertising for a situation, the following is a copy of a letter one often gets. This one I have received myself:—"Mr. — is in want of a gardener, married, but with no family. The gardener is required to clean boots and knives, and make himself generally useful. There is a kitchen and flower garden, but only one small greenhouse. The gardener's wife is expected to clean the church, the gardener lighting the stove. The man must have a thorough knowledge of gardening. Wages, £1 per week, and a house. If this suits the advertiser, send references to last employer." Brethren in the profession, I ask you, what encouragement is there for a young man? I encourage education on every hand, for it will ultimately place things on a better footing. I said, "Leave the profession for a more lucrative one." Well, one who cannot make £1 per week is doing poorly; in fact, I see it made with illiterate and easy-going fellows, who are not required to work like gardeners, much less having the responsibilities. Let us labour and wait till the tide turns. *Hopeful.*

FLAVOUR IN PEARS.—The flavour of Pears this season is not so good as usual, even in the best varieties. This points to a moist cool summer, which is never favourable to developing flavour, and in localities naturally damp, the want of flavour will be worse than on high and dry soils. We have some trees which stand on land 25 feet higher than others, and from these trees our finest flavoured Pears this season have been gathered. The general lateness of ripening will be an advantage, by prolonging the season of the Pear, and where the fruits have been carefully gathered and stored, they will keep well. One often wonders why it is that so very few of our finest-looking Pears are met with elsewhere than on the exhibition table; there must be something wrong with the flavour of these varieties, their fertility is not sufficient to merit their being planted extensively, for of what use is a fine looking fruit if it be not good eating? I for one would not cumber the ground with them. I inquired at a show this year what the merits of certain fruits were, and the reply was that the varieties were not of much good for table use but they were fit for exhibiting, the flavour being poor. Mere size should not count for much in a dessert Pear, but this is lost sight of by some judges, who do not, as a rule, ascertain the merits or otherwise of the varieties shown. I should say, for instance, that a dish of fine Winter Nelis Pears was a long way ahead of one of General Toddleben, and a dish of Comte de Lamy to be preferred to one of Doyenné Boussoch. These are but a few instances out of many which I might cite. I know that soils affect the quality of Pears, but speaking generally and from experience, if a fruit-grower be asked to supply a dozen good Pears, he would not include either of those I have condemned. *Wiltshireman.*

CERTIFICATES AT THE R.H.S.—"We print this letter as expressing the opinion of many at a distance." These words (editorial remarks) at finale of article headed "The Orchid Committee," at p. 557, in a recent issue, express (as I know from practical experience) the exact opinion of many provincial "heads" throughout the kingdom—who rightly or wrongly strenuously adhere to the principle that certain of their metropolitan brethren are unduly favoured, not only in the granting of Orchid certificates, but for horticultural produce generally. If this sentiment is wrong, it will be found well worth the while of the Royal Horticultural Society to reply to "Justitia's" complaint, and explain away this impression. For that such exists—and strongly too—one has only to travel throughout the provinces to perceive how fixed a hold it has in the minds of the provincial horticultural community. Another impression is, that certain houses or firms can positively secure a certificate for almost "anything." Now as one who has seen the "inner workings" of houses who are looked upon as belonging to that "charmed circle,"

and others who are "not," the writer has to admit (without the slightest prejudice) that the "success" of the one, and the "non-success" of the other in the question of securing "certificates" has often appeared "passing strange." Surely, for the benefit of the horticultural world, this impression—if wrong—can be removed. *Pioneer.* [It can only be removed by the objectors coming and judging for themselves and not trusting to rumour. Ed.]

THE INTERNATIONAL FRUIT SHOW AND THE FRUITERERS' COMPANY.—All that you say about the Fruiterers' Company and the Horticultural Society is very true. What it means is this:—All that has hitherto been done in the way of studying fruit and fruit-culture has been done by the Horticultural Society. A very great deal more work has to be done yet, before we really know anything of many kinds that are grown in various parts of England, and of the comparative merits of these and of well-known kinds in different parts of England, and in different soils. The Horticultural Society is the only body that could undertake this work, and I have always hoped that as the Society got into a better position, and with the help of all who were interested in fruit culture, both by finding it funds, which were much needed for the purpose, and also by personal co-operation, it would undertake this. No doubt, the Fruiterers' Company was not intended to be set up in opposition to the Horticultural Society, but the effect of it is to withdraw from the Society the support which it needed to carry on its work, and practically to make all useful work in the matter of fruit-growing impossible, and to fritter it all away in show and sham and talk. The Company knows nothing of the different qualities of fruits in different soils and different parts of England; they do not



FIG. 83.—NEW VERBENA: UPRIGHT HABIT, BLOOD-RED COLOR.

propose to themselves to learn this, and if they did so, they could not do it; and if they do talk people into planting fruit trees without knowing this, two-thirds of it will end in failure and disappointment, and they will have done more harm than good. An international fruit show can teach us nothing that we do not know already. I consider, therefore, that the Fruiterers' Company has made it useless to think of doing any good in the matter of fruit-growing. It has practically made it impossible for the Fruit Committee of the Society to carry out any intelligent scheme of fruit culture, and I have therefore ceased to take any interest in the matter. I do not suppose that I shall ever go again to the Fruit Committee, and, of course, I am not likely to have anything to do with the Fruiterers' Company. *C. W. Strickland, Hildenley, Malton.*

CONTINENTAL NOVELTIES.

VERBENA HYBRIDA ERECTA COMPACTA ATROSANGUINEA.

This is alleged to be the finest, most erect, and compact-growing Verbena in cultivation [with such an array of names it ought to be. Ed.]. It was raised and introduced a few years since by Messrs. C. Platz & Son, seed growers, at Erfurt, Germany. Until the past year, there only have been introduced three colours of this type—carminea, coccinea, and violacea—which still retain their true character when grown from seed. The advantages of this new type are, that the branches and spikes are arranged round the principal stalk in a strictly upright position, therefore they require no pegging down. In this year Messrs. C. Platz & Son have been so successful as to

add to the above-mentioned three colours a fourth—atrosanguinea. This novelty, with its fine compact and erect-growing habit, is with its velvet-like dark blood-red colour certainly a fine variety. Moreover, a fact of importance is, that this new variety is nearly constant when grown from seed, only a few are running back to scarlet. *Erfurt.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 10.—Present: Dr. W. T. T. Dyer, in the chair; Dr. Masters, Dr. Muller, Mr. McLachlan, Mr. Morris, Dr. Russell, Rev. W. Wilks, Mr. Lynch, Mr. Blandford, Professor Church, Dr. Bonavia, Mr. Michael, Mr. Pascoe, and Rev. G. Henslow, Hon. Sec.

Pear Spot.—The disease upon Pears brought to the last meeting proved to be due to *Fusicladium dendriticum*, Walt., a common parasite.

Hunting Spider.—With reference to this insect, referred to at the last meeting, Mr. Morris observed that it proves to be very widely distributed. The male appears to be most commonly seen; he had observed it at the gardens of Sir J. Llewellyn at Penllergare.

Wallflowers with Clubbed Roots.—Mr. Lister, to whom the specimens were sent from the last meeting, reports as follows:—"I have not studied the life-history of *Plasmodiophora Brassicæ* sufficiently to speak with entire confidence with regard to the disease which has attacked the roots of the Wallflowers; but I think there can be little doubt that they are affected by the same parasite as causes the clubbing of Cabbage roots. I enclose a drawing from a section of one of the roots, from which it will be seen that one half has not been attacked, while the other half is much swollen by abnormal growth of all the parts. The cells are larger and rounder than in the sound portion, and among them are vast numbers of large chambers formed by the breaking down of cell walls, and these are filled with the spores of the *Plasmodiophora*. They are most abundant in the cortex, though both the phloem and the outer part of the xylem are largely affected. The organism would seem to be in the condition described by Zopf, where all the plasmodium (if that word can properly be used in this case) has changed to spores, which would escape when the diseased root rotted away. *Plasmodiophora* is not included by De Bary with the eu-Mycetozoa, and Zopf places it with the Monadinæ.

Cunonia capensis.—Dr. Masters exhibited specimens showing interpetiolar stipules and glandular processes, apparently secreting a resinous matter. It was the only instance known in Saxifragaceæ, though similar facts were well known in Cinnabaceæ and Rubiaceæ.

Pinus halepensis.—A spray was received by Dr. Masters from Baron von Mueller, bearing both male and female flowers on the same shoot; the female flowers being in clusters instead of in pairs and arranged in the same series as the male catkins.

New Insect in St. Helena.—Mr. Morris read a communication from Mr. W. Grey Wilson, Governor, referring to some insects forwarded (in two stages), which he feared might prove dangerous. They were taken from a Rose bush, the branches of which were densely covered with a large white insect and a small red one. It appeared to resemble some species of *Leerya*. It was sent to Mr. Douglas for examination and report.

The Injury of London Fog to Plants.—Dr. Dyer called attention to some discrepancies between the published analyses of the deposits collected at Chelsea and Kew—more particularly in the hydrocarbons—given in Dr. Russell's paper in *Nature*, November 5, 1891 (s-e p 607). Thus, the hydrocarbons and organic bases are recorded as 12.3 and 2 per cent. respectively at Chelsea, whereas at Kew they were collectively only 4.8 per cent. Similarly, the metallic and magnetic oxides of iron were 10.6 and 2.6 per cent., and mineral matter (chiefly silica and ferric oxide) was 31.2 per cent. at Chelsea. These taken collectively at Kew were 41.5 per cent. Dr. Muller did not attach very much importance to these differences, and Professor Church thought it would be desirable to differentiate more accurately between the silicates. The general opinion was, that it would be desirable to collect fresh deposits in the ensuing winter, and re-examine them.

Porana paniculata.—Mr. Lynch exhibited a spray of this plant of the order Convolvulaceæ, received from India through Dr. Bonavia, who described it in 1885 (*Gardeners' Chronicle*, vol. xxiii., N. S., p. 47). It was the first occasion of its flowering in England. The Committee complimented Mr. Lynch on its successful cultivation.

Ixodidae (Ticks) from Antigua.—Mr. Michael exhibited specimens taken from ponies, and received from Mr. C. A. Barber. They were two females of a *Hyalomma*, probably *H. dissimile*, Koch; which Koch described some thirty years ago from specimens taken in Mexico. The creatures are bred on plants and trees, and attach themselves to passing animals, being then quite small; the male remains so, but the female sucks the blood of the animal and becomes enormously distended. They anchor themselves by their rostra, which are provided with recurved hooks; the Ixodes can then withdraw the rostrum, and being full-fed, drops off, matures and lays its eggs on the plants. The specimens sent had sucked and were much distended, but had evidently withdrawn their rostra, as these organs were perfect, whereas the claws with which they were holding on were all torn off.

Specimen of Agaricus melleus attached to its mycelium (Rhizomorpha).—Mr. Mowright forwarded specimens, with the following communication:—"It is not very long since our British mycologists ridiculed the idea that *Agaricus melleus* was a parasitic fungus, capable of destroying living trees. For many years the heterocœous-like history of *Puccinia graminis* was similarly scouted as absurd. This, however, is now a thing of the past. In the specimen of *A. melleus* sent herewith, a group of young specimens are seen *in situ* attached to the well-developed rhizomorphoid mycelium. The specimen was removed from an Ash tree in the park of Hammond Lodge, Terrington, St. Clements, in the month of October last. Such specimens are not easy to preserve; but in the present case this has been accomplished fairly well. The group of Agarics, which were quite young, had just emerged through the bark of the tree; by carefully cutting away the bark the mycelium was brought into view between the bark and the wood. A piece of the mycelium, 3 or 4 inches square, was removed with the Agarics *in situ*. Attached to the under side of the mycelium will be observed two fragments of the wood (Ash) already decayed by the subtle agency of the mycelium."

Agaricus squarrosus, a true Root Parasite.—"The parasitic nature of *Agaricus squarrosus* is as well marked as that of *A. melleus*, although this feature in the life-history of the fungus has not hitherto, to my knowledge, been pointed out. It attacks Beech, Apple, and Ash trees. The specimens sent herewith were obtained from an Ash tree near King's Lynn. The tree is a fine well-grown specimen, growing on the roadside. Last October I observed clusters of *A. squarrosus* growing out of the ground a couple of feet from the stem. On carefully removing the turf, I was able to trace the base of the stems of the Agaric attached to a compacted mass of white mycelium, earth, and small stones to one of the main roots of the tree. It will be observed that a portion of the woody tissues of the root permeated by white mycelial hyphæ is still attached to the basis of the stems of the cluster of the Agarics. Having watched trees attacked by this parasite for some years, it appears that its destructive influence upon the tree it attacks is not nearly so rapid as that of *Agaricus melleus*. This is accounted for by the fact that the mycelium of *A. squarrosus* is not nearly so well developed a structure as that of *A. melleus*. The hyphæ are not compacted into such thick cord-like structures; still, however, a tree once attacked by *A. squarrosus* is practically doomed. This fungus is very destructive to the Apple trees in the orchards of Herefordshire, where it is a well-known pest. It very probably attacks other deciduous trees, but the three above-named are the only ones upon which I have observed it growing as a parasite."

Dr. Dyer observed that *A. melleus* is now well known as doing serious mischief through its parasitic habit, and mentioned that where roots are exposed and subject to abrasion by cartwheels or otherwise, the Agaric is known to attack the decorticated place.

YEOVIL CHRYSANTHEMUM SHOW.

NOVEMBER 10.—On the above date the Yeovil Chrysanthemum Society held its annual exhibition in the Town Hall, and it was in every respect the best show yet held in Yeovil.

Groups were a strong feature. Mr. Crossman, gr. to J. Brutton, Esq., Yeovil, was 1st, his plants being clothed with rich foliage and large flowers. The 2nd and 3rd prizes went to Messrs. Gear and C. Anthony, both of Yeovil, for good groups. Out of three good groups of miscellaneous plants, Mr. Biss had the best.

Messrs. Crossman, Anthony, Gear, Allen, and Barrett were the most successful exhibitors of trained plants.

Table Plants were shown well by Mr. Gallop, gr. to H. N. Middleton, Esq., Bradford Peverell, Dorchester; Rev. M. Hankey, Maiden Newton; and Mr. W. E. Hall, East Coker, Yeovil.

Mr. C. Anthony had the best half dozen plants of double white Primulas, and Mr. Gillingham was 1st with six plants of the single-flowered variety. Mr. Felix Drake, East Coker, secured premier award for six well-grown Marie Louise Violets.

Cut Blooms were shown extensively and well; the principal class being that provided for twenty blooms. Mr. Copp, gr. to W. E. G. Erle-Drax, Esq., Holnest, Sherborne, secured premier position in a good competition; Mr. Lloyd, gr. to Vincent Stuckey, Esq., Langport, was a creditable 2nd; and Mr. Wilkins, gr. to Lady Theodora Guest, Inwood House, Henridge, 3rd. Mr. Lloyd was 1st in both classes for twelve incurved and a like number of Japanese.

Three collections of fruit were staged, Mr. Lloyd securing 1st place. The same exhibitor was 1st for two bunches of Black Alicante Grapes, and for two bunches of any other black, with large, well-coloured clusters of Gros Colmar. Mr. Gallop took 1st for two bunches of Muscat of Alexandria, and Mr. Wilkins took similar honours in the any other white class, with good bunches of Trebbiano.

Apples and Pears were well shown, Mr. Gallop being the principal prize-winner.

Several excellent collections of vegetables were staged in the amateurs', cottagers', and open classes. The most successful exhibitors in the open classes were Messrs. W. E. Hall, Crossman, Allen, and Copp. Two well-arranged collections of salading were put up by Messrs. Allen and Crossman.

Messrs. Robert Veitch & Son, Exeter, contributed sixty dishes of large, well-coloured Apples; Messrs. Jarman & Son, Chard, staged fifty dishes of good fruit; and Mr. Davis, Yeovil, twelve dishes of Pears and Apples.

KINGSTON AND SURBITON.

NOVEMBER 10, 11.—This old and popular show retains all its vitality and interest. The present exhibition is a fine one, nearly all classes well filled—some exceptionally well; and the general quality of the best. Not only is such the case, but there is a marked advance in the average quality of the exhibits, so that the judging was very arduous.

Miscellaneous Plant Groups were very pleasing, only needing a little more colour. The best of these came from Mr. G. J. Cook, gr. to J. G. Sassoon, Esq., Walton-on-Thames; Mr. Reeves, gr. to General Annersley, Otlands Park, and Mr. H. Farr, gr. to H. Speer, Esq., Thames Ditton, coming 2nd and 3rd.

Chrysanthemum Groups were a very fine feature, six being staged. All were good, but the 1st and 2nd were exceptionally so. The best was arranged by Mr. R. Mitchell, gr. to W. Cunard, Esq., Twickenham; Mr. Milham, gr. to A. T. Miller, Esq.,

Trained Plants.—These were excellent; the six from Mr. Sallowe, gr. to Miss Vaughan, Twickenham, were superbly flowered, and some 3½ feet across. The best sorts were white and pink Christine; Mrs. G. Rundie, and Mr. G. Glenn; and Catherine Wheel, Japanese. Mr. R. Cawte had the best three in Japanese, Mr. Reeves being 2nd. The best plants were Elaine, Val d'Andorre, Maiden's Blush, Madame Sévin, &c. Mr. Cawte had the best three standards, and Mr. Reeves the best specimen Pompon in Anemone Marie Stuart. Other Pompon plants were large, but not too well done. Chinese Primroses were numerous, Mr. J. Buss, gr. to A. W. Aston, Esq., Epsom, having the best six singles in capitally-flowered Princess of Wales, and Mr. Milham the best six Doubles, amongst which was a capitally bloomed Annie Hillier.

Table Plants were very numerous and of the usual kinds. Mr. Wilkins, gr. to J. N. Pearson, Esq., Kingston, had the best nine; and Mr. Sage, Ham House Gardens, the 2nd best. Mr. Portbury had the best six berried plants, in red Capsicums; and Mr. Sage was the only exhibitor of Bouvardias, fairly well-flowered plants of Alfred Neuner.

The Challenge Vase.—The competition for this handsome trophy invariably elicits great interest

and keen competition. This time there were six lots of forty-eight blooms, twenty-four incurved, and twenty-four Japanese, staged. The Cup, won last year for the first time by Mr. Bryant, Juniper Hill, Dorking, is really a handsome silver bowl, costing some £27—a splendid prize. On this occasion it fell to Major Collis Browne, of Byfleet, whose gardener, Mr. Carpenter, put up some really high-class flowers. This competitor has ascended the ladder from fourth only four years since to the 1st place now. Mr. Mease, gr. to A. Tate, Esq., Leatherhead, was 2nd.

The class for twenty-four incurved blooms was a large one, the finest lots coming from Mr. W. Mease—capital flowers; Mr. C. Beckett was 2nd;

In the class for twelve blooms, Mr. Felgate, gr. to the Duchess of Wellington, Walton, put up some splendid flowers, really of first class quality; and Mr.

The best six incurved came from Mr. Hopkins, gr. to T. Wooderspoon, Esq., Walton; and Mr. Carpenter had in splendid blooms of Violet Tomlin, the best six of any one variety, the 2nd best being Lord Alcester, and the 3rd Empress of India.

Japanese blooms were very beautiful, the best twenty-four coming from a notable grower, Mr. Trinder, gr. to Mr. Henry Mildmay, Dogmersfield Park, Winchfield; Mr. R. Cawte and Mr. W. Mease had the next best lots. Mr. Felgate was 1st with twelve blooms; Mr. Milham was 2nd. Mr. Quarterman, gr. to C. E. Smith, Esq., Cobham, had the best six blooms, and of one variety the best were capitally coloured Etoile d'Yvon, from Mr. Felgate; E. Molyneux, from Mr. Carpenter, being 2nd. Mr. G. Woodgate, the secretary, gr. to Lady Wolverton, Coombe Warren, was a good 1st, with twelve Pompons, in bunches of three blooms; he was also 1st for twelve Anemone Pompons, of reflexed flowers. Very fine indeed were the blooms from Mr. Carpenter. Mr. R. Cawte was 2nd. Of large Anemones, the best twelve came from Mr. R. Cawte, Mr. Woodgate being 2nd.

Some special classes of a mixed character brought strong competition. For Messrs. J. Laing & Son's prizes for twelve Japanese and twelve incurved blooms, a beautiful lot of flowers was staged. Mr. R. Cawte, Mr. Woodgate, and Mr. Coombs taking the prizes in that order.

In the class for six Japanese, six incurved, and six Anemone—the prizes given by Major Collis Browne, Mr. Cawte was again 1st.

In a further class for six Japanese, six incurved, and six reflexed—the prizes given by Mr. Sissons Hyde, Mr. W. Mease was 1st.

There were numerous local classes, also various epergues, bouquets, and similar decorations.

Fruit was excellent. Mr. C. Griffin, gr. to the Misses Christy, Coombe Bank, had in Muscat of Alexandria the best white Grapes, and in Alicante the best black.

[Fruit was extensively shown, but exigencies of space forbid our mentioning more than the names of the successful exhibitors, viz.:—Mr. Mease, Mr. C. J. Waite, Mr. Tubbs, Mr. Miller, and Mr. Taylor.]

THE KENT COUNTY SHOW OF FARM FRUITS.

NOVEMBER 10, 11.—This Society held its third annual exhibition of hardy fruits in the Corn Exchange, Maidstone, on the above date, and the exhibits were of a high-class nature, Apples and Pears being specially good.

The only class open to landowners or their gardeners, nurserymen, &c., was one for twenty dishes of fruit, open-air grown. Roger Leigh, Esq., Barham Court (gr. Mr. Woodward), easily secured the premier position, every fruit being without spot or blemish; Mr. Thomas, Sittingbourne, was placed 2nd, with a remarkably clean lot; and Lady Fletcher, The Kenwards, Yalding (gr. Mr. Smith), took the 3rd position, his best dishes being of Pears.

The class for twelve dishes, farm-grown, each dish to consist of twelve fruits, distinct, brought out a fine display. The 1st prize was easily won by Mrs. Fremlin, Teston, with a most meritorious collection; Mr. Goodwin, Mereworth, took the 2nd position, with highly-coloured fruits; and Mr. Thomas was 3rd.

For dessert Apples, one sieve, Mr. Thomas was well to the fore, showing fine Cox's Orange; 2nd, Mr. Manwaring, Brenchley; 3rd and 4th, Mrs. Fremlin and Fearon, Mereworth. For cooking Apples, Mr. G. Chambers, 1st; Mr. Goodwin, 2nd; Messrs. Warde and Fearon following respectively.

Dessert Apples, four quarters, Mr. Goodwin was 1st; 2nd, Mr. Thomas; 3rd and 4th, Mrs. Farmer, Leeds, and Mr. Fearon. Two ditto, Mr. Fearon

took the lead; 2nd, Mr. Blest, Wateringbury; 3rd, Mr. Bryan, Mereworth.

For four quarter-sieves cooking Apples, 1st, Mr. Levey, West Farleigh; 2nd, Mrs. Fremlin; 3rd, Mrs. Farmer. Two ditto, Mr. Warde, Farleigh, secured 1st prize, with capital fruits; 2nd and 3rd, Messrs. Fearon and Bryan respectively.

Pears, two quarters, Mr. Blest, Wateringbury, 1st, showing very large Pitmaston Duchess and Marie Louise; 2nd, Mr. Goodwin; 3rd, Mr. Thomas.

For a collection other than specified in the schedule, there was only one competitor, whose exhibit was not of sufficient merit to deserve the 1st prize, and was awarded the 2nd.

In the class for dried fruit, there was ample room for improvement; and, it is to be hoped, another year these two classes will be better represented.

TORQUAY.

NOVEMBER 11.—A capital show was that held by the Torquay Horticultural Society in the Bath Saloon, which site affords plenty of space for the disposal of the exhibits, and plenty of room for visitors. The groups of Chrysanthemums were arranged in circles and squares on the floor of the large hall, and groups of miscellaneous plants around the sides, making a pleasing effect. The cut blooms were placed on tables in rows in another room, relieved with small plants between the rows of boxes. Fruit and vegetables required still another room, so numerously were they shown.

Cut blooms formed the most important part of the exhibition, and were staged not only in large numbers, but of good quality. The principal class was that for thirty-six, distinct, for which five competed, the 1st prize being a Silver Cup, which was easily won by Mr. G. Foster, gr. to H. Hammond Spencer, Esq., Glandaragh, Teignmouth. The best blooms were Mr. S. Coleman, Jeanne d'Arc, Lord Leicester, Golden Empress, Princess of Wales, and Violet Tomlin in the incurved section; Mr. W. Cole, William Lane, Puritan, Stanstead White, Sun-flower, and Louis Behmer among the Japanese. Mr. J. Stiles, gr. to Miss Fripp, the Grove, Teignmouth, was 2nd, showing good blooms.

For twelve incurved, the last-named won premier honours, with even blooms; 2nd, Mr. A. Searle, gr. to J. N. Whitehead, Esq., Torquay, who also secured the leading award for twelve Japanese, with massive examples.

The best six large Anemone blooms (Japanese excluded) was well won by Mr. Foster; Mr. Searle following. For six Japanese Anemones, Mr. Searle won; Mr. W. H. Veale, gr. to the Rev. A. H. Sims, Wolborough Rectory, 2nd.

Mr. J. Stiles had the best six reflexed, distinct; and for six of one variety, the same section, Mr. Stiles also won with wonderfully fresh blooms of Cullingfordii. Mr. Foster, with extremely fine blooms of Mrs. Judge Benedict, secured premier position for six any Anemone variety; Mr. Stiles following.

For six incurved, one variety, Mr. Foster was 1st, with full-developed Empress of India, Mr. Searle 2nd. The same exhibitors occupied similar positions for six blooms of any white Japanese, with good examples of Stanstead White; Mr. Searle, 2nd, with Avalanche.

With good blooms of Boule d'Or, Mr. Searle took 1st for six yellow, any variety; Mr. Foster, 2nd, with W. H. Lincoln. With very fine Etoile de Lyon, Mr. Foster won 1st, for any one variety; Mr. Searle 2nd. Mr. Stiles, with same variety, took 1st for twelve of any Japanese variety. The premier incurved bloom was a very shapely one of Mrs. S. Coleman in Mr. Foster's stand. Mons. Bernard, in Mr. J. Stile's stand, was awarded a similar position in the Japanese class.

Groups were a capital feature of the show. For plants arranged in a circle of 8-feet diameter, in not less than eighteen varieties, Mr. A. Searle was a good 1st. Mr. J. Hunt, gr. to P. B. Drinkwater, Esq., Lyncombe, Torquay, 2nd. Mr. W. Satterly, gr. to Mrs. Matthews, Braddon Villa, Torquay, won leading honours with a smaller group; 2nd, Mr. Ferris, gr. to J. W. Kimber, Esq., Tracy, Cockington.

For a collection of miscellaneous plants, arranged for effect, Mr. J. Slowman, gr. to Captain Fane Tucker, Braddon Tor, Torquay, with a pleasing display; Mr. W. Satterly was 2nd. Specimen plants were rather poor.

Orchids were well shown. In the class for three, Mr. G. Lee, gr. to W. Lavers, Esq., Upton Leigh, Torquay, was 1st, staging Oncidium ornithorynchum, Cypripedium Harrisianum, and Miltonia candida;

Mr. G. Medland, gr. to M. Sparke, Esq., Rooklands, Torquay, 2nd. The best specimen Orchid was a well flowered one of Cymbidium giganteum superbum; Mr. Medland 2nd, with a good specimen of Cypripedium Spicerianum.

Groups of plants "not for competition" were contributed by Messrs. Horn & Sons, St. Mary's Church, Torquay; Messrs. T. Allward & Son, Braddon's Hill, Torquay; Messrs. Curtis & Sandford, Devon Nurseries, Torquay; and Mr. W. B. Small, Torquay, which assisted much in adorning the sides of the large ball.

Messrs. Veitch & Son, Exeter, staged a very fine collection of Apples, such sorts as Lord Derby, The Queen, Alexander, and Mère de Ménage.

READING, CHRYSANTHEMUM, FRUIT, &c.

NOVEMBER 11.—Groups of Chrysanthemums made a grand display at this show, being arranged around the smaller hall. They were, however, too much crowded together to give the best effect, a little more room between each one would have been a decided improvement. Mr. Booker, gr. to B. Monck, Esq., Coley Park, was 1st, his flowers being extra fine blooms; 2nd, Mr. Knowles, gr. to W. Crisp, Esq., Henley, who came up extremely close to his more fortunate competitor, having better varieties in colour; Mr. Turton, Maiden Erleigh, was a good 3rd, he had Louis Behmer in better condition as to colouring than it is often seen.

In the smaller group class, the best came from Mr. Smith, gr. to Miss Russell, Lothair, who staged well-grown plants.

Specimen plants were very well done, the most prominent being the standards, which are always a feature at Reading. Mr. Surnam, gr. to M. H. Best, Esq., Donnington, was 1st, with plants in profuse flower. Mr. Booker was 2nd, with some good plants; two well-bloomed Anemone-flowered varieties gave this exhibit a novelty.

Bush-grown plants were much the best from Mr. Frost, gr. to Walter Palmer, Esq., Westfield. These were not of too formal a character. The best Pompons came from Mr. Richards, gr. to Rev. R. McDonald, Ascot. The plants were also freely grown, the best style for the section.

Cut flowers were quite up to the standard of the season. Mr. Neville, gr. to F. W. Flight, Esq., Twyford, was a good 1st for eighteen incurved varieties. The blooms were even, of good colour, fine in size, and fresh. Mr. Lane, gr. to Miss Smith, Ascot, came in an excellent 2nd. With twelve incurved varieties, Mr. Walker, Thame, proved victorious; Mr. Allen, gr. to Sir G. Russell, Bart., Swallowfield, also showing well.

The best twelve reflexed were from Mr. Popple, gr. to Sir A. Stepney, Bart., Ascot, with very superior blooms; Mr. Richards being 2nd. For eighteen Japanese, Mr. Lane was to the front in a strong class, Mr. Neville following; in both cases the blooms were large and fresh. With twelve reflexed Japanese, Mr. Richards came well to the front, Mr. Walker being 2nd, and for twelve incurved Japanese, the 1st prize went to Mr. Ashman, gr. to C. D. Crews, Esq., Billingbear, and the 2nd to Mr. Lane.

The class for cut blooms, with at least 8 inches of stem above the boards, was a strong one, ten exhibits, being better filled than most classes. Mr. Hughes, gr. to H. F. de Paravicini, Esq., was 1st, the blooms standing up well, with healthy foliage below them; Mr. Knowles, gr. to W. F. Crisp, Esq., Henley, had also some very fine incurved blooms in the 2nd prize stand. The best cut Pompons were large bunches from Mr. Surnam. For twelve Anemone-flowered, Mr. Richards was 1st, with two varieties only; the 2nd prize stand having a much better selection—these were from Mr. Turton.

Of new varieties, Mr. Owen, of Maidenhead, showed Lakine, pale blush incurved, with broad petals; M. Bredemier, rosy-purple Japanese; Mrs. Robinson King, a sport from Golden Empress, with the colour of Jardin des Plantes; Excelsior, an English seedling Japanese, with flowers of a purplish-rose; W. Tucker was again shown—it promises well; and G. C. Schwabe, a Japanese, with pale chestnut-coloured flowers, is a distinct addition—the height of the plant 3 to 4 feet.

Vase arrangements of Chrysanthemums by themselves, and others with mixed assortments of flowers, were an attractive feature. Mr. Booker, Mr. Frost, and Mr. Turton were 1st prize winners for Chrysanthemums, whilst in the other classes Miss Phillips and Mr. Abery, Tilehurst, were the most successful. Several classæ are provided at this show for mis-

cellaneous decorative plants in season, many well-grown examples being shown of such as Bouvardias, Primulas, table plants, and Orchids.

Fruit was shown well, and in abundance. For a collection of six dishes, Mr. Maxim, gr. at Uckfield Place, was a good 1st, with well-finished Grapes, a Melon, Durandean Pears, and King of the Pippin Apples. With six dishes of dessert Apples, Mr. Turton was 1st, with fruit of superior quality. For six culinary Apples, Mr. Irvine, gr. to H. Akroyd, Esq., Shiplake, was 1st, with extra fine fruit.

Pears were shown well. Mr. Turton winning with Doyenné du Comice, and Marie Louise, extra good; Mr. Maxim being 2nd. The latter exhibitor was also one of the most successful in the Grape classes. The finest Muscats, well coloured, and as well kept, were shown by Mr. Pound, gr. to Alfred Sutton, Esq., Greenlands.

SWANSEA AND DISTRICT.

NOVEMBER 11, 12.—The second annual exhibition of the Society was held in the Albert Hall, Swansea. The principal prize for forty-eight blooms was awarded to Sir Charles Phillips (gr., Mr. Dumble), for a fine collection, he being closely followed by Sir Henry Vivian (gr., Mr. Ireland).

In the class for thirty-six blooms, Mr. Dumble again took 1st place, being closely followed by Colonel Wright and Mr. Muir Margam, all showing remarkably well. For twenty-four blooms, Mr. Ireland was placed 1st, his incurved blooms being very good; Miss Talbot (gr., Mr. Milner) being 2nd. In the class for twelve Japanese, Mr. Milner was placed 1st; and for twelve incurved, distinct varieties, Mr. Ireland was 1st, with large, solid blooms.

For the best incurved blooms in the show, Mr. Dumble was 1st, with a magnificent bloom of Jeanne d'Arc; and the best Japanese blooms were found in the 1st prize stand of Miss Talbot, in a grand bloom of Avalanche.

Groups were well competed for, the 1st prize going to Sir Henry Vivian. For six specimen plants, distinct, Sir Henry Vivian was again 1st, and also in the class for three specimens, showing in each class well-grown plants.

Special.—The Silver Cup given by M. Evans, Esq., for the best six specimen plants of white Chrysanthemums was won by his own gardener, Mr. Hammond.

For black Grapes, A. Gilbertson, Esq., was placed 1st; and Sir Henry Vivian took 1st for good bunches of Muscat of Alexandria.

Vegetables were also well shown.

BOURNEMOUTH.

NOVEMBER 11, 12.—The Bournemouth and District Chrysanthemum Society held its annual exhibition at the Hotel Mont Doré Winter Gardens on the above-mentioned dates.

Groups made a grand display, the 1st prize being taken by Messrs. G. Watts & Sons, Bournemouth; Mr. T. H. Crisp, gr. to Lord Wimborne, Canford Manor, Wimborne, and Mr. T. K. Ingram, Parkstone and Bournemouth, were placed equal 2nd, for capitally-grown and well-arranged plants. Other groups were good.

Cut Blooms.—These were well shown, the chief prize going to Mr. Garner, gr. to Mrs. Braddyll, Amberwood, Christchurch. Mr. G. W. Taylor, gr. to T. P. Elphinstone, Esq., Christchurch, had the best stand of twelve Japanese distinct; and Mr. Garner had the best stand of incurved. Messrs. D. Stewart & Sons, Bournemouth, staged the best twelve blooms of reflex varieties, and Mr. C. Phillips, gr. to T. J. Hankinson, Esq., Bournemouth, had the best stand of Anemones.

Fruit and vegetables were plentifully shown in good condition.

EDINBURGH BOTANICAL.

NOVEMBER 12.—The first meeting of this Society was held at 5, St. Andrew Square; Mr. Lindsay, the retiring President, occupied the chair. A large spadix of *Ptychosperma elegans*, with ripe fruit from a tree over 50 feet high, was exhibited from the Royal Botanic Garden, from which were also shown a collection of New Zealand Veronicas, a large plant of *Saxifraga longifolia vera*, &c. Mr. Campbell, Ledaig, sent flowers of *Escallonia macrantha*, *Veronica speciosa* var., and *Passiflora Constance* Elliott from the open air.

Mr. Lindsay, in his presidential address, dealt with "New Zealand Veronicas," giving a short

description of those species at present in cultivation, and describing the various uses to which they are best adapted for garden purposes. He divided them into three groups, hardy, half-hardy, and tender. All the species found in a wild state at altitudes above 3000 feet proved to be thoroughly hardy in cultivation. Those species found at altitudes below 2500 feet to 1000 feet were found to be half-hardy; the tender species came chiefly from districts near the sea coast. There are over sixty species natives of New Zealand, forty of which are at present in cultivation in the Royal Botanic Garden, Edinburgh. Mr. Lindsay pointed out how good results might be obtained by selection, and by hybridising the tender with the hardy species; and in concluding, indicated that there were several very fine species not yet introduced that would be great ornaments to our gardens, particularly *Veronica macrantha* and *V. Benthamii*.

Mr. Thomas Jamieson, F.I.C., Fordyce Lecturer on Agriculture, Aberdeen University, read a paper on the "Structure and Function of Root-hairs." In the course of his researches into the question of the use and mode of absorption by plants of phosphorus, he had been led to examine the evidence for the generally-accepted doctrine that the wall of root-hairs is permeated by an acid which brings insoluble matter into solution for absorption into the root-hairs. He maintained that this acidity may be accounted by decomposition, and the dissolving action of the root-hair seems to be little more than an assumption rendered necessary as an explanation of the well-known fact that insoluble matter is assimilable by the plant. He then advanced the view that it is possible for solid particles to enter the root-hairs through the membrane of the hair, and he described the occurrence of a minute aperture he had discovered in the walls of root-hairs, through which particles he had found within the hair might have entered. The value of potash to roots would be explained by its facilitating the entrance of such solid particles, and similarly an explanation would be afforded of why crystalline particles are of less service than amorphous ones to root, and also of the fact that the degree of effectiveness of a phosphate corresponds with its state of division.

In the course of the discussion which ensued, Dr. Aitken doubted the possibility of accounting for the well-known acidity of roots by the loss of decomposition alone; and Professor Bayley Balfour stated several difficulties in the way of accepting the author's views, and pointed out the presence of the alleged aperture in the root-hairs might be proved or disproved by the differential staining of the inner and outer walls of the root-hairs.

Mr. Charles Howie noted a new station for *Epipactis latifolia* in the East of Fife.

Mr. Lindsay's Reports on Temperature and Vegetation in the Royal Botanic Garden, Edinburgh, during July, August, September, and October, 1891.—The month of July was, for the greater part, changeable and inclement. There was a very marked absence of real summer warmth. The lowest night temperature was 42°, which occurred on the 10th of the month, and the highest, 54°, on the 17th. The lowest day temperature was 63° on the 16th, and the highest, 79° on the 17th. Roses were unusually late, although late in commencing to flower. Herbaceous plants generally were also good. On the rock garden 252 species and well-marked varieties came into flower, as against 201 for the corresponding month last year. A few of the more interesting were:—*Aquilegia pyrenaica*, *Anomatheca cruenta*, *Astragalus alopecuroides*, *Calamittha patavina*, *Campanula Waldsteiniana*, *Dianthus neglectus*, *D. cyanobarbus*, *Cyananthus lobatus*, *Epilobium obcordatum*, *Eriogonum aureum*, *Gentiana septemfida*, *G. tibetica*, *Hypocnemis reptans*, *Gallium rubrum*, *Lunaria organifolia*, *Mimulus roseus*, *Palava flexuosa*, *Pentstemon speciosus*, *Potentilla lanuginosa*, *Saxifraga diversifolia*, *Senecio laxiflora*, *Swertia multicaulis*, *Veronica elliptica*, *V. Rakaiensis*, &c.

August was an exceedingly cold and wet month, no really warm days occurred, and altogether the month was a most unfavourable one. The lowest night temperature was 34°, which occurred on the 30th, and the highest 55°, on the 18th. The lowest day temperature was 59° on the 23rd, and the highest 77° on the 19th. Rain fell on twenty-three days. On the rock garden eighty-four species came into flower, as against eighty-one during last August. Amongst the most conspicuous were—*Cheiranthus Allioni*, *Carlina subcaulescens*, *Cyclamen hederifolium*, *Dalibarda repens*, *Dianthus Atkio-*

soni, *D. monspessulanus*, *Delphinium velutinum*, *Epilobium Fleischii*, *Gentiana arvernensis*, *Helleborus niger angustifolius*, *Lilium dalmaticum*, *L. auratum*, *Lobelia cardinalis*, *Mimulus cardinalis*, *Spiraea gigantea*, *Stobrea purpurea*, *Tricyrtis australis*, &c.

The month of September was very changeable and unsettled, with frequent storms of wind and rain, yet in some respects it was the best month of the season. More really fine and warm days occurred than in any of the three months previous. The severe storm of wind and rain which took place on the 21st, and which caused so much destruction throughout the country, passed over without doing any serious damage in the garden.

No frost occurred, and there was a fair amount of bright sunshine. Late-flowering herbaceous plants and annuals now reached their best; those which flowered earlier mostly produced good seed, a large supply of which have been obtained for distribution. The lowest night temperature was 38°, which occurred on the 21st of the month, and the highest 54°, on the 14th. The lowest day temperature was 49°, on the 21st; and the highest 58°, on the 12th. Rain fell on nineteen days.

On the rock garden, forty-one species came into flower, as against forty-seven for the corresponding month last year, amongst which were the following:—*Coreopsis verticillata*, *Gentiana alba*, *G. ornata*, *Gladiolus Saundersii*, *Crocus annulatus*, *C. imperati*, *C. pulchellus*, *C. speciosus*, *Colchicum maximum*, *Kniphofia uvaria*, *K. nobilis*, *Potentilla formosa*, *Senecio pulcher*, *Veronica Lindleyana*, *V. longifolia subsessilis*, *Lilium auratum macranthum*, &c.

The month of October was on the whole favourable. The first frost this season took place on the 18th of the month, when the glass registered 32°. The thermometer was at or below the freezing point on eight occasions, indicating collectively 20° of frost for the month. The lowest readings were on the 18th, 32°; 23rd, 32°; 25th, 27°; 29th, 26°; 30th, 29°; and 31st, 26°.

The lowest day reading was 45° on the 29th, and the highest 71° on the 5th. Dahlias and other tender plants were destroyed by frost on the 23rd. Deciduous trees and shrubs were late in shedding their leaves; autumn tints were most conspicuous on Scarlet and Hungarian Oaks, Tulip-tree, Beech, *Pavia flava*, *Amelanchier vulgaris*, *Azalea pontica*, and *Ampelopsis tricuspidata*. Amongst fruit-bearing trees or shrubs, the best set are, *Hollies*, *Cotoneasters*, and *Gaultherias*. Hardy *Rhododendrons* and *Azaleas* are fairly well set with flower-buds. On the rock-garden thirteen species came into flower during October as against twenty-three for October, 1890. Amongst those which flowered were *Crocus asturicus*, *C. Salzmanni*, *Erica ciliaris*, *Gentiana Kurrooa*, *Glycerium argenteum*, *Helleborus altifolius*, *Kniphofia Saundersii*, *Oxalis lobata*, *Saxifraga Fortunei*. The total number which have flowered since January 1, is 1210, during the same period last year 1154 had flowered.

Records of Temperature, Vegetation, &c., at the Botanic Garden, Glasgow, by Robert Bullen, Curator.—July, 1891.—This was the driest summer month experienced here since July, 1885, but the temperature was much higher this month. The readings on the shaded thermometer varied during the month from 63° to 76°, and on that in the sun from 75° to 101°. The lowest night temperature was 44°, and the highest 56°. Dull mornings were frequent, but generally followed by bright days—altogether a bright sunny month. Trees, shrubs, and various crops suffered much by lack of moisture, numerous *Pansies*, &c., died out in the open borders, but the various Californian annuals, and the usual assortment of bedding-out plants were very effective, the bright weather having brought out the natural brilliancy of their flowers. The lawns had a parched appearance.

August, 1891.—In striking contrast to last month, this was mostly cloudy and wet, the latter part unusually so, and the rains were often so heavy as to greatly discount the previous harvest prospects. At this time the prospect was further darkened by the rapid development of the Potato blight in many districts of the country, the meteorological conditions being highly favourable for its spread. Occasional bright days were recorded, and bright sunshine, but generally of short duration. The highest reading of the sun-thermometer was 90° on the 18th, but frequently the reading was below 80; the temperature in the shade was also low for the month. Half-hardy plants made good growth, and bloomed well until the stormy night of the 25th, which gave them a very tattered appearance.

September, 1891.—This was a rainy, stormy month, probably one of the wettest known in meteorological history. The storms and floods were most injurious to garden and farm crops of all descriptions, and over a large part of the country. In a few districts the harvest was fairly well gathered, but mostly the reverse was the case, and the Potato crop a comparative failure. Owing to the continued wet weather and immunity from frost, many hardy shrubs, both deciduous and evergreen, were still growing at the end of the month. *Rhododendron ponticum* and its progeny mostly made a second growth. All the tender, and some of the so-called hardy annuals, died an early death from cold and damp.

October, 1891.—A chilly, wet, and comparatively sunless month, the fine days recorded as such from beginning to end only count one week, the remainder being very unsettled. Floods and storms were frequent and severely felt; farm and garden land suffered much from the immense access of waters, apart from the crops that were either in or on the ground. It will make winter tillage on heavy land difficult. The only vegetation which has derived benefit by the deluge are those trees whose roots are deep. Grass continued to grow at the end of the month, and the fall of the leaf is this season much later than is usual here. A storm of great severity was experienced on the night of the 13th, leaving behind it much disaster. The day temperature was nearly normal, but the night temperature fell rapidly after the 22nd. The lowest reading was 6°, on the night of the 24th. Total frost, 17°, and thrice at freezing point.

ULSTER HORTICULTURAL.

NOVEMBER 12.—The third annual show in connection with this Society took place at Belfast on the above date in the new covered market, May Street. This show is devoted chiefly to *Chrysanthemums*, although the exhibits in fruit and vegetables and also flowers were very large. The entries this year were more than double those of the first show, and also a great improvement in quality.

The exhibition was opened by the Countess of Shaftesbury. The Mayor of Belfast (Mr. C. C. Connor), addressing the Countess of Shaftesbury, said the Ulster Horticultural Society had been established some little while ago for the purpose of encouraging the growth of flowers, fruit, and vegetables in Ulster. This was the first society of the kind established in the North of Ireland, and he was glad to say that its success hitherto had been very marked. They were particularly desirous of improving the quality of fruit, as it was apparent that in these days of depression in farming, fruit might prove a valuable source of profit to the producer.

The Mayor concluded by introducing Mr. Duon, gr. to the Duke of Buccleuch. Mr. Dunn then delivered a brief address on the cultivation of fruit.

WINCHESTER.

NOVEMBER 12, 13.—The Guildhall was the site chosen for the annual autumn exhibition in this ancient city, and it proved a great success.

In the class for the best arrangement of *Chrysanthemums* in a group, Mr. F. Smith, gr. to Lady E. Wodehouse, Mayfield, Winchester, occupied premier position; Mr. J. Wareham, gr. to Mrs. Gunner, Winchester, 2nd. Mr. E. Astridge, gr. to W. Barrow Simmonds, Esq., Abbots Barton, Winchester, had the best group of miscellaneous plants; and Mr. F. Moot, gr. to Mrs. C. Warren, Northlands, Winchester, was 2nd. Specimen *Chrysanthemum* plants were best shown by Mr. Kaines, Winchester.

Primulas were good at this show. Mr. G. Meldon, gr. to Miss Turner, Winchester, was an easy 1st. Table plants were well shown by Mr. J. Amis, gr. to the Hon. Mrs. Elliott York, Hamble Cliff, Netley.

Cut blooms were staged in fairly good numbers, and of excellent quality. For forty-eight in not less than thirty-six varieties, Messrs. W. & G. Drover, Fareham, secured 1st prize with well-finished blooms. Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was a creditable 2nd.

For twenty-four Japanese, Mr. Trinder, gr. to Sir H. Mildway, Bait., Dogmersfield Park, Winchester, was 1st; Mr. Neville, who staged smaller examples, being 2nd. In the class for twelve incurved distinct, Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rookesbury Park, Fareham, was 1st, with very neat blooms; Messrs. Drover were 2nd.

Mr. N. Molyneux was also 1st for twelve Japanese

and for twenty-four blooms any section. Mr. Budd, gr. to F. Dalgetty, Esq., Lockerby Hall, Romsey, and Mr. C. H. Holloway, gr. to F. W. C. Read, Esq., Down Grange, Basingstoke, took 2nd honours in the order given.

Two classes were confined to ladies only, namely, for the best-arranged stand of Chrysanthemums and other flowers, with foliage, grasses, &c.; and for another stand filled with cut hardy shrubs, Ferns, and grasses, grown out-of-doors. In the former, Miss Ladham won with a creditable display, Miss Nelly Owen, Basingstoke, being 2nd. In the latter class Miss Flight was an easy 1st, with a most effective arrangement; Miss Ladham being 2nd.

Fruit, although not large in quantity, was of excellent quality. For three distinct varieties of Grapes, Mr. Budd was 1st with good examples.

The best two bunches of black Grapes came from Mr. J. Gardner, gr. to Colonel Stratton Bates, Twyford.

White Grapes were moderately well shown by Mr. F. Farwell, gr. to F. Bowker, Esq., sen., Larkhills, Winchester.

Mr. Ams had the best three dishes of dessert Apples. Mr. Best, gr. to C. W. Chute, Esq., The Wyne, Basingstoke, had the best kitchen varieties; also the best vegetables in a strong entry.

Mr. Hillier, Winchester, staged, not for competition, three dozen dishes of Apples, leading varieties—good fruit.

TEDDINGTON.

NOVEMBER 12, 13.—A very neat exhibition was that held in the Town Hall, Teddington, on the above dates. Generally the classes were well filled, and the average quality for the class of show excellent. Only one group of a miscellaneous nature, Mr. Gregory, gr. to F. Weymouth, Esq., Teddington, being the exhibitor, was arranged. It was a very pretty one, set up with some small Orchids, Primulas, Cyclamens, and excellently coloured foliage plants.

Of Chrysanthemum plant groups, the best was placed by Mr. Mitchell, gr. to W. Cunard, Esq., Twickenham; Mr. Osborn, gr. to Mrs. Howard, Teddington Grove, was 2nd. Mr. Sallows, gr. to Miss Vaughan, Twickenham, had the best three trained plants in two classes. Chinese Primulas table plants, &c., were very good.

The Challenge Vase offered for twelve Japanese blooms and twelve incurved flowers, was won by Mr. Coombs, gr. to W. Furze, Esq., Teddington, who, having won it the previous year, now becomes its absolute owner. Mr. Higginson, gr. to General Vials, was 2nd. Mr. Coombs was also 1st with twenty incurved blooms, and the same for twenty Japanese; Mr. Davis, gr. to J. P. Chappell, Esq., Teddington, was 2nd. For twelve incurved blooms in the open class, Mr. Slade, gr. to Lady Bowater, Richmond Park, was 1st; Mr. Higginson being 2nd. Mr. Slade also had the best twelve Japanese; Mr. Osborne 2nd.

Mr. Coombs had the best twelve reflexed, and Mr. Clarke, gr. to A. Nagle, Esq., Surbiton, had the best twelve bunches of Pompons, and also of Anemone Pompons, all capital flowers.

In the open class, the best six incurved of one variety were from Mr. Coombs, very good Queen of England; Violet Tomlin, from Mr. Slade, being 2nd.

In the duplicate Japanese class, the best was Etoile de Lyon, very fine flowers, also from Mr. Coombs; Mr. Davis being 2nd with Madame C. Audiguier.

Numerous local and amateurs' classes were well filled.

Fruit was plentiful. The best collection of three dishes of good black Grapes, Apples, and Pears, came from Mr. Rickwood, gr. to Lady Freake, Fulwell. The best white Grapes, capital Muscat of Alexandria, were from Mr. Mitchell; and Mr. W. Tubbs, had the best black, in very good Gros Maroc.

Miss Pout, Teddington, had the best two dishes of Pears in Beurré Diel and B. Bachelier. Mr. Smith, gr. to H. D. Phillips, Esq., Hampton Wick, the best couple of dishes of dessert Apples, in Ribston and Cox's Orange Pippins, as also for the best kitchen kinds in Blenheim Pippin, and Mère de Ménage.

Mr. Stroud, the Police Orphanage, Twickenham, had the best collection of vegetables; Mr. Garrod, Twickenham, being a very hard 2nd.

There were numerous epergnes, &c., shown by ladies, and Mr. Tracy, of Twickenham, had a pretty group of Orchids. Mr. W. Taylor, Hampton, Mr. Woodward, Teddington, and Mr. Latham, Hampton Court, had excellent collections of fruits.

WIMBLEDON AND DISTRICT.

NOVEMBER 12, 13.—The usual autumn show of this Society was held in the capacious Drill Hall at Wimbledon on the above dates. The competitions were in some cases few, in others very good. On the whole, the show was smaller than should be found in this wealthy and populous district, and some effort should be made to infuse into it greater vitality.

A fine group of plants was arranged by Messrs. Thompson & Sons. The large-group class brought only two exhibits, Mr. Newell, gr. to Sir E. Saunders, Wimbledon, having a very pleasing arrangement. Of smaller groups, Mr. G. Harman, gr. to J. Macfarlane, Esq., Wimbledon, was 1st. Mr. Newell had the best basket of plants—one, about 4 feet across, very well arranged, and bright in the bloom.

In the Chrysanthemum groups of the larger class, only one, and from Mr. F. Chandler, gr. to Canon Haygarth, Wimbledon, was staged—a very telling collection, with very fair blooms; this took the Tradesman's Silver Cup. Of smaller ones, Mr. Day, gr. to H. C. Turle, Esq., had the best. Trained plants were few, and call for no mention.

Chinese Primulas were very good. Mr. Newell had the best six plants, there being good variety of colour in the flowers.

Table plants were very good. A capital half-dozen were staged by Mr. Wilkins, gr. to J. M. Pearson, Esq., Kingston Hill. Mr. Newell had the best six berried plants in neat standards of Prince of Wales Capsicum.

Cut flowers were generally very good. The Challenge Vase for twenty-four Japanese and twenty-four incurved, won last year by Mr. Mease, gr. to A. Tate, Esq., Downwell, Leatherhead, brought three competitors. Mr. Mease was again the winner, with a really beautiful lot of blooms, beating Mr. Carpenter, who had won the Challenge Cup at Kingston on the 10th, and Mr. Gibson, Morden Park, who came 2nd and 3rd.

With twelve incurved and twelve Japanese, Mr. Mease was again a good 1st; Mr. C. N. Knowles, gr. to Mrs. Egerton, Rushampton, coming 2nd; and Mr. Alderman, gr. to Gilliat Hatfield, Esq., Morden Hill, was 3rd. Mr. Mease was also 1st in the class for twelve incurved and twelve Japanese blooms.

Mr. Hendon, gr. to D. B. Bressford, Esq., had the best six incurved; and Mr. Bradford, gr. to W. H. Hall, Esq., Wimbledon, was 2nd. Mr. Potbury, gr. to W. H. Froy, Esq., Putney Hill, had the best six Japanese, and Mr. Alderman the best twelve bunches of Pompons.

Of fruit, Mr. Griffin, gr. to the Misses Christy, Coombe Bank, had the best black Grapes in fine Alicante, and the best whites in Muscat of Alexandria, superbly finished. Beurré Diel, Gansell's Bergamot, and Duchesse d'Angoulême, from Mr. Lysell, were the best Pears.

Mr. Alderman had three dishes of Apples in Peasgood's Nonsuch, really grand samples; Wellington, wonderfully fine; and Blenheim Pippin. Mr. Thornton was 2nd with three dishes of King of the Pippins, all remarkably fine, handsome examples. Mr. Alderman also showed a large collection of good Apples, as also did Messrs. Reed & Sons, Tulse Hill.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

NOVEMBER 12, 13.—This young society held their second exhibition of Chrysanthemums, fruit, and vegetables in the Town Hall, Ware. The prize competition is solely confined to members only of the society. Classes are set apart for gardeners, amateurs, and cottagers.

The principal prize-winners in the gardeners' class for a collection of Chrysanthemums were, 1st, Mr. G. Fulford; 2nd, Mr. G. Collins. For a group of miscellaneous plants, Mr. Fulford secured 1st honours. In the cut-bloom section, Mr. C. Cox, of Brickenden Grange, was 1st with excellent blooms; 2nd, Mr. G. Fulford; 3rd, Mr. J. Turk. In smaller classes honours fell to Messrs. Fulford, J. Turk, D. Dover, G. Collins, J. Walters, and R. Smith.

Fruits and vegetables were well shown.

DEVON AND EXETER.

NOVEMBER 13.—This exhibition was held at Exeter, in the Victoria Hall, on Friday. Cut blooms were the special feature, and showed great improvement in the incurved classes. The groups of Chrysanthemums were pretty, but displayed not

the usual cultural skill. The groups of miscellaneous plants brought Mr. Rowland again to the front.

Fruit was very plentiful, and of good colour and quality, though perhaps, on the whole, not so fine as usual, probably owing to the fact that fruit does not keep well this season. Want of space precludes giving a detailed account.

HITCHIN DISTRICT CHRYSANTHEMUM SHOW.

NOVEMBER 13.—This exhibition took place in the Corn Exchange on the above date, and the exhibits were of a high-class nature. The arrangements of the Society were under the direction of Mr. W. C. P. Clark, of Hitchin, a most indefatigable Secretary, and a successful exhibitor of the Chrysanthemum.

In addition to the money prizes, a Silver Medal was offered for the best eighteen blooms, distinct, and a Bronze Medal for the 2nd. Mr. Clark gained the Silver Medal, with some clean and even blooms; and Dr. O. H. Foster, Hitchin, carried off the Bronze Medal.

The principal prize in the show, however, was offered for forty-eight blooms. Mr. J. Kipling, gr. to Mrs. Osgood, Rushworth Park, won the 1st prize with a magnificent stand; the 2nd prize-winner, Mr. A. Honett, gr. to G. B. Hudson, Esq., also staged some good specimens; Mr. John Anning, gr. to Captain Priogle, was a good 3rd.

For trained specimens, Mr. Springham, gr. to J. H. Tucke, was 1st; Mr. James Upland, gr. to F. Lucas, Esq., 2nd; followed by Mr. W. Millard, gr. to Wm. Ransome, Esq.

For bush plants, Mr. G. Harwood, gr. to A. Ransome, Esq., Hitchin; and Mr. E. Butler, gr. to F. Seebohn, Esq., were 1st and 2nd respectively; Mr. Springham was 3rd.

In the class for six incurved blooms, one variety, Mr. Honett was 1st, with Queen of England; Mr. Sharp, gr. to R. P. Wilson, Esq., Hitchin, 2nd; and Mr. J. Anning 3rd.

For six white Japanese, Mr. Honett was also 1st, and a First-class Certificate of the National Chrysanthemum Society was awarded him. Mr. Sharp was 2nd, and Mr. E. Cotton, gr. to A. W. Lines, Esq., Hitchin, 3rd. Messrs. Honett and Sharp were also 1st and 2nd for coloured Japanese.

The Pompons were not up to the average. Mr. G. Moules, Hitchin, took 1st prize in this class.

The Secretary (Mr. Clark) was the most successful exhibitor of three incurved and three Japanese, the 2nd and 3rd being taken by Mr. E. Ossman and Mr. G. Sanders. Mr. Clark's stand was deservedly awarded a First-class Certificate of the National Chrysanthemum Society, and one of his incurves, Empress of India, being the premier bloom in the show.

The groups were above preceding years in point of quality, the prizes falling to Mr. E. Ossman, J. Upschurd, E. B. Lindsell, Esq., Bearton, Hitchin; and Mr. R. Sharp.

COLONIAL NOTES.

JAMAICA.

The last Bulletin issued by the Botanical Department contains an article on a disease in Coconuts, presumably caused by bacteria. Mr. Jenman continues his synoptical list of Jamaica Ferns.

LAHORE.

The garden under the charge of Mr. Hein suffered much from the effects of the wet season, according to the Report for the year ending March 31, 1891. Chrysanthemums and Orchids did well, and the seedling Dates from Tunis and the Persian Gulf are thriving, but of very slow growth.

OODEYPORE.

Mr. Storey's annual report of the garden under his charge for 1890-91 is a satisfactory record of progress. Eight months' dry weather are very trying to vegetation, and in conjunction with the porous character of the soil, necessitate much care in watering and irrigation. Much damage was done by frost. Cut flowers are in large demand for the festivities given by the Maharana. A handsome library and museum have been inaugurated, and a

new rock garden, accommodating nearly 6000 sorts of plants, has been constructed.

DEMERARA.

Mr. Jenman reports that Gambier (*Uccaria gambier*), which furnishes a very valuable tanning substance, has been introduced from Kew. Cuttings of lateral shoots, remarks Mr. Watson, although they produce roots, grow horizontally, and will not form leaders. The plant may, however, be propagated by cuttings. Dr. Goebel, of Marburgh, made a prolonged stay in the gardens for the purpose of studying the Podostemaceæ. The reporter is evidently enamoured of fractions, for he records that the monthly average of carriages entering the garden is $66\frac{3}{12}$, and the daily average $21\frac{300}{365}$. At Berbice during the year 85 inches of rain fell, the largest quantity (16·6 inches) in January; the smallest (1·04) in October.

A PRIMULA DISEASE.

Mr. C. W. Dod exhibited at the Scientific Committee of the Royal Horticultural Society, on October 6, specimens of *Primula rosea* attacked by mildew. These were subsequently sent to Kew for investigation.

The disease is caused by a minute fungus belonging to the genus *Ramularia*, which appears on both surfaces of the leaf, especially towards the base, under the form of small ochraceous patches, which soon spread and run into one another, forming a more or less continuous cloud-like bloom on the surface, that becomes more conspicuous when the white spores or reproductive bodies are mature. As is the case with almost every fungous disease, when the fungus makes its appearance on the surface in the "mildew" form, for the purpose of forming its fruit, the work of destruction is practically done, being caused by the mycelium, which, during its vegetative phase, remains concealed in the tissues of the leaf. During this first period there is often but little evidence of its existence, the blotching or scorched appearance resulting from the death and collapse of the cells of the leaf, that have had their contents exhausted by the parasite. As in the higher forms of plant-life, these minute fungi have their characteristic features during the vegetative phase of development, in some kinds when a germinating spore sends its germ tube into the tissue of a leaf, the resulting mycelium remains localised or concentrated within a small area, eventually indicated by a small discoloured spot; in others, the mycelium spreads throughout the greater portion of the leaf, often travelling between the cells, and giving off branches that enter the cells by dissolving the wall at the point of contact, and feeding on the contents, after which the cells collapse, the walls generally becoming brown or blackish. In some instances the mycelium, when once in the tissues, travels from one leaf to another. The Hop mildew illustrates the habit of another group where the mycelium is external, forming a more or less compact, felt-like, white film on the surface of the leaf, and giving off numerous short branches or "haustoria," that pierce the cells, and absorb their contents as food.

In the *Primula* mildew, the mycelium is internal and at maturity sends out into the air numerous tufts of almost colourless, unbranched, upright threads, each bearing a single narrowly spindle-shaped spore at its tip, as shown in the accompanying illustration (fig. 87).

At the moment of maturity, the spores germinate readily within twelve hours when placed in water. This condition of things also takes place in a state of Nature: if we imagine a single patch of the mildew on a *Primula* leaf, which at maturity produces a hundred spores—a number very much within the mark—and each of these spores being conveyed by rain, wind, &c., to another leaf, or another portion of the same leaf, to produce within a few days a similar patch, it can be readily understood how a fungus disease spreads. And this is actually what takes place in scores of fungoid diseases, so long as the required amount of temperature and moisture

is present; when these conditions fail, the fungus-spores remain dormant until the return of favourable conditions. In the case of perennial plants, the fungus mycelium often remains dormant in the tissues during the winter, resuming activity with the development of new leaves.

Repeated experiments proved that the spores would not germinate in water containing 1 per cent. of a saturated solution of sulphate of copper. This is also true of the spores of many other species of fungus pests, in fact of all that I have had an opportunity of experimenting upon; hence it would appear that the copper salt is the most effective constituent in the various fungicides, as Bordeaux Mixture, &c. All that can be expected, or at all events all that will ever be got from the use of the various solutions, sulphur, and lime powdering, &c., is the temporary check of the pest, but this is in some instances worth the trouble. None of the above-mentioned applications benefit any healthy plant, and in the case of a diseased one, all that is accomplished is the partial retardation of spore formation, and the consequent spread of the disease; the myce-

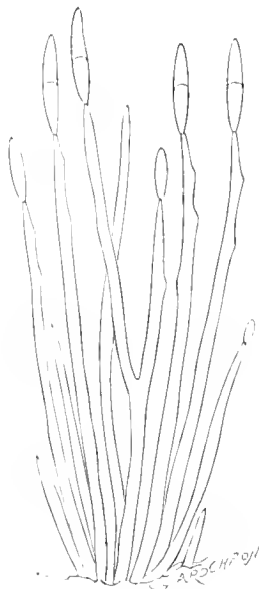


FIG. 87.—A SPORE-BEARING TUFT OF THE PRIMROSE MILDREW, *RAMULARIA PRIMULE*, THÜM. MAGNIFIED 400 TIMES.

lium in the tissues is not destroyed, and as spore formation, as already stated, is almost continuous throughout the season, the repeated application necessary to kill the successive crops of spores would in most cases act injuriously on the delicate portion of the plant.

Notwithstanding the above, the matter of fungoid diseases is not hopeless, and the first essential towards a successful issue is a thorough knowledge of the life-history of the various parasites; with this knowledge at hand, the weak point in the life-cycle of the pest could be attacked.

As the species is new to the British Fungus-flora, a description is appended. It has been met with in Italy, Austria, and Siberia, parasitic on *Primula acaulis*, *P. officinalis*, and *P. macrocalyx*.

Ramularia primula, Thüm.—Spots ochraceous, circular, or irregularly angular, tufts of hyphae occurring on both surfaces of the leaf; hyphae 50 to 70 by 5 to 6 m., continuous, minutely denticulate towards the apex, rarely branched; conidia cylindrical-fusoid, 1-septate, colourless, 20 to 30 by 5 to 6 m. On leaves of *Primula rosea*, G. Massee.

SCOTLAND.

NORTH OF SCOTLAND ROOT, FRUIT, AND VEGETABLE ASSOCIATION.

THE annual show of the above was held at Inverurie, N.B., on Saturday, the 7th inst., in the Volunteer Hall, and was attended with the usual success. The association has all along aimed at being wide in its scope, the farmer, gardener, and amateur in the district having to compete against all comers; but despite the fact that growers of special articles might beat solitary districts in detail, the plan has been found to work well, and the success of the association has, no doubt, in a large measure been owing to this departure from the ordinary custom.

The entries this year were 608 as against 650 in 1890, therefore a slight falling off is indicated. Garden produce was tastefully staged, and the plants on the tables served to enhance the appearance of the exhibits. The Potatoes were of fine appearance, and of excellent quality. The finest Potato in the hall was Sutton's Seedling, shown by Mr. G. Macpherson, Cluny, in the class for any new variety now in commerce. They were, however, disqualified, because, as alleged, they are now out of commerce. Garden Turnips, although of good quality, were not numerous. Of Leeks there was an extraordinary display, nothing finer having ever been shown here. Beet was also good. The best collection of vegetables was shown by Mr. John Ogston, Bourtie. Complaints of disease in Potatoes are heard all over the country, but notwithstanding this fact, the display of Potatoes was a large one, and the quality excellent. Among varieties that appeared to have suffered little from disease over the country, are the Magnum Bonums and the Bruce, but the Champions, which were at one time considered all but disease-proof, have in some instances suffered considerably.

In the classes of seedling Potatoes, Messrs. Cocker & Son, Aberdeen, and J. Macpherson, Elgin, carried off the leading honours.

The display of fruit, considering the rainy summer, was well up to the average of former years, Apples in particular. A splendid lot of well-matured culinary Apples were shown by gardeners and amateurs. Mr. Murray, Fauchaulds, led with green-top Swedes, and Sir Robert Abercromby, Bart., in a large class of purple-top Swedes, of good size and quality, which were awarded the Silver Cup for the best lot of Swedes. This is the fourth time in succession that Sir R. Abercromby has taken this prize, a sufficient testimony to the excellence of the seed, and the mode of cultivation pursued. If the Swedes were good, they were excelled by the green and purple-top yellows. The field Potatoes were a fine show. There was a good show of collections of thirty-six Potatoes, Mr. George F. Barron, Meikle Endovie, took the 1st place in this section, as he did two years ago. The varieties were Lord Rosebery, Grampians, Fortyfold, Sutton's Abundance, Magnum Bonums, and Glenberries.

THE DINNER.

The dinner was held in the hall of the Gordon Arms Hotel, Mrs. Mann, as usual, providing an excellent repast. The chair was occupied by Mr. A. M. Gordon, of Newton, Vice-President of the Association. The proceedings passed off successfully.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

HOW TO LAY OUT A MAZE.—Will any correspondent furnish particulars, the area required, that is, the extreme length and breadth of space requisite for a maze formed with Yew or evergreen hedges, stating the most suitable evergreen, the width, number of walks, &c.?
—C.

GLASS TUBES.—Where can I obtain, by the gross, small glass tubes, without any fittings, for button-hole flowers? L. [Advertisers, please note. Ed.]

VARIORUM.

THE PRODUCTION OF ARRACK IN SIAM.—The distillation of arrack from Rice is extensively carried on in the Chiangmai district, Siam. The Acting Vice-Consul reports that in this district, as well as in Lampun and Phrè, the distillation is a monopoly in the hands of the Chinese. In Chiangmai this monopoly is shortly to pass to a Chinaman under British protection, who is to pay 25,000 rupees (£1875) per annum for it. In Lakhon, every household is allowed to make its own arrack, but a liquor-tax of 1 rupee (1s. 6d.) per house is levied whether the liquor is distilled or not, a mode of collecting revenue which increases, rather than checks, the consumption of liquor. In Nan, on restriction is placed on the manufacture and sale of arrack, and the people of that province consequently enjoy an unenviable reputation for insobriety. The stills used are of a very primitive description. The fermented Rice is boiled in a deep iron pan set in brickwork, with a furnace beneath it, and over the pan is placed a large wooden cylinder, which receives the vapour. On the top of this cylinder is placed an iron pan containing cold water, and the liquor which is condensed by this runs off through a funnel, the end of which passes through the side of the wooden cylinder into jars. A great deal of firewood is consumed, and much of the spirit escapes in the process, and it would probably pay the liquor farmers well to import stills of foreign manufacture. In the provinces where there is a monopoly, besides the principal distillery, there are other small ones in the villages where liquor is distilled by Chinese holding sub-permits from the monopolist.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					10ths Inch.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 4, 1891.	
	Above (+) or below (-) the Mean for the week ending November 14.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.	Below 42° difference from Mean since Jan. 4, 1891.					More (+) or less (-) than Mean for Week.	No. of Rainy Days since Jan. 4, 1891.	Total fall since Jan. 4, 1891.
1	1 +	19	11	+ 211	+ 83	10	+ 206	44.5	12	27
2	1 +	13	21	- 56	+ 134	9	+ 156	25.8	21	30
3	1 -	15	25	- 94	+ 101	7	+ 152	20.9	14	29
4	1 -	31	18	- 68	+ 112	4	+ 161	23.6	26	34
5	1 -	31	20	- 104	+ 106	8	+ 163	26.0	18	32
6	1 +	35	7	- 98	+ 136	14	+ 157	28.8	22	37
7	1 +	20	6	+ 88	+ 52	11	+ 169	38.5	9	32
8	1 -	25	10	+ 35	+ 36	11	+ 154	30.3	8	30
9	0 aver	33	4	- 132	+ 111	16	+ 165	37.5	10	38
10	2 -	13	24	+ 22	+ 58	3	+ 185	28.8	21	31
11	3 -	26	13	- 36	+ 46	14	+ 169	33.0	19	34
12	2 -	40	0	- 46	+ 40	10	+ 164	30.9	27	47

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 14, is furnished from the Meteorological Office:—

"The weather during this period was very unsettled, and rough generally. Rain was very frequent, and the amounts were large in nearly all places.

"The temperature was a little above the mean in 'Scotland, N. and E.,' and about equal to the mean in 'England, S.W.' In all other districts it was rather below the normal. The highest of the maxima were recorded at most stations, either on the 10th or 11th, and ranged from 58° in 'England, S.,' and 57° in the 'Channel Islands,' to between 50° and 52° over the extreme N.W. and N. parts of the Kingdom. The lowest of the minima, generally speaking, were registered on the first day of the period, when they ranged from 24° in the 'Midland Counties,' 27° or 28° in 'Ireland,' 28° in 'England, E.,' and 29° in 'Scotland, N.,' to 33° in 'Scotland, W.,' 'England, N.W.,' and the 'Channel Islands.'

"The rainfall was more than the mean in all districts, the excess in most instances being very considerable. In 'England, S.,' the fall has been three times the normal, and in several other districts about twice as much.

"The bright sunshine showed a slight increase in most districts on that reported last week, but was still very deficient. The percentage of the possible duration ranged from between 8 to 12 in the west and extreme north of Great Britain, to 26 in England, E., and 27 in the Channel Islands.

MARKETS.

COVENT GARDEN, November 19.

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

Business quiet. English supplies of goods falling short. Large arrivals of Canadian and Nova Scotian Apples to hand, in good condition. The first cargo of new season's St. Michael's Pines landed this week in good condition. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

Apples, ½-sieve	... 1 0-4 0	Lemons, per case	... 15 0-30 0
Grapes, ...	... 0 6-2 6	Pine-apples, St. Michael, each	... 2 0-6 0
Kent Cobs, 100 lb.	... 30 0-35 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Acacia or Mimosa, French, per bunch	1 3-1 6	Marguerites, per doz.	hunches ... 3 0-4 0
Azalea, p. doz.	1 0-1 6	Narcissus, paper-white, Fr. p. bun.	0 9-1 6
Camellias, white, doz.	3 0-4 0	Orchids:—	
— red, per doz.	1 0-2 0	Cattleya, 12 blms.	6 0-12 0
Carnations, 12 blms.	2 0-2 6	Odontoglossum crispum, 12 blms.	3 0-6 0
Chrysanthemums, 12 blooms	1 0-3 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
— 12 bunches	3 0-12 0	— 12 spays...	0 6-1 0
Cloves, per dozen blooms	... 2 0-2 6	Roses, Tea, per dozen	1 0-3 0
Eucharis, per dozen	3 0-6 0	— coloured, dozen	2 0-4 0
Gardenia, per dozen	2 0-4 0	— yellow (Maréchal), per doz.	4 0-6 0
Heliotrope, 12 sprays	0 6-0 9	— red, per dozen	... 1 0-2 0
Hyacinths, 12 sprays	0 9-1 6	— various, doz. bun	6 0-9 0
Lilac, white (French) per bunch	... 7 6-8 0	Tuberose, 12 blms.	0 4-0 6
Lilium Harrisii, doz.	4 0-6 0	Violets, Parme, per buoch	... 3 6-4 0
Liliums, various, doz.	1 0-3 0	— Czar, per bunch	2 6-3 0
Maiden Hair Fern, 12 bunches	... 4 0-9 0	— English, 12 buns.	1 0-1 6

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Adiantums, per doz.	4 0-12 0	Erica gracilis	doz. 0 9-12 0
Aralias, per doz.	... 6 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	18 0-63 0	— small, per 100	8 0-15 0
Begonias, per doz.	... 4 0-6 0	Ficus, each	... 1 0-5 0
Chrysanthemums, per dozen	... 6 0-9 0	Fuchsias, per dozen	6 0-9 0
— large, each	... 2 0-3 6	Scarlet Pelargoniums, per doz.	... 4 0-6 0
Coleus, per dozen	... 3 0-6 0	Heliotropes, per doz.	4 0-6 0
Cyclamens, per doz.	9 0-18 0	Marguerites, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Palms, various, each	2 0-21 0
Dracenas, each	... 1 0 5 0	— specimens, each	10 6-84 0
Erica hymenalis, per dozen	... 12 0-18 0	Solanums, per dozen	9 0 12 0

VEGETABLES.—AVERAGE PRICES.

Apples, Canadian and Nova Scotian, per barrel	... 10 0-18 0	Endive, per dozen	... 2 0-3 0
Artichokes, Globe, each	... 0 4-0 6	Herbs, per bunch	... 0 9-1 0
Beans, French, lb.	... 0 6-1 0	Lettuces, per doz.	... 1 0-1 6
Beet, red, per dozen	2 0-3 0	Mushrooms, punnet	2 0-...
Carrots, per bunch	... 0 4-0 6	Mustard and Cress, punnet	... 0 4-0 4
Cauliflowers, each	... 0 3-0 6	Farsley, per bunch	... 0 3-0 6
Celery, per bundle	... 1 0-1 8	Shallots, per lb.	... 0 6-...
Cucumbers, each	... 0 6-0 9	Spinach, per bushel	3 6-...
		Tomatoes, per lb.	... 0 9-1 3
		Turnips, per bunch	... 0 4-0 6

POTATOS.

Since last report the tendency has been an advance for best quality. Inferior samples and qualities are lower. Arrivals, a slight increase. J. B. Thomas.

SEEDS.

LONDON, Nov. 18.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., write that a stronger feeling prevails for red Clover seed; American seed, in particular, shows substantial advance. Choice yearling French Clover seeds also meet with considerable favour. Winter Tares are now neglected. For Rye, more money is asked. Blue Peas are held for full rates. The excitement over Canary seed has somewhat abated. For the new Russian Hemp seed, which has just come to hand, there is a good sale. Mustard and Rape seed keep firm. In Linseed there is no alteration.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 17.—Quotations:—English Apples, 2s. 6d. to 6s. per bushel; American do., 12s. to 22s. 6d. per barrel; Pears, 1s. 6d. to 2s. 6d. per half-sieve; English Tomatos, 5s. to 7s. 6d. per peck; foreign do., 1s. to 1s. 6d. per box; Sea-kales, 1s. to 1s. 6d. per punnet; Cabbages, 1s. to 2s. 6d., and Savoys, 1s. 6d. to 2s. 6d. per tally; Greens, 1s. to 1s. 6d.; Turnips, 2s. to 2s. 3d.; Carrots, 2s. to 2s. 6d.; Parsley, 1s. to 1s. 6d.; Beetroot, 2s. to 2s. 6d. per dozen bunches; Spinach, 1s. to 2s. per bushel; Parsnips, 4d. to 8d., per score; Cos Lettuce, 4d. to 8d. do.; Endive, 1s. to 1s. 6d. per dozen; Cabbage Lettuce, 3d. to 6d. do.; Leeks, 1s. 6d. to 3s. 6d. do.; frame Cucumbers, 1s. 6d. to 2s. do.; Mustard and Cress, 1s. 6d. to 2s. 6d. per dozen baskets; Belgian Onions, 3s. 6d. to 4s.; Dutch do., 3s. 3d. to 4s. 3d. per bag of 110 lb.; Celery, 6d. to 1s. per bundle; Horseradish, 1s. to 1s. 1d. do.

BOROUGH: Nov. 17.—Quotations:—Cabbages, 2s. 6d. to 4s. per tally; Savoys, 2s. 6d. to 5s. do.; Broccoli, 4s. to 6s. do.; Spinach, 1s. 6d. to 2s. 6d. per bush; Turnips, 1s. to 1s. 6d. per dozen bunches; Carrots, 1s. to 1s. 9d. do.; English Onions, 4s. 6d. to 5s. per cwt.; English Apples, 2s. to 3s. per bushel; Pears, 2s. 6d. to 7s. do.; Canadian Apples, 12s. to 25s. per barrel; and Newtown Pippins, 20s. to 50s. do.

STRATFORD: Nov. 18.—There was a good supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 2s. to 3s. per tally; Savoys, 3s. to 5s. 6d. do.; Greens, 6s. 3d. to 7s. 6d. per tally; do., 1s. 3d. to 1s. 9d. per bunch; Cauliflowers, 9d. to 1s. 3d. per dozen; do., 3s. 6d. to 4s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 35s. to 45s. do.; do., cattle-feeding, 25s. to 32s. do.; Parsnips, 10s. to 1s. 4d. per score; Mangels, 15s. to 18s. per ton; Swedes, 20s. to 25s. do.; Onions, English, 100s. to 120s. do.; do., Dutch, 3s. 6d. to 4s. 6d. per bag; do., Oporto, 6s. to 8s. per case; Apples, English, 2s. to 40s. per bushel; do., American, 14s. to 20s. per barrel; Sprouts, 1s. to 1s. 6d. per half-sieve; do., 2s. 3d. to 3s. per sieve; Horseradish, 1s. to 1s. 6d. per bundle; Celery, 6d. to 1s. 2d. per roll.

POTATOS.

SPITALFIELDS: Nov. 17.—Quotations:—Magnums, 65s. to 80s. per ton; Regents, 60s. to 70s.; Champions, 60s. to 65s.; Imperators, 65s. to 85s.; Hebrons, 60s. to 80s. per ton.

BOROUGH: Nov. 17.—Quotations:—Hebrons and Elephants, 70s. to 90s.; Imperators, 60s. to 85s.; Bruces and Magnums, 60s. to 90s. per ton.

STRATFORD: Nov. 18.—Quotations:—Magnums, 65s. to 85s.; Imperators, 65s. to 85s.; Elephants, 65s. to 75s.; Hebrons, 65s. to 85s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Nov. 14, and for the corresponding period in the previous year:—1891, Wheat, 37s. 2d.; Barley, 30s. 11d.; Oats, 21s. 4d. 1890, Wheat, 32s. 8d.; Barley, 29s. 3d.; Oats, 17s. 6d. Difference: Wheat, +1s. 6d.; Barley, +1s. 8d.; Oats, +3s. 10d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; do., inferior, 40s. to 75s.; hay, best, 60s. to 92s.; do., inferior, 26s. to 50s.; and straw, 20s. to 40s. per load.

NOTICES TO CORRESPONDENTS.

ADIANTUM: Gilbert. Too much water, too much heat, not sufficient air: these are the probable causes of the mischief.

BOOKS: S. The Epitome of Gardening (Black & Co.), or Cassell's Dictionary of Gardening (Cassell & Co.). Gilbert. Molyneux on the Chrysanthemum (Journal of Horticulture Office, 171, Fleet Street).

BOTANIC GARDENS, CALCUTTA: Mounier. Apply to the Superintendent at Calcutta.

BIRMINGHAM: A. C. M. We cannot help you; consult some local authority.

CENTPEDES: S. J. B. and A. L. Try a dressing of gas-lime, one part to four of soil. Cut slices of Carrot, and lay them about or bury them beneath

the surface, and examine them every day. You may trap numbers in this way.

CHRYSANTHEMUMS: C. H. H. Good average blooms, but there are many of the same colour equally good, and the small hairs on the flowers are not sufficiently striking to be of importance.

CISTEN: G. S. The plants you name would not injure the water for the purposes you mention, but they might get in your way. Nymphæas, Limnæcharis, Sagittaria, Eichornia, Pontederia, &c. In your case these plants should be grown in large pots or tubs, and sunk a little below the level of the water.

CORRECTION: In the class for forty-eight cut blooms of Chrysanthemum at the Crystal Palace, Mr. Whittle, gr. to C. H. Gooschen, Esq., was placed 2nd, and Mr. Shoemith 4th, not 2nd as printed.

DISEASED MUSHROOMS: Correspondent. The Mushrooms are badly attacked by a well-known pest, a minute fungus, Mycogone rosea of Link. The only thing to do, is to get completely rid of the entire material composing the Mushroom-bed, as it is undoubtedly saturated with spores and spawn of the pest. G. M.

FUNGUS ON PEACH STEM: A. B. The fungus on the stem is Stereum purpureum; that on the root is spawn of the same. It has not been proved that the present fungus is the cause of disease, but it is amongst the commonest to appear on diseased woody plants. G. M.

MAGDALEN LILY: G. B. R. If you allude to this season, it is probably the L. longiflorum; if in summer, L. candidum.

MILDEW ON ROSES: Rev. A. P. Yes, certainly; but try it on a small scale first to find out the right strength to employ. Begin with a weak solution and increase the strength as may be necessary.

NAMES OF FRUITS: C. D. Hereford. 1 and 8, Glout Morceau; 4 and 5, Beurré Rance; 12, Winter Crassane.—R. F. P. 1, quite rotten; 2, Vicar of Winkfield.—A. B. Figue de Naples.—W. Rolfe, 1, Golden Reinette; 2, Cox's Orange; 3, Adam's Pearmain; 4, Doyenné du Comice; 5, Josephine de Malines; 6, Court Pendu Plat.—N. W. 1 and 3, Beurré Diel; 2, Beurré Rance; 5, Glout Morceau; 6, Passe Colmar; 7, Brown Beurré.—H. T. 1, Ecklinville Seedling; 2, Beauty of Kent; 4, Pea-good's Nonsuch; 5, Boston Russet; 6, Seckle.

NAMES OF PLANTS: Answer. Our time is too precious to waste in the attempt to name such miserable scraps.—J. E. McD. Linaria Cymbalaria.—J. D. 1, Juniperus chinensis; 2, probably Rhododendron ferrugineum.—G. J. 1, tree, one of the evergreen Oaks, probably a hybrid between the Cork Oak and some other; 2, Blue flower, Agatheæ celestia.—R. S. 1, Codium undulatum; 3, C. pictum; 4, C. majesticum; 5, C. angustifolium var. acubifolium; 6, C. angustifolium. All may be picked from one bush.—J. R. 1, Dendrobium chrysanthum; 2, Aspidium frondosum; 3, Aspidium (Nepbrodium) Molle.—E. C. Oncidium obryatum.—G. F. G. Senecio Ghiesbreghtiana.—A. W. Panicum capillare.

NOTICE TO LEAVE: Perplexed.—Assuming the facts to be as you narrate them, you have been very harshly treated. Consult a solicitor as to the law of the case.

PHALENOPIIS: J. M. The production of leaf-buds on the spike is not very uncommon.

POTATOS: Rev. A. P., Antrim. For many reasons it is better to change the ground, even though you afford manure. The ground may be swarming with fungus-spores, for one thing.

RATING OF GREENHOUSES: Bathonian. See Gardeners' Chronicle, March 9, 1889, p. 309. Greenhouses are trade fixtures. Land with greenhouses upon it used for commercial purposes, are market or nursery gardens within the Act. You should put yourself in communication with the Nursery and Seed Trade Association, 25, Old Jewry, E.C.

COMMUNICATIONS RECEIVED.—J. V. Volkem, Brussels.—Bathonian—C. E. M.—R. W. A., Pr-toria.—Messrs. Saoder & Co.—H. E. Ryde (next week).—M. D.—W. P. B.—Jorge.—T. Taylor.—J. E. N.—Quinton Reid.—A. O.—G. Ward.—M. S. & N. Railway.—H. J. Jones.—X. N. C.—J. Methven.—W. E. D.—W. A. C.—H. C.—G. W.—Dammann & Co.—D. M.—W. E. G.—Dr. Dammmer, Berlin.—Pioneer.—B. F.—M. D.—G. N.—C. C.—J. B.—A. B.—W. W. S.—G. S.—A. P.—C. E. M.—G. N.—E. R. L. Vanconyur.—Viconte de St. Leger, Rio Janeiro.—H. M.—J. M., Erfurt.—R. W. A., Pretoria, Transvaal.—C. W., Cassel.—W. B. L.—R. Pfau, Costa Rica.—R. S.

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J. J. CLARK, Market Gardener, Goldstone, Brighton.

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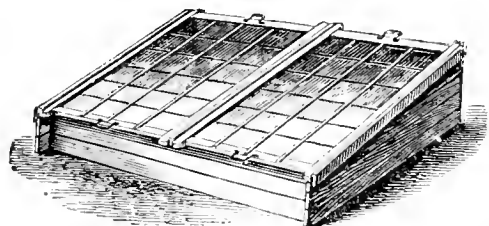
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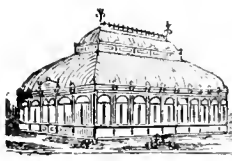
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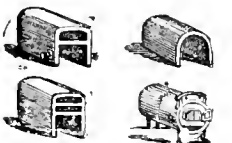
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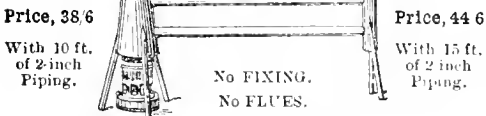
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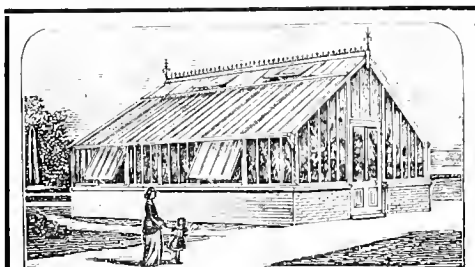
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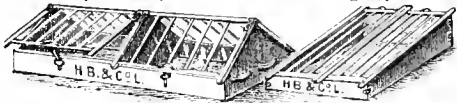
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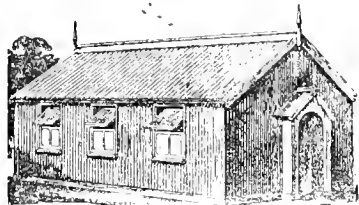
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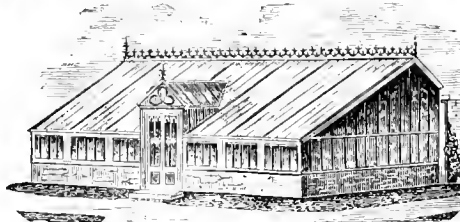
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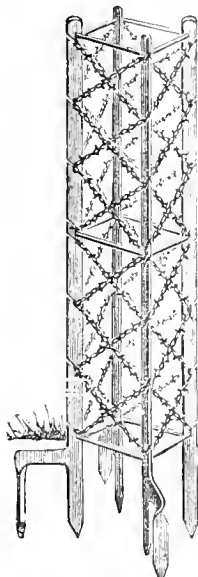
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10 tons, comprising 3000 lots, are actually sold every week. MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., FIVE DAYS WEEKLY, as above, at half-past 11 o'clock each day, LARGE CONSIGNMENTS of first-class HYACINTHS, TULIPS, CROCUSES, NARCISSES, and other BULBS from HOLLAND. Lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Richmond, Surrey.

HIGHLY IMPORTANT FOUR DAYS UNRESERVED SALE of the FIRST PORTION of well-grown NURSERY STOCK, by order of Messrs. G. & W. Steel, in consequence of the death of the senior partner, and the intention of the Vendor to relinquish the business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, The Common and Garsfield Nurseries, Richmond, Surrey, about ten minutes' walk from the Richmond Railway Station, on MONDAY NEXT, Nov. 30, and THREE FOLLOWING DAYS, at 12 o'clock precisely each day, the FIRST PORTION of the extensive and well-grown NURSERY STOCK, including, amongst other items, 10,000 Aucubas, 1 to 4 feet, a large number being suitable for pots and for growing on; 1000 Green and Variegated Box, 2 to 5 feet; 1000 new Silver Dwarf variety, 12 to 18 inches, suitable for pots; 4000 Golden Privet, 1 to 2½ feet; 4000 oval leaved Privet, 3 to 5 feet; 3000 English Yews, 3 to 6 feet; 5000 Laurels, 4 to 6 feet; 5000 Gold and Silver Variegated Hollies—a splendid lot, including 2000 Standard and Pyramid and single stems; 5000 Green Hollies, 1000 Retinospora plumosa aurea, 2 to 4 feet; 750 Thuja Lobbi, 4 to 6 feet; 750 Cupressus Lawsonii, 3 to 5 feet; 500 Rhododendron ponticum, 1½ to 3 feet; 5000 Rhododendron Stocks (good), 2500 Rhododendrons, fine named hybrids, 1½ to 3 feet; 500 Standard Rhododendrons, fine named hybrids, 2½ to 4 feet stems; 1000 Azalea mollis, 12 to 18 inches; 1000 Azalea pontica, 12 to 15 inches; 1500 Spruce Firs, 3 to 5 feet; 5000 Green Hollies, 2 to 5 feet; a large assortment of Specimen Ferns, Standard Ornamental Trees, 80 or 100 Fruit Trees, 2 to 3 years, amongst them 4000 Plums, principally Victoria and Gisborne; 500 Pyramid Morlo Cherries, fruiting trees, six ribs of old meadow HAY, about 100 loads; large Market VAN, Bay CART-HORSE, rising six years, &c.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The LEASE of the Nurseries and old-established Business is for DISPOSAL. Particulars can be obtained of the Auctioneers.

Tuesday Next.

13,735 LILIUM AURATUM, being the whole consignment of 213 cases just to hand. The bulbs are in magnificent condition, and include 1025 EXTRA LARGE SELECTED ROOTS, Also 740 LILIUM SPECIOSUM ALBUM, and MELPOMONE; and 700 LILIUM KRAMERI.]

An immense collection of HARDY PLANTS and BULBS, consisting of thousands of NEW TULIPS, first-class varieties, DAFFODILS, CHIONODOXAS, and other BULBS, HOME-GROWN LILIES of the best kinds, CARNATIONS, PICOTEES, and PEONIES, 3000 Berlin Crowns LILY OF THE VALLEY, The new SPIRÆA COMPACTA MULTIFLORA, a large quantity of HARDY PERENNIALS, BEGONIAS, IRIS, and 180 lots of DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 1, at half-past 11 o'clock.

On view morning of Sale, and Catalogues had.

MESSRS. PROTHEROE AND MORRIS will also SELL on FRIDAY, December 4, by order of Mr. F. Sander, some fine plants of the new variety of

CÆLOGYNE DAYANA GRANDIS, producing spikes of bloom 5 feet in length, THE GARLAND CÆLOGYNE, The plants are breaking freely.

It is evidently a free-growing variety. Collector writes:—"Nothing in Nature can exceed the elegance, grace, and beauty of this Orchid."

Wednesday Next.

AZALEAS, SPIRÆAS, ROSES, FERNS, and BULBS. MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 2, at half-past 11 o'clock, a SPLENDID CONSIGNMENT of PLANTS from BELGIUM, comprising 200 Azalea indica, including 50 Deutsche Perle, Azalea Mollis, 50 lots of Hardy Ghent Azaleas (double varieties), and 3000 Spiræa japonica, very fine clumps; 200 choice Palms, 40 lots of choice English-grown Greenhouse and Stove Ferns, Camellias, 2000 Lilyum Harrisii, Belladonna Lilies, Paper White and Poeticus Narcissus, Standard and Half-standard Roses, Home-grown Lilies, in great variety, Lily of the Valley, and a consignment of named Hyacinths and Tulips, for pots, glasses, and bedding; Crocus, Narcissus, and other Dutch Flower Roots from Holland—in all, 900 lots.

On view morning of Sale, and Catalogues had.

Friday Next, December 4.

THE OLD LABIATA.

ANOTHER GRAND IMPORTATION OF THE OLD AUTUMN-FLOWERING CATTLEYA LABIATA (LINDLEY).

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., by order of Mr. F. SANDER, on FRIDAY NEXT, December 4, at half-past 12 o'clock, over 1200 healthy plants of the

OLD LABIATA

from the only locality for the true old plant.

Re-imported by Mr. F. Sander.

It is the Queen of Cattleyas
It is warranted true
It is the easiest Cattleya grown
It is the freest-flowering Cattleya known
Its varieties are endless.

CATTLEYA LABIATA (Lindley).

Was discovered by W. Swainson in 1817, and since that year several small consignments have arrived in Europe. In about 1850, Mr. Horstall, of Liverpool, received some through a captain of one of his ships. Again, in about 1845, some plants came to Europe, and in 1882, Mr. Bartlett, of the Zoological Gardens, London, received a small consignment, and he disposed of it to Mr. B. S. Williams, of Upper Holloway, and two years ago a gentleman in Paris received an importation. The full history of the plant will shortly appear in the *Reichenbachia*. The old Labiata is a free-going Cattleya, and makes rapid growth, and is unequalled for cut flower purposes and grandeur of variety as a selling plant.

MESSRS. PROTHEROE AND MORRIS will SELL on FRIDAY, December 4, by order of Mr. F. Sander:—

CYPRIPEDIUM MONTANUM (INSIGNE).

Several widely different forms will be shown. Many grand and remarkable varieties have flowered among them.

Also a batch of INSIGNEs from the very spot whence came the incomparable SANDERIE.

Many fine plants of

DENDROBIUM RICHARDI, a fine introduction from New Guinea.

DENDROBIUM MACCARTHIE and D. AUREUM ZEYLANICUM.

Also a small importation of the rare

EPIDENDRUM RANDII.

This is extremely rare, and the plants now offered are GUARANTEED TRUE.

MESSRS. PROTHEROE AND MORRIS will also SELL on FRIDAY, December 4, by order of Mr. F. SANDER,

A GIANT CATTLEYA.

which is doubtless closely allied to C. Sanderiana although coming from an entirely new and far distant locality—on the confines of Venezuela and Columbia.

The plants are strong and every eye is sound and plump, and are sure to break freely.

Also many other rare, valuable, and useful orchids.

On view morning of Sale, and Catalogues had.

Feltham, Middlesex.

Absolutely WITHOUT RESERVE.

A PORTION of the exceptionally well-grown NURSERY STOCK, by order of Messrs. C. Lee & Son, the ground being required for other purposes. The Stock is in magnificent condition for removal, having been recently transplanted with great care.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Lee's Nurseries, Feltham, Middlesex, on THURSDAY and FRIDAY, December 10 and 11, at 12 o'clock each day, without reserve, thousands of exceptionally well-grown Specimen CONIFERS, the whole of which have been transplanted with great care, and will remove with safety. Specimen Conifers are a special feature at this Nursery, and the Auctioneers desire to call particular attention of Gentlemen and others to this important item in the Sale. The Catalogue will also include a grand lot of Specimen GOLDEN YEWs, 1500 CUPRESSUS ERECTA VIRIDIS, 2000 ENGLISH YEWs, 2 to 4 feet; 1000 HOLLIES, 1½ to 4 feet; 1000 named and HYBRID RHODODENDRONS, 1½ to 3 feet; and other Stock.

May be viewed any day prior to the Sale. Catalogues can be obtained on the Premises, at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers 67 and 68, Cheapside, London, E.C.

N.B.—In the event of frosty weather setting in, arrangements can be made for allowing ample time for removing the lots.

Havant.

EXPIRATION OF LEASE. SECOND PORTION.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Sea View Nurseries, Havant, on TUESDAY and WEDNESDAY, December 8 and 9, at 12 o'clock each day, the SECOND PORTION of the particularly well-grown and healthy NURSERY STOCK, which is in exceptionally fine condition for removing, comprising about 8000 Ornamental Trees, 5000 Flowering and Ornamental Flowering Shrubs, 5000 beautifully grown Conifers and Evergreens; 3000 Fruit Trees, several thousands of Roses, for the growing of which, these Nurseries have a wide spread reputation, and a large stock of smaller Evergreens and Conifers suitable for the Trade for growing on.

May be viewed. Catalogues on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sale next Monday. By Order of Mr. A. A. James.

THE TIVOLI NURSERY, Chapel Road, West Norwood. MR. W. N. WILLOUGHBY will SELL by AUCTION, on the above Premises, NEXT MONDAY, November 30, 1891, at 12 o'clock precisely, a choice collection of SURPLUS NURSERY STOCK, including 6000 Irish Ivies (part in pots), 3 to 6 feet high; choice Standard and Pyramid Apple, Pear, Plum, and other Fruit Trees, in full bearing; well-grown Evergreen and Border Shrubs, comprising 500 Aucubas, Eubonymus, Weigelia rosea, Guelder Roses, Irish and English Yews, Privet ovalifolium, Rhododendrons, Retinosporas, Golden and Green Hollies, Thujoopsis borealis, Cupressus Lawsoniana, and other deciduous shrubs; Sycamores, Planes, Mountain Ash, Copper Beech Trees, &c.

May be viewed this day, Saturday. Catalogues can be obtained on the Premises, and at the Auctioneers' Offices, 399, Norwood Road, and opposite the Railway Station, West Norwood.

On Wednesday Next.

TO GENTLEMEN PLANTING, GARDENERS, and OTHERS. Near the Horn Castle Inn, Bath Road, Reading. About 2½ miles from the Railway Stations, and opposite the Kennels of the South Berks Hunt.

MR. J. J. COOPER (of the firm of J. Omer Cooper & Son) will SELL by AUCTION, on the Premises, as above, on WEDNESDAY NEXT, December 2, 1891, at 12 o'clock precisely, a large quantity of FRUIT TREES.

The Sale will include a large selection of choice FRUIT TREES, CURRANTS and GOOSEBERRIES, ROSE TREES, COB, FILBERTS, and WALNUT TREES, LILACS, and SHRUBS.

On view day prior to and on morning of Sale. Catalogues may be had on the Premises; or of the Auctioneer, Blagrove Street, Reading.

To Nurserymen.

WANTED, TO RENT, a good-sized GREENHOUSE, suitable for Vines. In or near Hammersmith preferred. Particulars to—

A. Z., 57, Bridge Avenue, Hammersmith.

WANTED, a SMALL NURSERY.—Midland Town; plenty of Glass; price low.—State full particulars to R. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, 14 miles from London, on the Bath Road, HEATHROW FARM, Harmondsworth, Middlesex, from Michelmas next; contains 438 acres of good Arable and 41 of Meadow Land. Let as a whole, or divided into three or four Market Gardens. The House and Buildings are 3 miles from West Drayton and Hayes Stations (G. W. R.), at Heatham and Ashford Stations (S. W. R.). No Agents need apply.

For particulars, apply to WALTER C. RICHMOND, Wrotham Park Estate Office, Epsom, Herts.

Eastbourne, near to.

TO FRUIT GROWERS and GENTLEMEN fond of HORTICULTURE.

TO BE LET, on LEASE, COMPACT PROPERTY, about an acre and a quarter. Detached six-roomed residence, long greenhouse, 340 feet, in five compartments, with Vines, st. bling and sheds.

PARTICULARS of PROTHEROE AND MORRIS, Estate Agents, 67 and 68, Cheapside, E.C.

TO BE SOLD (a sacrifice), the LEASE and

about 15,000 feet of Glass in good order. Houses well-heated with Hot-water; a large quantity of Mould, Manure, Pots, Horse, Van, and Harness; some Stock, and other items; good Dwelling-house; Stabling, and every convenience; 1 acre of Ground. Rent nominal. Near London and Rail. Apply—W. J. PIPKIN, Land Surveyor, 19, Barbot Street, The Hyde, Edmonton.

Priory Nursery.

TO BE SOLD, as a going concern, a FREEHOLD NURSERY, containing over 3 Acres, 28 well-built Greenhouses, over 44,000 feet of Glass, 2 Coachhouses, and Stabling for 4 horses. Part of the Purchase-money can remain at 5 per cent. per annum. Apply to—

J. C. JENNINGS, Priory Nursery, Acton Lane, Chiswick.

KENT.—TO BE SOLD, an excellent compact MARKET NURSERY, with between 18,000 and 19,000 feet of modern Glass, well-heated, situated in one of the best districts for growing Plants and Fruit for Market. Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

FRUITERER'S and GREENGROCER'S (Brighton). Leading thoroughfare. Fine show. Old established business, with good Hotel and Private connection. Summer months £40 per week. Family reasons for disposal. Incoming £80 only.

HAROURT, MILLS and CO., Business Agents, 43, Ship Street, Brighton. Estab. 1822.

To Florists and Nurserymen.

FOR DISPOSAL, an ESTABLISHED BUSINESS, centre of popular town in Kent. Handsome Conservatory, good Gardens and Houses. Rare opportunity for energetic man. No Premium. In-going at Valuation—B. POMFRET, Valmer, Tunbridge Wells.

THE TOWER FURNISHING COMPANY
(Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.
Address, SECRETARY, 43, Great Tower Street, E.C.

SEAKALE, Extra Strong Foreing, 70s., very Good, 60s., per 1000. Cash with Order. Apply—**MYATT'S HEXTABLE HORTICULTURAL CO.**, Swanley Junction, Kent.

NARCISSUS, Grand Monarque.—Splendid Bulbs, 55s. per 1000, 6s. 6d. per 100; Soloed d'Or, 35s. per 1000, 4s. per 100; Scilly White, very early, 50s. per 1000, 6s. per 100; Poeticus, 6s. per 1000, 9d. per 100; Double Incomparable, 25s. per 1000, 3s. per 100; Double White, pure, 20s. per 1000, 3s. per 100; Single Sweet-Scented Jonquils, fine large bulbs, 20s. per 1000, 2s. 6d. per 100; Double Daffodils, 20s. per 1000, 2s. 6d. per 100; all true, sound stock. Carriage paid by rail or steamer, in England, 20s. Orders, Cash. Packing free.
PONTEY'S Bulb and Seed Warehouse, 21, Cornwall Street, Plymouth. (Established nearly a Century.)

TASMANIAN TREE FERNS.—A Gentleman has Five Beautiful Specimens of the above for Sale. Fronds from 6 to 8 feet long. Have ornamented his rooms all the summer. Good for all Decorative Purposes.—For particulars, apply—
L. A. CORBET, Merthyr Mawr, Bridgend, South Wales.

BARR'S BULBS, WINTER and SPRING.
The following Catalogues free on application:—
Catalogue of beautiful flowering Bulbs for all seasons.
Catalogue of all the best and most beautiful Daffodils (Narcissi).
Catalogue of all the best and most beautiful Hardy Perennials.
List of rare and beautiful Croci and Meadow Saffrons.
COLLECTIONS OF BULBS, 10s. 6d., 21s., 42s., 63s., & upwards.
COLLECTIONS OF DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s.
Hyacinths, Tulips, Crocus, Daffodils, Iris, Pionies, Lilies, &c.
BARR AND SON, 12, King Street, Covent Garden, London, W.C.

CHRYSANTHEMUMS.—Proved NOVELTIES in EARLY, JAPANESE, INCURVED, and other Select Varieties. New LISTS free. Gave great satisfaction last year.
A. J. A. BRUCE, The Nurseries, Chorlton-cum-Hardy, Manchester.

CHRYSANTHEMUMS, true to name. This collection includes the very best varieties only. Several silver cups and hundreds of 1st prizes were taken by my customers last year. For price of cuttings and plants see CATALOGUE of **W. ETHERINGTON**, Swanscombe, Kent.

SEAKALE for FORCING, large, superior Selected Crowns, 75s. per 1000; under 500, 8s. per 100. Cash with orders.—Address, **ALFRED ATWOOD**, Market Grower, 21, Shillington Street, Battersea, S.W.

FOR SALE, Cheap, **PINUS AUSTRIACA**, **ABIES DOUGLASHII**, **CUPRESSUS LAWSONII**, **SCOTCH** and **SPRUCE FIRS**. The above are fine specimens, from 4 to 10 feet, feathered to the ground, and more splendid.
E. TANNER, Broadwater Nursery, Groombridge.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.
(**JOHN COWAN**), Limited,

Have just Purchased, and will OFFER for SALE, from TUESDAY NEXT, December 1, the

MYTON COLLECTION OF ORCHIDS,

- WHICH INCLUDES
- A splendid lot of **CYPRIPEDIUMS**,
 - A splendid lot of **CATTLEYS**,
 - A splendid lot of **ODONTOCLOSSUMS**,
 - A splendid lot of **DENDROBIUMS**,
 - A splendid lot of **LÆLIAS**,
 - A splendid lot of **ONCIDIUMS**,
 - A splendid lot of other **ORCHIDS** in variety.

All in the very Finest Health and Condition.

INSPECTION INVITED.

DESCRIPTIVE and PRICED CATALOGUE free, on application to the Company,

THE VINEYARD & NURSERIES,
GARSTON, near **LIVERPOOL**.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to **SANDERS**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

FOR SALE, several hundred **STRAWBERRIES**; Best Sorts for Forcing, in 6-inch pots. Also **PRIMULAS**, in 5 and 7-inch pots. Also several dozen **MALMAISON CARNATIONS**, in 7-inch pots; **CINERARIAS**, and **GARDENIAS**.—**F. PITMAN**, Castle Carey, Somerset.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of **LILIES** OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

Fruit Trees a Specialty.
APPLES, PEARS, PLUMS, STRAWBERRIES, and all sorts of Small and Hardy Fruits grown in immense quantities. The best of the Old and New Varieties either to Grow for Market or Private Consumption. Special quotations for quantities. Descriptive CATALOGUE and GUIDE, the most complete issued, 6d. Ordinary LIST free.
JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

New Apple, Chelmsford Wonder.

SALTMARSH AND SON, The Nurseries, Chelmsford, are now sending out this splendid **NEW KITCHEN APPLE**, which, after receiving an Award of Merit in March last, has had an additional award of a First-class Certificate at the meeting of the Fruit Committee of the Royal Horticultural Society on November 10.

It is a firm, handsome Apple, of large size, a good keeper, great bearer, and of superior flavour when cooked. It was favoured with a well executed illustration, together with a faithful description, in the *Gardener's Magazine* of April 11, copies of which may be had on application.

Strong Maiden Trees are now ready at 5s. each, with the usual discount to the Trade.

GILBERT'S ROYAL FAMILY of the BRASSICA TRIBE.

CHOU DE BURGHELY (King of Cabbages), 1s. per packet.
UNIVERSAL SAVOY (Queen of Savoys), 1s. per packet.
KING OF THE BRUSSELS SPROUTS, 1s. 6d. per packet.
LATE WHITE VICTORIA BROCCOLI, 1s. 6d. per packet.
EARLY WILLIAM PEA (sow now), 2s. per quart.
WILSON'S ROYAL ASH TOP POTATO, for frame and outside work, the best, 2s. per stone.

GILBERT'S TELEGRAPH CUCUMBER, 1s. twelve seeds.
EARLIEST STRAWBERRY—**JOHN RUSKIN**, turned out of pots, 20s. per 1000; good runners, 15s. per 1000.
LATEST OF ALL RUNNERS, 15s. per 1000. Warranted best plants in the trade.

R. GILBERT, High Park, Stamford.

FOR SALE, SURPLUS NURSERY STOCK.
Cheap. To effect a Clearance.

1000 **SPRUCE FIR**, from 2 to 6 feet, well-furnished, being frequently transplanted.
400 **POPLAR**, 6 to 10 feet.
500 **AUSTRIAN PINE**, 2 feet.
1000 **IVY, IRISH**, 3 to 4 feet, stout, 15s. per 100.
6000 **ASH, COMMON**, 1 foot, stout, 25s. per 1000.
300 **FILBERTS, KENT COBS**, 3 feet, fruiting, 50s. per 100.
300 yards **BOX EDGING**, 6d. per yard.
20,000 **STRAWBERRY PLANTS**, **LAXTON'S NOBLE**, new, 15s. per 1000.
W. DALE, Knockholt, Kent.

DOBIE'S CATALOGUE and **COMPETITORS' GUIDE** for 1892.—25th Annual Edition, 160 pages, illustrated. Described by one of the greatest authorities in England as "the most useful list published in the trade." Will be ready on January 1, and will be sent gratis then to all who apply for it before Christmas, and enclose 3d. to cover postage.—**DOBIE AND CO.**, Seed Growers and Florists, Rothesay, Scotland.

Chrysanthemums.
BOYCE'S CHRYSANTHEMUM GUIDE and CATALOGUE contains Complete Directions upon Cultivation; also, List of the Best Varieties. Price 4d. (returned in first order). Many thousands of Rooted Cuttings ready in February, from 2s. per doz. Orders booked now.
W. E. BOYCE, F.N.C.S., Archway Road, Highgate, N.

FERNS.—Trade Surplus Stock.—Greenhouse and Stove, 25 best sorts, 12s. per 100; out of pots, 10s. Large **Adiantum cuneatum**, in 4 1/2s. bushy, 50s. per 100. Large **Ferns**, 10 sorts, and **Aralias**, in 4 1/2s. 45s. per 100. Very bushy **Pteris tremula**, and **Adiantum cuneatum**, for potting on, 16s. per 100. **Palms**, **Ficus**, **Erica** by-mails, and **Solanums**, 12s. and 15s. per doz. Packed free, Cash with Order.—**J. SMITH**, London Fern Nurseries, Loughboro' Junction, S.W.

CHRYSANTHEMUMS.

OWEN'S Descriptive and Priced CATALOGUE,

Now in the Press, giving full Descriptions and Results after Flowering of English Seedlings, carefully selected from thousands; also Sports, American and Continental Novelties, all carefully Selected after Blooming, only the very best in each section described; all inferior varieties discarded.

The following Grand Novelties will be distributed (March).—**Mrs. Robinson King**, new golden yellow sport from Golden Empress; **Six First-class Certificates**, 1891. **Neel Fragnell**, or **Striped Empress of India**; **Prelude**, or **Striped Alfred Lyne**; **Miss Lillian Cope**, or **White Etoile de Lyon**.

Orders booked for above, and all other Novelties, and dispatched in strict rotation. CATALOGUE free.

R. OWEN, Floral Nursery, Maidenhead.

EXHIBITIONS.

NATIONAL CHRYSANTHEMUM SOCIETY, ROYAL AQUARIUM, WESTMINSTER.
THE EARLY WINTER EXHIBITION
of the above Society will take place on

WEDNESDAY and THURSDAY, December 9 and 10.
Valuable Prizes are offered for Cut Chrysanthemums, Cyclamen persicum, Primula sinensis, and plants arranged for effect on tables. Schedule of Prizes on application to—
RICHARD DEAN, Secretary, Ranelagh Road, Ealing.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

President, **G. C. SHERRARD**, Esq., J.P.
The **SIXTEENTH ANNUAL EXHIBITION** will be held in the Drill Hall, Kingston-on-Thames, on **TUESDAY and WEDNESDAY**, November 8 and 9, 1892.
GEO. WOODGATE, Hon. Sec.

FOREST TREES.—Alders, 2 to 3 feet, 16s. per 1000; Ash, 3-yr., 2s. 6d. per 1000; 1 1/2 to 2 feet, 13s. per 1000; 2 to 3 feet, 16s. per 1000; 3 to 4 feet, 20s. per 1000; Ash, Mountain, 3 to 4 feet, 24s. per 1000; Beech, 2 to 2 1/2 feet, 22s. per 1000; 4 to 5 feet, 40s. per 1000; Chestnut, Horse, 2 feet, 18s. per 1000; Spanish C., 1 1/2 to 2 1/2 feet, 16s. per 1000; Elm, Wych, 2 to 2 1/2 feet, 16s. per 1000; Larch, 12 to 18 inch, 14s. per 1000; 1 1/2 to 2 feet, 20s. per 1000; 2 to 2 1/2 feet, 24s. per 1000; Spruce Fir, 1 1/2 to 2 feet, 14s. per 1000; Scotch Fir, 2-yr., 2-yr. tree, 16s. per 1000; 2 feet, 20s. per 1000; Hazels, 2 to 3 feet, 20s. per 1000; Hornbeam, 2 to 3 feet, 16s. per 1000. Oak, English, 1 1/2 feet, 12s. per 1000; 2 feet, 14s. per 1000; 2 1/2 to 3 feet, 18s. per 1000; Privets, Oval, 1 1/2 to 2 feet, 20s. per 1000; Privets, Common, 1 1/2 feet, 12s. per 1000; Sycamores, 1 1/2 to 2 feet, 12s. per 1000; 1 to 5 feet, 40s. per 1000; Thorns, 2 feet, 10s. per 1000; 2 1/2 feet, 12s. per 1000; 3 feet, 15s. per 1000; 3 to 4 feet, 17s. per 1000.
GARLIE MITCHELL, Nurseryman, Stranraer.

FRUIT TREES—FRUIT TREES.

JOHN PERKINS AND SON offer the following **STANDARD APPLES, PEARS, PLUMS, CHERRIES**, and **DAMSONS**, 5 to 6 feet stems, suitable for Orchards; very cheap by the dozen, hundred, or thousand. All the most popular sorts in cultivation. Special offers on application.
52, MARKET SQUARE, NORTHAMPTON.
Nurseries, Billing Road.

THE CHEAPEST OFFER EVER MADE.

40,000 **ASH**, transplanted, 9 to 18 inches, 9s. per 1000.
40,000 **ASH**, transplanted, 12 to 18 inches, 11s. per 1000.
50,000 **ASH**, transplanted, 1 1/2 to 2 feet, 15s. 6d. per 1000.
100,000 **ASH**, transplanted, 2 to 3 feet, 18s. per 1000.
100,000 **ASH**, transplanted, 3 to 4 feet, 23s. per 1000.
50,000 **ASH**, transplanted, 4 to 5 feet, 27s. per 1000.
A Sample 100 can be had at prices quoted.

ALL FINELY-ROOTED and WELL-GROWN STUFF.

EDWARD WISEMAN, Nurseryman,
ELGIN, SCOTLAND.

BEARING PEACH TREES.—A few very fine bearing Dwarf-trained and Standard Trees, fibrously rooted, well-balanced Heads. Prices on application.
W. ICEION, Putney, S.W.

Special Cheap Offer to the Trade and large Planters.

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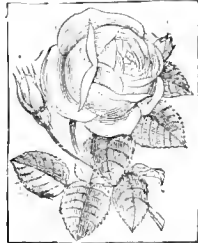
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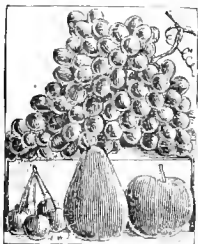
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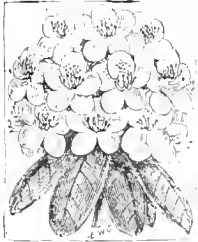


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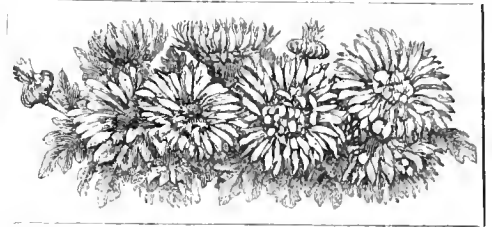
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 28, 1891.

CLASSIFICATION OF ROSE
GROWERS AND OTHER EXHIBITORS.

LIKE "Wild Rose," I have rejoiced and been exceeding glad in the peace and harmony, as well as the prosperity, that have so long distinguished the National Rose Society, though, like other judges and rosarians, I have frequently found the beauty and sweetness of Roses somewhat marred through the murmurings and thunderings of the smaller growers against the larger for invading their prize runs, as the smaller classes have been called. Now, so long as quality reigns supreme through all the classes, the best Roses only can win first honours, and no exhibitor is allowed to compete in the small as well as the large classes, and thus sweep off all or the lion's share of the prizes, exhibitors have little to complain of, and societies must endure the grumbings which are the safety-valves of some exhibitors after being beaten. Even some rosarians seem to need a long life-time to learn to take that useful discipline with becoming dignity, and such seek and find a sort of consolation, by attempting to drag the element of unfairness into their loss of money and credit. Anyhow, such grumbings seem inevitable, and are probably as old as the art of stimulating superior culture through the awarding of valuable prizes for the best products at public exhibitions.

Nothing is easier on paper than to lay down such abstract propositions as that exhibitors should only compete with their peers, that is, those having an equality of power and privilege granted. But who are our peers in such matters, and how is the equality of advantages to be determined, and where is the sense of squabbling over mere area and quality of labour, when such potent factors to successful showing as the skill of the exhibitor, the quality of his soil, the facilities of his position, the character of his stock, the potency of his stimulants, &c., are necessarily left out of the reckoning? I agree with "Wild Rose" on both of these points. The best skilled labour of professional gardeners will win few or no first prizes at the National or other Rose shows, unless the blooms are wisely set in the eyes of the judges on the show tables. Humiliating as it may seem, it is nevertheless true, that as many or more prizes are won through the final placing and arrangement of the blooms as through the growing. Yes, it is the final touches that win, and unfortunately many skilful cultivators seem incapable of giving these finishing touches, or capitating arrangements, to prize boxes. And then from what source has area or size been accepted as a measure of quality? or in what other department of art or science, excepting in Rose growing, is the mere counting of heads accepted as a safe or sound basis for

any useful classification of quality? And how many small growers would admit that they do, or can only grow inferior Roses to the larger growers? On the contrary, how often in practice is the shoe found on the other foot, and the small grower is found among the leading prizetakers? And how are we to determine between large or small? Is 500 or a 1000 to be the limit? and are all sorts and conditions of Roses in the garden to count? and who is to count them?

The plan is impracticable, and therefore cannot be adopted. Neither is there any necessity for it. The grower with 500 Roses can grow them as well or better than his neighbour with 500,000. True, he cannot fill so many large classes, nor is he required to do so. Smaller ones are arranged on purpose to suit his means and his capacities. But then he complains that the larger grower shows in these and robs him of his just and fair chances. But so long as these large growers do not also show in their own larger classes, where does the injustice to the small grower come in? On the contrary, the larger grower who thus stoops to conquer money prize in the smaller classes suffers a grievous loss of credit, and should he suffer defeat by the smaller grower—a thing not unknown in the annals of Rose showing—his humiliation is complete and the pride and glory of the smaller grower is beyond description.

So long as the entries are made some time before the show, and no shifting and chopping about of classes are allowed at the last moment, with a view of prize-grabbing, and all classes and sizes of exhibitors are treated alike, there is little reason to complain.

There is, however, one great grievance all too common at Rose shows, though probably quite unknown at the National Rose Society, which ought to be abolished at once, and that is, the secretary and other officials appearing as exhibitors also. The evils and abuses of allowing this are so obvious, that all such dual functions should be at once abolished. Secretaries, with their official knowledge of the numbers of entries in each class, can so place their own exhibits as to be sure of winning, to the serious injury of other exhibitors, and such pot-hunting, which the writer has seen again and again, is as fatal to the permanent prosperity of societies, as it is discreditable to rosarians. The latter should be above suspicion, and to make and keep them so, it is hoped that during the forced repose of the coming winter, every secretary will resolve to show no more Roses at his own society's show. Beyond this common-sense reform, it may neither be possible nor desirable to proceed much further by way of classification or restriction. Who shall say how many societies have been rent into fragments in the vain attempt to classify exhibitors under the threefold divisions of growers for sale, gentlemen's gardeners, and amateurs. And every year these classes get more mixed, and the number of gentlemen's gardeners and amateurs who never sell fruit, plants, or flowers, to say nothing of vegetables, become fewer and less. And hence largely the hopelessness of establishing any other classification or standard of merit than that of the highest excellence. Let the best Roses win, though the heavens fall, and all but the best blooms return home prizeless—an almost equally appalling catastrophe to mere prize-hunting exhibitors. If merit cannot always meet with its due reward on our present lines, then I should try levelling down to equality by reducing the larger exhibits, and throwing all classes open. Under present modes of showing, one is startled at times, with

the low quality of the 1st prize blooms in some classes. On inquiry it will be found that these are badly filled, and that the Roses have had first prizes awarded because they are the best, jurors disliking to disqualify a stand. It is high time that all awards, unless for the best Roses, should cease to be made at the National and all other Rose shows. *Rosa*.

NEW OR NOTEWORTHY PLANT.

DENDROBIUM LEEANUM, *n. sp.* (fig. 88).

THIS is a handsome new species imported with *D. Phalaenopsis* var. *Schroderianum* by Messrs. F. Sander & Co., of St. Albans. The plant has pseudobulbs, about 3 feet in height, stout, and slightly compressed, and somewhat resembling those of *D. taurinum*. The upper portion of the pseudobulb bears stout sprays of handsome flowers, arranged after the manner of those of the *D. superbiens*, well illustrated in the *Gardeners' Chronicle*, January 12, 1878, p. 49. The habit of the present species, however, is different from that of *D. superbiens*, and the flowers are distinct in all points, and more especially in the open form of the labellum, the side lobes of which are not folded over the column as in *D. superbiens*, and in the petals being narrower than the sepals. The sepals are formed like those of *D. Phalaenopsis*, white at the base, and tinged and freckled with pink on the outer halves. The petals, which are slightly twisted, are of a bright rosy-crimson. The labellum is green at the base, with radiating reddish lines, and the front lobe and the margins of the side lobes are of a rich rosy-crimson. From the base of the lip run three ridges, which extend to the upper part of the front lobe, where they become wavy, and display a tendency to develop some additional slightly-raised ridges. It is a very showy species, and it is to be hoped that other examples of it will appear. It is named in honour of W. R. Lee, Esq., of Manchester, a keen collector of rare Orchids. *J. O'B.*

THE ROSERY.

ROSES IN POTS.

THIS may be said to be the very dullest season of the year for our choice plants in pots, of which the Tea-scented varieties may well hold the first place, and hybrid perpetuals the second. That is the position most tasteful persons would place them in; and for flowering in the autumn as well as in the spring and summer, the Tea-scented varieties are the most truly perpetual. They are supposed to be more tender than the hybrid perpetuals, and some of the Tea-scented varieties are certainly of weak constitution. Such, however, ought not to be grown, as there are so many varieties now in cultivation vigorous enough for anything, and of the highest quality as regards the form, colour, and substance of the flowers.

All the plants should be now under cover. A glass house is best for them, and they must be kept dry at the roots. As soon as they are well on the dry side they should be pruned. The cut portions will not bleed if the soil be sufficiently dry; and if no water applied for a week or ten days after, the wounds heal, and water may then be safely given to the plants. Some persons apply styptic to the cut portions to prevent bleeding; this can do no harm, but I find that it is not really needed. If the plants are kept merely in a greenhouse temperature, the buds will soon swell up and show signs of growth, and if forcing is begun about the end of the present month (November) or early in December, it is better that the temperature of the forcing-pit should not be higher than that of a warm greenhouse at first; place the plants near the roof, and give rather free ventilation. As growth progresses, 55° at night may be kept up, with a little increase by day. The plants will not start very freely, nor will the growth be very strong, unless

the Roses are well established. I recommend repotting them in August, or not later than the middle of September.

Cuttings that were put in under glasses in July form nice plants by the end of the season, and may be planted singly in 4 or 5-inch pots; or they may be planted in a favourable position out-of-doors, and with a slight protection of dried fronds of bracken they will not suffer injury from frosts. *J. Douglas*.

THE WINTER PROTECTION OF ROSES.

THIS is a very important item in the cultivation of Roses, for if the plants are over-protected, the results are often quite as disastrous as when they have received no assistance in withstanding the rigours of winter. Generally speaking, Roses are either over-protected, or else they are left to take their chance. This first is more particularly the case among small amateurs, who are unduly careful over their favourites. The majority of large growers give very little protection, experience having shown them that plants that have been sheltered from almost all hard weather are apt to break into growth prematurely. If these extra early growths escape actual frost, they are seldom able to carry good flowers, because the cold, unfavourable nights cause the buds to bind, and when the bloom does eventually open, there are green and hard cores in the centre of the flowers.

Dwarf Roses, of whatever class, are far best protected by a fair mulching of light stable manure and by having the soil drawn up around the base of the plants, thus earthing them up some 6 to 9 inches. This plan is all that they require, unless we get very piercing cold winds with frost, when it is advisable to stick a few pieces of Gorse, Birch twigs, or any similarly light material among their tops. The two things I have named give a great deal of protection, are very easily stuck into the soil, and best of all are so readily removed in a few minutes without leaving any unsightly litter. They also have the great advantage of not accumulating any moisture, and in this respect are far beyond hay, straw, or even the Bracken Fern.

Anything that retains moisture is unsuitable for protecting Roses, as the frost has far more effect when the material around the plants is wet.

Standard Roses can be protected by tying a little Bracken Fern around the stems loosely; and by a few Birch or Gorse twigs being set in among the tops of the plants, and then fastened securely to the stem of the Rose. One of the chief things in protecting standard Roses is to take the precaution of keeping very severe frost away from the Briar stems. More mischief is in reality done to this form of Rose from their stems being crippled by frost than any other thing. My Roses are nicely ripened, and I do not anticipate any harm from frost during the coming winter, unless, as was the case last year, we have an extra severe time for them to pass through. Unless Roses are well ripened, their wood can stand but very little frost. I am certain that most of my plants will stand 10° to 12° before being injured in any way; and beyond the fact of earthing up a few of the choicest, I shall not afford any protection until we get more severe weather. When Roses, or any plants, are quite dormant, they can withstand a far greater amount of frost than if they were only half-matured or ripened. The hardest of trees and plants are injured by both early and late frosts if they are not at rest. I would warn my readers against neglecting to protect their Roses against very cold and piercing winds. Any keen wind with a few degrees of frost in it will be much more injurious than 15° with a comparatively still or quiet atmosphere. *A. P.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT WILLESDEN.

THE excellent group of Brazilian *Oncidium* in flower, for which Messrs. Collins and Collins, of the Cumberland Park Nursery, Willesden Junction, were awarded a silver Medal at the last October meeting of the Royal Horticultural Society, was but a fair sample of the high state of culture to which the two young Brothers Collins bring most of the Orchids taken in hand by them. In the large span-roof

show-house at the present time the roof is laden with profusely-flowered specimens of *Oncidium varicosum* in many varieties; *O. pratextum*, in all shades, from light brown to chestnut-red; *O. tigrinum*, *O. Forbesii*, and others of that class, all richly laden with bloom, the quality of which may be imagined when it is said that one spike of a fine form of *O. varicosum* had 144 flowers, and another specimen has two spikes of 130 blooms. Many growers say these plants flower once, and then die, but grown cool and airy as they are here grown, the plants get stronger, and flower better every year; and yet one would suppose there are many better places in which to grow Orchids, for the houses are close to the great Junction, and not many yards from the railway itself. The fact is, that good culture meets with success even in unfavourable situations, while bad management cannot get good results in Orchid culture under the most favourable conditions.

At the Cumberland Park Nursery, suspending Orchids in baskets or hanging pans is much resorted to, and marvellously do the plants thrive in them. The numerous specimens of *Odontoglossum citrosimum*, *Oncidium tigrinum*, *Odontoglossum grande*, *Laelia anceps*, &c., suspended in a long

placed in several of the other houses, in order to test in which they will thrive the best.

Orchids are to be found suspended in most of the other houses, which are devoted to the culture of market Ferns, *Azalea indica alba* for cutting, and other plants useful for market work; but a neat block of four long span-roof houses contains the chief of the stock, and their occupants are in admirable condition. The first house of the block has *Cattleyas*, *Lælias*, *Vandas*, &c., together with other showy species, *Cattleya aurea* and some others being in bloom. The second house has one side occupied by fine plants of *Cypripedium insigne*, with broad stout leaves, and each well furnished with bloom. This plant is marvellously well grown here, and amongst the stock are some extra fine varieties. Much of their satisfactory condition is attributed to their being made to pass the summer in cold frames, and doubtless many other species would be benefited by similar treatment. Suspended in this house were many fine pans of the showy *Sophranitis grandiflora*, also quantities of large masses of *Cattleya Percivaliana*, and a few dozens of the beautiful *C. chrysozona*, an introduction which has already produced some very handsome things, and some of which are like *C. aurea*, but

get enthusiastic, and himself indulge in the very figures of speech which previously he had made up his mind to consider as auctioneer's rhetoric!

The plant is stated to come from North-East New Guinea, but is clearly very closely allied to the North Australian *D. phalenopsis*, of which indeed it is recognised as a variety. The general habit of growth is shown in the sketch on p. 642 (fig. 89). The racemes, which frequently branch into panicles, have slender wiry stems straight below, but bent zig-zag fashion near the top, the pedicels springing from the axil of a minute bract. Of these flower-bearing pedicels we counted in one case fifteen on one panicle, but the dried specimens show as many as twenty-six flowers. The flowers themselves (figs. 90, 91) are cup-shaped, pentagonal in general outline, and varying greatly in size and colour. A medium-size flower on our table measures 60 mill. (say, 2½ inches) across, and 45 mill. (1½ inches) from the apex of the upper sepal to the tip of the lip. In colour the range is from almost pure white to deep violet-purple. In some flowers the outer segments are of the same tint, or nearly so, as the inner, whilst in others the lighter hue of the sepals contrasts beautifully with the richer colours of the petals and of the lip.

The outer segments are lanceolate, with a fine point at the tip, and traversed by about twelve closely-arranged veins. The lateral petals, spread out flat on either side, are broadly wedge-shaped at the base, dilating upwards into an obovate rhomboid limb more than twice the width of the sepals, and with about sixteen divergent veins. The lip, as a whole, forms a broad tube, projecting forward, enclosing the column, and prolonged at one end into a trumpet-like spur; at the other, into a tongue-like fore-lobe directed downwards. The basal part of the lip forms a compressed, funnel-shaped, blunt spur, about 15 mill. long, and the front portion of which is jointed to the narrow base of the disc of the lip. This disc is three-lobed, the side-lobes rounded, erect, curved over at the top to form the throat, the centre traversed by three or four slightly prominent ridges of a darker purple than the remainder of the lip; fore-lobe oblong, rounded, apiculate, bent downwards. The column is short, high-shouldered, striped with purple, with a small white anther at the top of a transverse bar-like "rostellum," which forms the upper boundary of the wide stigmatic cavity.

The mechanism of the flower is easy to understand. The insect slights on the flat fore-lobe of the lip, which is displayed to attract his attention. It traverses the tube or throat of the lip, the joint or hinge of which acts as a spring to keep him in the way he should go to secure the honey in the spur, a process still further facilitated by the ridges on the lip. Thus coaxed and forced to take the right course, he must needs knock off the anther cap, liberate the pollen masses, and transfer them to the next flower he visits.

Among the flowers kindly placed at our disposal was one shown in fig. 92, wherein the lip had retained the form ordinarily reserved for the side petals only; that is to say, the lip had not run away as it generally does, from its more symmetrically-formed brothers. In connection with this, the spur was much shorter than usual, and the column had two perfect anthers instead of one. Such a flower would afford a gleam of joy to the florist enamoured of circles, and who squeezes all the history and interest out of a bloom in order to make it conform to his notion what a flower should be like! Such a flower affords a more legitimate delight to the botanist, for it tells a tale, showing him how the Orchid flower was made, how modified, and why, what its ancestors were like, and what are the relatives of existing Orchids. This particular flower, moreover, is interesting, as showing that these peloriate flowers are not always terminal, for this one was lateral and at the base of the spike, a fact that recalls a correspondence on this very subject with the late Charles Darwin, who considered such flowers to be more exclusively terminal in their position than the present writer could or can admit.

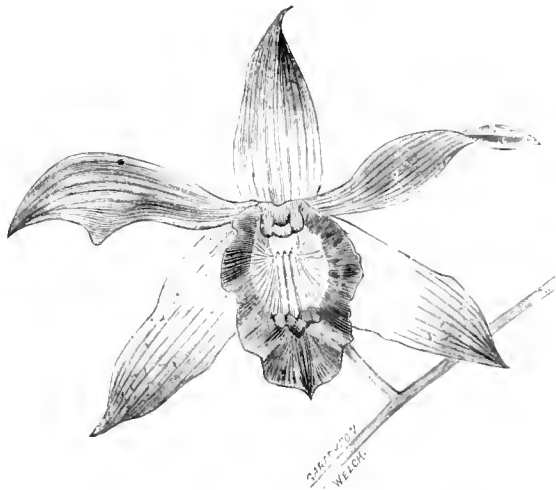


FIG. 88.—DENDROBIUM LEEANUM. (SEE P. 640)

house which had formerly been used for Ferns, and most of which were in bad condition when purchased, one and all exhibit in the annual increase of the size and vigour of their bulbs, their appreciation of the treatment given them; indeed, it seems difficult to imagine further improvement in many of them, while the same floriferous character extends to all the stock in this rising establishment. In the beds in this long house are large batches of *Cypripediums*, *Cymbidium Lowianum*, freely sending out flower-spikes; *Celogyne cristata* in all its forms, &c. It should be noted that in all the houses large soft-water tanks are built beneath the centre walks, and are left partially open for the purpose of dipping water. The plan may not be altogether convenient, but it is certainly beneficial to the plants.

In another long house were some scores of pans of *Cypripedium bellatulum*, which formerly gave some trouble by damping off in winter. This difficulty has been got over by Messrs. Collins by potting the plants in lumps of chalk, and sphagnum moss, and suspending them in this rather moist intermediate-house, water being now very sparingly given, and will be discontinued when dull weather and the winter set in. So far the plants like the treatment well, and it is anticipated that by being kept short of water until they begin to root actively, the root-action will be more complete and effectual than it would if the plants had been kept wet previously. Experimental batches, too, of this *Cypripedium*, arranged after the manner above described, are

with white sepals and petals. The third house has *Zygopetalums*, *Dendrobiums*, and other good species, with the beautiful yellow *Oncidium varicosum*, which is found in most of the houses, suspended overhead, and the fourth house is filled with sturdy, well-grown *Odontoglossum crispum*, *O. Pescatorei*, and other *Odontoglossums* and cool-house *Oncidiums*, among which some of the *O. macranthum* have very large and stout bulbs.

Reasonably cool treatment for all classes of Orchids, and the free admission of pure air, are the main points observed in bringing about the pleasant state of things to be found in the Cumberland Park Nurseries, and Messrs. Collins & Collins are to be congratulated on their success in growing the showy species they have hitherto attempted.

DENDROBIUM PHALENOPSIS VAR. SCHRODERIANUM.

The visitor to Messrs. Sanders' richly-stocked establishment at St. Albans may enjoy at the present time a sight of no common interest and beauty in the inspection of what has been called the Elephant Moth Dendrobe. A good many superlatives have been made use of in alluding to this plant. Those who will go and see for themselves will come to the conclusion that the plant is none the better for these high-flown epithets, which lead rather to distrust than to confidence. But in presence of the flowers themselves the visitor is apt to

But the ordinary Orchidist cares little for such details as these, and the general reader still less. To conciliate and attract the latter, we must unfold a tale of horror in several chapters, and in Mr. Sander's own words:—

"About eighteen months ago our collector, to whose indefatigable zeal and perseverance we are indebted for the importation, arrived with nearly 400 plants at a small port in New Guinea; the ship caught fire, and every soul on board had to take to the boats. All lives were saved, but everything else lost. We received a cablegram with the words, 'Ship burned, everything lost, what do?' This telegram was confirmed by the news in the morning papers. After wiring back, 'Return, try again,' we got the reply, 'Rainsy season on,' and wired once again, 'Return, collect more.' The intrepid collector obeyed our orders. . . ."

Quite a sensational story might be written about the discovery of this wonderful Orchid. We give the letter from the collector. He says:—

"With great pleasure I announce to you the fact that I arrived here yesterday with my plants in the finest order, and you will get striking novelties at last from this terrible country, and you will have every reason to be satisfied. It was the best time to collect the Dendrobe; they had just finished growing, and some were in full bloom, and oh, what a glorious thing it is! I forgot all my troubles when I saw the first on some rocks near the huts where I was staying, where they grew on the bare limestone between a great number of human skulls and bones. The natives do not bury their dead, but put them in a kind of coffin, and then place them on these solitary rocks, which stand scattered about the shore or beach, and which can be reached only at ebb tide. Here in these rocks the plants grew most luxuriantly, exposed to the full sun, and when the weather is rough, they often get the spray of the sea water. At first the natives did not like the idea of collecting the plants off those rocks; they were afraid the souls of the departed whose bones were laying there bleaching in the sun would resent it; but when they saw the gorgeous handkerchiefs, beads, looking-glasses, and my brass wire, I offered them for the plants, they did not trouble themselves any more about the souls of their ancestors, but boldly went and rooted out every plant to be found. . . . The majority of the plants, however, come from places where no bones were found. The plants grew chiefly on these solitary, much-honeycombed, limestone rocks, always exposed to the sun, or getting only very little shade during a part of the day. It also grows on trees in the Ficus groves more inland, although very sparingly. I found the big specimens on the highest trees in the dense jungle, where it is very rare, and I only saw a few on the very highest trees. I should think in cultivation it will require plenty of moisture while growing, and a culture like that suitable for *D. nobile*.

"In size and colouring it varies as much from the ordinary *D. Phalenopsis* as *Dendrobium Wardianum* from *D. crassinode*; the largest flowers measured $4\frac{1}{2}$ inches across, none measuring less than $2\frac{1}{2}$ inches. I saw a few plants with branched spikes, but this seems only excess of strength; the spikes are generally from 20 to 35 inches long, on some I counted up to twenty-five flowers. The colour is very variable, varying from pure white to dark purple red, and some are differently coloured and variegated, but bright and clear; the flowers last a long time, individually eight weeks, and during my stay of three months I saw many plants flower in April, May, and June. I only hope and wish I may get safely back again, and that the plants will arrive in good condition. . . ."

"Going by myself there would mean endangering my health very much, so I think it is better to wait till next year, when I can go with a trading expedition. On my arrival here, I had to pay 200 dollars as a shipwrecked man for my passage, for which I told you they at first demanded 280; now, on my telling them it was very mean to demand anything of a shipwrecked man, they gave me 30 per cent. deduction. Well, there is no doubt these people (the European traders) are the meanest people on earth, and I do not like them, and shall be glad when I can travel somewhere else. The natives are not bad, only somewhat troublesome; they think no more of killing anybody than your cook does killing a fowl, but they would not easily attack a Dutch trading party, knowing how well armed they are, especially when one takes a little care not to quarrel with them. They go almost entirely naked, and are the finest race of savages I have seen up to now.

"One of their idols, the god with golden eyes, I had to place in a case to accompany the plants, and take care of them on the journey; the savages wanted this, and I did it to satisfy their superstition. They always carry these gods in their battles. I put all the plants in baskets I had made by the natives here, and when all were packed, they gave a war-dance in front of them."

For sentimental reasons, we regret to say that the golden-eyed idol above referred to was the very first article sold by the sacrilegious auctioneers!

Can anyone fancy more violent contrasts, the lovely Orchids, the naked cannibals dancing amid the bones of their ancestors, the enterprising collector not oversure that he would not himself form part of

their next meal, and that his bones might not be added to the pile, the religious sentiment which prompted the despatch of the idol with the Orchids, its sale in a London auction room amid the laughter and jeers of a concourse of unsympathetic Orchidists? Surely here are the materials for a thrilling romance indeed!

FORESTRY.

FORESTRY FOR NOVEMBER.

Now that the young growths of forest and ornamental trees have matured their growth, and the wood become ripened and firm, no time should be lost in commencing planting operations when the weather is favourable. Leather ground in the deer forest and elsewhere at high elevations, where the ground is dry and hilly, should have particular attention, in order to push forward the planting as fast as is con-

up and pulverised with a pick previous to inserting the plants, and I am glad to say that the work proved a complete success. When viewing these plantations some few years ago, the *P. s. pumilio* had formed fine, healthy, spreading bushes, which showed the utility of planting it for covert in such situations. Of course it must be understood that this Pine never attains to the size of a timber tree; but for planting on damp boggy ground, and high exposed situations for covert, it has no equal among the Pine tribe. Stiff adhesive clay soils, and cold peat bog that retains excess of moisture, however, should not be planted at this season, as the roots of the plants are apt to suffer damage while lying in a dormant state in the cold soil during winter. In planting this class of ground, I have found the best results by using stout plants, and by inserting them in pits.

The pits may be opened now, or any time when convenient during frosty weather in winter, and the stuff excavated left in a rough state on the edge of

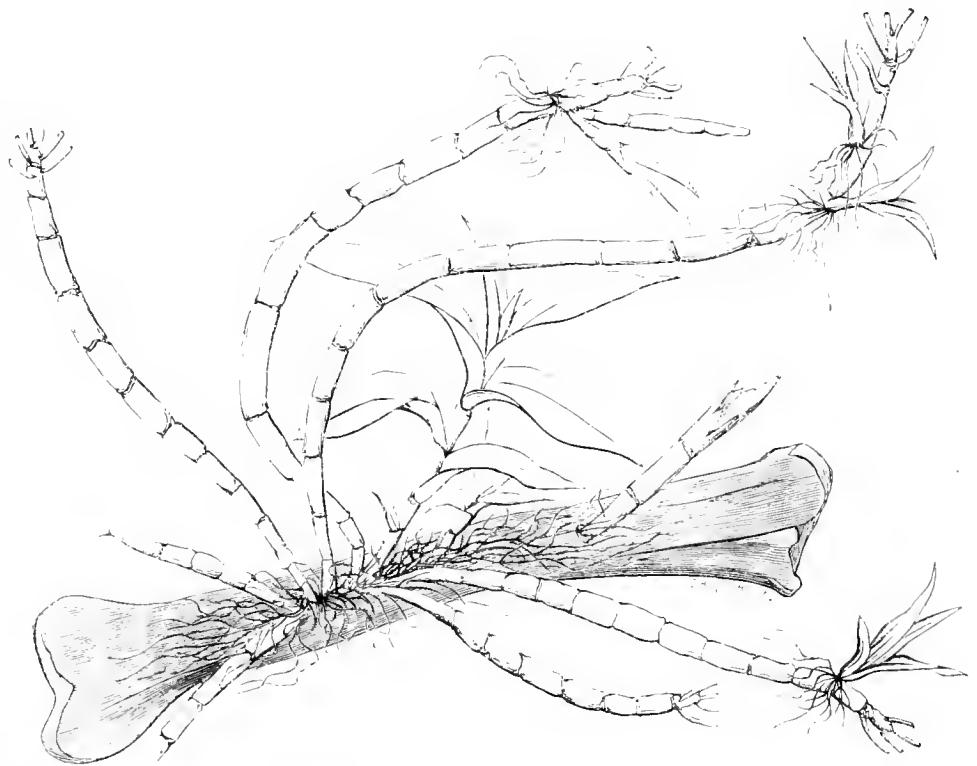


FIG. 89.—*DENDROBIUM PHALENOPSIS* VAR. *SCHODERIANUM*: SHOWING HABIT.

sistent with the proper execution of the work before the short days of midwinter. This is a most important point in connection with good forestry, as the work can be done at a cheaper rate in autumn than in winter; besides if the plants are inserted with care, very few of them perish or suffer damage, as compared with winter planting. Leather ground can be planted in a very efficient manner by the notch system of planting. Scotch Fir and Larch, two-year seedlings, one-year transplanted, are the best size of plants to use, as they have generally better roots than seedlings; and, besides, the wood of the stem is of a firmer texture than seedlings, and is therefore not so apt to get shrivelled up by frost during winter on exposed elevations.

Many years ago, when planting the deer forests for H.R.H. the late Prince Consort on the Balmoral estate, I used a number of *Pinus sylvestris pumilio* on hard heath ground, resting upon an impervious pan or till, where even the hardy Birch never attained to a useful size. In this case, I had the hard soil broken

the pit, exposed to the influence of the weather till spring, by which means it will become pulverised and converted into an active and fertile condition as food for the roots. On the other hand, hard hilly ground that can be planted on the notch system had better be broken up with a tramp-pick at the spots where the plants are to be inserted, by which means the plants will get a good start, and when once they become established they will break up the ground for themselves.

In the formation of ornamental plantations for immediate effect, the better plan is to trench the ground at once, as by so doing plants of larger size can be used, and the ground will present a furnished appearance at once. This, of course, entails extra expense at the outset, but in many cases under such circumstances this is but a matter of secondary importance. In all cases where the ground is of a damp or wet nature, let me impress upon the mind of the planter the utility of draining, as in all cases where it is necessary it should take precedence of all

other operations, and for want of this precaution, many plantations have exhibited a stunted appearance from the commencement.

In frosty weather, when planting is at a standstill, the felling and removal of heavy timber, as well as the thinning of young plantations, should be proceeded with, when hands can be spared from other work. Drains are now being choked up with tree

the year round; *Acrostichum decoratum*, which is very rare, the petioles covered with golden streaks, and the foliage bordered with similar blotches; *Panax excelsa*, a plant with ornamental foliage, which is almost evergreen, and flowers which resemble small coral berries; *Blaberopus venenatus*, D.C.; *Apocynum*, from Bengal, with beautiful clusters of pure white flowers, in shape like those of Peri-

These grow well in the pebbles and rubble, and the plants could not be more vigorous and sturdy if they were growing in the usual way. *Ch. de Bosschère.*

CHRYSANTHEMUM CULTURE.

I have visited the establishment of M. J. Ph. Dewolis, at Boitsfort-lez-Bruxelles. The reputation attained by this grower for the culture of these



FIG. 90.—A FORM OF FLOWER OF DENDROBIUM PHALENOPSIS. (SEE P. 641.)

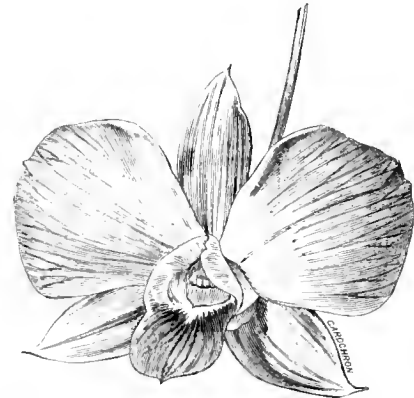


FIG. 91.—A FORM OF FLOWER OF DENDROBIUM PHALENOPSIS. (SEE P. 641.)

leaves and rubbish, all of which should be removed, as they are apt to impede the discharge of water, which, if allowed to lie in a stagnant state, will damage the roots of the tree, and lay the foundation for disease. These leaves should be collected into depôts here and there, and allowed to rot, when they will prove very valuable for manure. Make up gaps in old dilapidated hedges, and in cases where the soil has become exhausted, a little fresh soil and manure added will prove beneficial. Plant new hedges of Whitethorn, Beech, &c.; the Beech answers best for warm calcareous soils, and the Whitethorn for any ordinary texture of soil, providing it has been well prepared by trenching before inserting the plants. The seeds of forest and ornamental trees should be looked after at this season, and gathered as they become ripe, choosing a fine dry day for the purpose. When collecting the seeds of the Oak, the largest sizes should be preferred of *Quercus Robur pedunculata*. In the nursery department, vacant ground should be trenched or deeply dug, and left in a rough, open state, so as to admit frost during winter, and poor soil that has become exhausted, should receive a good dressing of thoroughly-decomposed manure to renew and increase its vitality. *J. B. Webster.*

winkle—the plant is very free-flowering; *Sterophoma unrantiaea*, with remarkable and unusual blooms, whose stamens project a considerable distance, giving flowers a very light appearance—the calyx is orange-coloured, the corolla golden-yellow.

flowers of autumn, and his successes at all the great exhibitions, have attracted considerable attention in the horticultural world. Five immense houses were literally filled with thousands of specimens, covered with large and beautiful heads of flowers, all grown on a single stem not more than 3 feet high. On a specimen of *Etoile de Lyon*, I counted twelve flowers each measuring over 12 inches across. Among the best varieties, those which in beauty and perfection of flower, and as plants are most suitable for cultivation, I should mention *Etoile de Lyon*, of a beautiful rosy-pink colour; *Madame Louis Leroy*, beautiful and white; *Wastoff*, pure white; *H. Lincoln*, a rather deep yellow; *Phitzer*, with many blooms, &c. We admired the fine blooms of the famous *Mrs. Alpheus Hardy*, but the plant leaves something to be desired. *Ch. de Bosschère.*

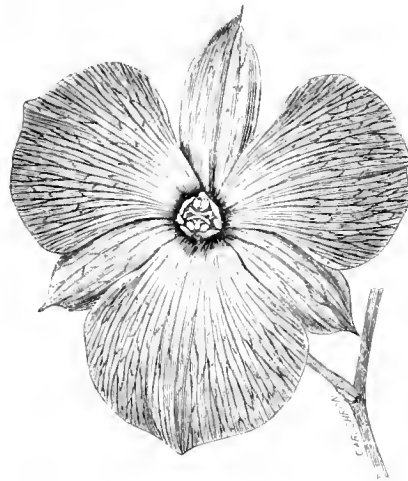


FIG. 92.—A PELIOSTRATE BLOOM OF DENDROBIUM PHALENOPSIS. (SEE P. 641.)

TOADS AND SLUGS.

It may interest you to know that my experience as an amateur horticulturist in this distant island exactly corresponds with that of French gardeners, as mentioned on p. 371 of the *Gardeners' Chronicle* for September 26, 1891. Since I bought my place, thirteen years ago, I have done all I could to preserve the toads on it, and in consequence I have never suffered severely from slugs, while other persons have had their gardens all but destroyed by them. In some gardens toads will not remain, even if introduced; these gardens suffer most from slugs. I may add that our slugs are especially fond of all the Orange tribe, and will ascend good-sized Orange trees to feed upon their leaves. *J. J. Bowrey, Kingston, Jamaica, W.I.*

JUBEA SPECTABILIS.

Someone has written to you in praise of the hardness of this Palm. Let me caution your readers on the point of its slow growth, and the want of beauty at certain ages. I planted several *Jubeas* thirteen years ago in a patch of *Phoenix canariensis*, of *P. dactylifera*, of *Pritchardia filamentosa* (which our gardeners here now begin to call "Washingtonias"), *Acacia dealbata*, Tangerine Oranges, and *Cocos australica*. My soil is good, and climate

FOREIGN CORRESPONDENCE.

BRUSSELS.

On the occasion of a visit made to the houses of the Botanic Garden at Brussels on the 10th of November, a white variety of *Meyenia erecta* was remarked, which was of very graceful habit; *Oncidium varicosum Rogersi*, with large blooms, the lip much developed and deep, bright yellow; an uncommon variety of *Cattleya pumila*, remarkable for the size and regularity of the flower—the lip very deep purple, and parted in the centre by a broad band of pale pink; *Clerodendron squamosum Kämpferi*, a very old plant, which blooms nearly all

In the Orchid-house were noticed a very great improvement. Except during the flowering-season, Orchids are not very beautiful. *M. Lubbera* grows *Vandas* and *Sonerilaa* in sphagnum moss, where they do perfectly, and were in full bloom when I saw them. The effect is charming. Who knows whether it would not be possible by this means to grow in hot-houses, in sphagnum moss, those gems which are known as *Bertolonias*. On the stage in the Orchid houses, *Begonias*, *Ferns*, *Marantas*, and other plants with ornamental foliage, are used for borderings.

magnificent; and the Canary Palms, Date Palms, Pritchardias, and Acacias, are now great trees, and the Tangerines fine bushes, laden with fruit, but the *Cocos australica* and the *Jubæas* remain small, though the latter are extremely healthy, and still pretty on the ground. My friend, M. Emile Ollivier, has some *Jubæas* of sixteen years' growth, of which most have remained small and pretty. One has shot up, and is certainly no longer "spectabilis," but a fright, though it is healthy. I shall not plant another.

While I am writing, may I add that the gardeners at the Jardin d'Acclimatation at Hyères are now selling a *Cocos robusta* which is more hardy than the other *Cocos*, and which is the plant sold at other florists on the coast as *Cocos australica*. It is not the *Cocos australica* which we used to buy on this coast up to ten years ago, and is glaucous, not green. *D., Toulon.*

HIGHBURY, BIRMINGHAM.

In looking through the gardens attached to the residence of the Right Hon. Joseph Chamberlain, M.P., I saw in bloom a very old but seldom-seen plant, *Amasonia punicea*, described in Loudon's *Hortus Britannicus* as of the order *Verbenaceæ*, a native of Trinidad, introduced in 1825, and shown by Messrs. J. Veitch & Sons, Royal Horticultural Society, Sept. 9, 1884, when it was certificated. It has long pendent spikes of rich crimson bracts, from which hang tube-shaped flowers, white, tipped with green. Mr. Cooper has some good specimens of *Pteris serrulata Smithiana* in the fernery, and there can be no doubt as to this variety being a decided acquisition. In the long corridor connecting the numerous Orchid and other houses with the rock-fernery and the conservatory, a seldom-seen greenhouse shrub is now in flower, *Ardisia Oliveri*, with corymbs of rosy-lilac flowers; and in one of the stoves the noble *Anthurium leodiense* is in bloom.

In the conservatory are two fine specimens, in full bloom, of the superb *Lilium Wallichianum superbum*, referred to in the *Gardeners' Chronicle* of Oct. 24 by Mr. J. G. Baker, and to which I must refer your readers for the full information he gives regarding it, with its pale primrose flowers with rich cream throat. It is easily propagated from the numerous bulbils at the axils of the leaves, and it is very free flowering. In the conservatory also are several specimens of *Lilium tigrinum splendens*, rich in their scarlet colour, and with from fourteen to sixteen blooms on a stem. These, with a lot of lancetium varieties, help materially at this time of the year in giving variety, and adding beauty to the autumn indoor flowers. Winter-blooming *Begonias* are also cultivated here, and amongst them, varieties such as *Valleriana*, a lovely and free-blooming, deep rosy-scarlet flower of compact habit; *Moonlight*, a small-flowered very free-blooming white, of close habit; *semperflorens rosea*, a tall-growing kind, with shaded rosy-pink flowers; and *Arthur Mallet*, and *B. incarnata var. papillosa*—the two latter with rich dark foliage and pink flowers. These are all easily cultivated, and most acceptable winter-blooming plants. *H. D.*

SHELTER AND SEA BREEZES.

In a garden by the sea at Douglas, Isle of Man, I had an opportunity early last autumn of comparing the hardiness of various plants and flowers, and their power of enduring sea breezes. A sea-captain, fond of flowers, has made his house under the cliff in a particularly snug spot, well sheltered, except on the south side, where the sea-wall is about 40 yards distant, the sea itself, when rough in its humour, sometimes coming rather nearer. It was on Aug. 28 that the garden in front of the house, nicely fenced from the street, attracted my notice as the smartest garden in the neighbourhood, and the cause of this superiority was not far to seek, for the worthy captain was at work amongst the flowers—and flowers, we all know, prove exceedingly grateful for the personal care of those who love them. There had been a

storm, which had guillotined all the tender plants that happened to be looking over the wall at the time of its occurrence. The captain was mourning for several of his favourites, which is the way with human nature; but it was not, perhaps, quite reasonable, since he still retained twenty blessings for each one removed. Some plants can bear a blast from the sea far easier than others. The *Dahlia* can bear but little either of rough wind or frosts. Long as it may be since the *Dahlia* first appealed to my sense of beauty, it never delighted me more than this year. I had seen it in many noble gardens during the late summer, but a large bed in Dulwich Park pleased me more than any other last season. I shall not soon forget pausing long to look at this bed for the last time. It was the largest of several handsome beds on the lawn of one of the entrance lodges, and it was pleasing to think how many people can now enjoy good gardening in our public parks. The date was October 30, and the day was bright and sunny. There had been already some slight frosts, and a catastrophe was not far distant. In the night there came a sharper frost, and next day the beauty of the *Dahlias* was a dream of the past. The bed had been blackened and smitten with ruin.

In the captain's garden, the *Dahlias* above the wall, as well as the *Heliotropes*, *Tropæolums*, and *Calceolarias* were much cut, wholly destroyed in fact by the stormy blast that blew before August 28. *Sycamores*, in the full blast, were cut; but a very little shelter—a slight screen sufficient to strain the brine and break the force of the wind, had sufficed to preserve many of the flowers, as well as shrubs and trees. All the low specimens under the walls and hedges of the captain's garden, and those of his neighbours, were safe. The *Asters* and *Pelargoniums* and even such dainty flowers as the *Phlox Drummondii*, were still brilliant. A very little shelter had sufficed to keep in health and safety such plants as the *Roses*, *Virginia Creeper*, *Veronica*, *Convolvulus*, *Fuchsia*, *Delphinium*, and others, so that enough flowers remained to delight their owner's heart, and I hardly think he would grieve long for the lost specimens after their removal to the rubbish heap. The captain's garden behind the house is terraced, and absolutely sheltered from the north. He was kind enough to show me up the steep steps which lead to his kitchen garden, which is a limited space on a ledge above the level of his roof. Here *Jargonelle Pears* ripen on the wall, and one of the trees was loaded with ripe fruit, which the wasps seemed to appreciate. The following plants were growing luxuriantly on the face of the cliff wherever they found sufficient soil to root in, *Scotch Fir*, *Gorse*, *Tamarisk*, *Privet*, *Daphne Mezereum*, *Escallonia*, *Aucuba*, and *Ivy*. Among these the three first-named and the last are probably the most hardy, and the best adapted for the formation of screens to break the wind near the sea. Common *Ivies* are extremely hardy.

In the garden of an adjoining hotel, having a breastwork in front, concealing and sheltering it, the bedding plants had not suffered. An oblong bed of rose-coloured *Pentstemons*, edged with dark *Pansies*, was exceedingly handsome. The *Hex* trees and *Rhododendrons* in the same garden remained uncut by the storm. Above the captain's house, on the top of the cliff, is a commercial garden attached to the Industrial Home for Destitute Children, where the eldest boys among ninety children, mostly very young, with the help of one man, dig and cultivate 6 acres of ground. I shall not enlarge on the vegetables, the most profitable of which—early *Potatoes* and *Peas*—were over on August 28; nor do the *Strawberries* belong to my subject, but I may notice the flower garden in front of the house. A thick screen of several sorts of trees had served to protect this garden, which did not therefore offer much material for comparison; but it may be useful to mention that the hardiest *Pelargonium* on this exposed site is the tough old *Bijou*, green tipped with white, and known to the gardeners of a past generation. The fancy sorts of modern date are much less hardy. *H. E.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

SEA KALE.—All of the plants should be cleared of their leaves, the soil hoed and raked, and afterwards drawn up in the form of a ridge over the plants, as protection to the crowns from frost. Continue to place from time to time roots in heat, so that no break in the supply shall occur.

HORSERADISH.—If this crop has been grown as recommended by me in the spring of this year, the roots may now be lifted. To do this expeditiously and well, dig out a trench at one end of the bed, and nearly as deep as the roots go, and fork them out entire. Care is needed in doing this, as every bit left in the earth will grow, and give much trouble afterwards. The thin portions ("thongs") of the roots should be broken off, and the useable roots laid-in in some handy place out-of-doors, or stored away in sand under cover. Sets for future planting may be made from the straight bits of the thongs in the course of the winter. In preparing the sets, the small root-fibres should be rubbed off, to prevent the development of side-roots as far as possible, leaving about 2 inches at the bottom untouched. The sets may be cut 10 inches in length, and buried close together in the earth until wanted for planting. Ground for this crop should then be well manured and trenched, the dung being put at the bottom of the trenches.

JERUSALEM ARTICHOKEs.—The stems of these should now be cut down, and a sufficient quantity of tubers lifted for a fortnight's supply, and stable-litter or tree leaves strewn over those left in the ground.

POTATOS.—Tubers of the earliest varieties for forcing may be put into shallow boxes or pans filled with leaf-mould or any kind of light soil, placing the tubers 4 inches apart. Early *Potatos* may be forced in large boxes, &c.; but in any case the plants, when growing, should be kept close to the glass of the house or pit, and afforded air in sufficient amount to prevent the stems becoming drawn. Sets of the favourite early varieties may be spread out on leaf-mould or cocoa-nut fibre refuse in gentle heat to start them for planting out on hotbeds.

BRUSSELS SPROUTS, CABBAGES, ETC., will be benefited by having the dead and yellow leaves removed, which, if left on the plant, decay, and in the case of *Sprouts* injure them, besides affording hiding places for insects. *Pea* and *Bean* sticks may be pulled up, storing those which are still of use. Seed-pods of *Beans* should be gathered and dried. Collect fallen tree leaves which may have been blown amongst standing crops, as they occasion dampness by preventing free circulation of air. Sweep and roll paths weekly when made of binding gravel. *C. J. Waite, Glenhurst, Esher.*

FRUITS UNDER GLASS.

VINES IN POTS.—If the canes for pot-work have been treated as advised in former *Calendars*, and the bottom-heat bed remade with fresh *Oak* or *Beech* leaves, and turned over occasionally, so as to secure a steady warmth of 65° to 70°, the first important steps will have been taken. I prefer leaves to stable-litter and leaves, as if the quantity of the latter is large, the heat is apt to get too violent, and the roots to be injured. If at all dry, thoroughly moisten the mass of soil in the pots before plunging in the hot-bed. A temperature of 50° at night will be sufficient for the start, with 10° to 15° rise by sun-heat, the lesser degree being sufficient on sunless days. Damp the canes with tepid water several times daily, more or less, according to the state of the weather, and take care not to saturate the roots with water from the syringe, the watering at the commencement of forcing being usually as much as the plants need for a time, the bed itself giving off a large amount of moisture. Ventilation will be scarcely required for the next six weeks; indeed, our pot *Vines* are kept closer and a few degrees warmer than advised, this being necessary with our deficient sunlight, if ripe *Grapes* are required in March.

PERMANENT VINES.—These have been recently started, and the canes bent downward, to secure a regular break. If a small pit or house, with narrow inside borders can be devoted to these early *Vines*, it is of service, as then the large vineries need not be forced to the detriment of the *Vines*. If borders exist, the canes may be planted out to succeed

those in the pots, and afford a supply of fruit in April and May. The same kind of treatment as that afforded the pot Vines is suitable for these. If a layer of fresh leaves can be placed on the borders, much good is done by the warmth this affords and the moisture that is occasioned. I force these early Vines for two years, and then destroy them.

SUCCESSION VINERIES.—The Vine should be pruned at this season, and all necessary cleansing of the bark done. Do not scrape the Vines hard; it is a pernicious practice, and especially when a sharp knife is used for the purpose. Only the loose bark should be removed, and this is readily done by rubbing it with the hand. Wash the rods, after cleaning them, with warm water and soft-soap; and for mealy-bug, dress with Gishurst's Compound Soap. I have also used soluble petroleum mixed with clay with good results, but this must not be confounded with the ordinary paraffin of commerce, which is dangerous if not used with very great care. Gas-tar, if used in small quantities, is sometimes recommended as a winter dressing, but I do not advise its employment, it often doing more harm than good in inexperienced hands, especially to young Vines. When the pruning is completed, if the wood is at all soft, the wounds made with the pruning-knife should be dressed with styptic, and it is always advisable to do this when large branches have been cut out, or large old spurs removed. In houses where ripe Muscat Grapes are hanging, fire-heat must be sparingly used, and plenty of air afforded, to mature the young wood. If a crop of Black Hamburgh Grapes is required in the month of May, the vinery should be now got in readiness for starting the canes, the loose soil removed from the border, and replaced with fibrous loam, bone meal, or $\frac{1}{2}$ -inch bones and Thomson's Vine Manure mixed together. The Vines may be started in the first week next month. Other vineries, with ripe Grapes hanging, will need close attention, or the decay of the berries will set in rapidly. Keep the temperature in such vineries at 50° to 55° in dull weather, and try to have fresh air admitted to the house early in the forenoon, and to be enabled to do this, sufficient heat must be maintained in the heating apparatus to keep the temperature at night at the desired point. The bunches should be examined for decaying berries once weekly. Decaying leaves should be cleared away as soon as they part freely from the shoots, and the house kept as dry as possible. In cold weather 45° is sufficiently high. The Grape-room should be got in readiness for Black Hamburgh Grapes, which are better if they are cut, and placed in bottles during the course of next month. *G. Wythes, Syon House, Brentford.*

THE HARDY FRUIT GARDEN.

PLUM TREES.—These trees, when on walls, may now be pruned, and regulated if they are unequally balanced. In pruning the Plum, it is advisable to lay-in much young well-ripened wood, as on these the finest fruits are produced. There is no better mode of training Plums than the fan, as it is not only the best for the production of fruits, but for the renewal of branches where these have died or been cut out. The spurring-in of the weaker as also the strong shoots, especially foreright shoots, to two buds, should be carried out over all parts of the trees, and young wood neatly secured to the walls. Transplanting or part root-lifting should be resorted to in the case of strong-growing trees if unfruitful, a little fresh soil being scattered over the roots in re-planting, or if the staple is still in good heart the same will do without admixture. In pruning and regulating the roots, incisions should be made here and there to induce the growth of new roots. A sweet and moderately enriched soil, made firm about the roots, suits the Plum; and if a fair proportion of burnt earth or mortar rubble be added, so much the better in very stiff soils. Scale is one of the worst of Plum pests, and infested trees should be dressed occasionally with petroleum, water, and soapsuds or soft-soap, a safe proportion of petroleum being 1 gill to 4 gallons of suds; but for winter dressings the mixture may contain more petroleum with safety to the trees. *H. Markham, Mereworth, Maidstone.*

THE ORCHID HOUSES.

THE EAST INDIA-HOUSE.—The Butterfly Orchid, *Oncidium Krameriana* and *O. papilio*, are now in flower in this house. These two plants, almost more than any other, are remarked by visitors who have no special knowledge of Orchids; and for

amateurs, they should be amongst the first plants purchased, as being of easy growth and very free-flowering. I have grown them upon wood-blocks, on rafts, in baskets, pots and pans, but the last two I find to answer the best, and the ordinary plant-pot is as good as any; the plants should be afforded much light at all seasons, and during the winter they should be placed almost close to the glass. A moist place in the house and free root-waterings during growth are essentials. The only insect which is ever known to infest them is white scale, which if once allowed to remain on them long does much injury. These insects can be got rid of with a hard brush and soft-soap and rain-water; but the remedy will injure the plants if it has often to be had recourse to. The flower-spikes of *Phalenopsis* are now getting forward, although as yet no flowers have expanded. These Moth Orchids should now be watered with the greatest care, there being in the period from November to the end of February more than ordinary danger from affording them too much water; therefore keep them on the dry side. Occasionally weak guano-water, or farmyard drainage, may be afforded the plants. I have used more of the last-named manurial aid during the past season than ever before, and with good results. We should find *Phalenopsis* in better condition if fewer flowers were allowed to remain on small plants. Growers should, so soon as the flower-spikes begin to branch out, pinch out some of the branches, so that the flowers left may be large, and then there would be sufficient energy left in the plants to enable them to start away early in the growing season, and growth is always satisfactory when it is made early in the season. Where *Phalenopsis* are stood on stages with tables or stands under them, the latter should be syringed every morning once or twice if they are small of size, but much will depend upon the form of house and the position of the hot water-pipes. Plants of *Vanda Sanderiana*, which have finished flowering, should be rested by keeping them dry, but not too dry; and should the plants lose colour, or shrivel, water should be afforded quickly, as once a bad state of health is set up, a long time is lost in recovery.

Odontoglossum Roezlii is now growing fast, but much water must not be afforded the plant at the roots, else the small leaves on the current year's growth will be likely to turn yellow, and drop off. It is a plant which likes a very moist atmosphere, and those who have stove-houses will do well to place their plants of *O. Roezlii* in them, the general surroundings being there more in accordance with the requirements of the plant than the Orchid-house at this time of the year. The temperature for the different divisions should be about 60° to 63° for the East India-house, 58° for the Cattleyas, 55° for the intermediate-house, and 45° to 50° for the cool-house. *A. G. Catt, Parkfield, Hallow, Worcester.*

PLANTS AND THEIR CULTURE.

TROPEOLUM BALL OF FIRE.—This is an indispensable plant where cut flowers are required in large quantities during the winter season. It may be trained loosely on the rafters of the warm greenhouse, allowing it to hang about in a *négligé* fashion, which shows off its scarlet-coloured flowers very prettily. The plants may be grown in pots of 10 or 12-inches in diameter, according to the size the plants are required to make; and the compost may consist of fibrous loam three parts, leaf-soil one part, and sufficient silver-sand to keep the whole mass porous.

JASMINUM GRANDIFLORUM.—This is a most useful plant for flowering in the winter, and whose blooms last a long time after being cut from the plant. Grown in smallish pots, it is a very useful subject for standing in apartments, but I always find it to be the most useful when planted out in narrow borders in a mixture of three parts good fibrous loam, one of peat, with some small portion of sand, when it will continue to bloom the whole winter.

LINUM TRIGYNUM.—This is another valuable plant in the winter season, grown either in pots or planted out in the conservatory border. Where the latter plan is adopted, it affords plants of large size, but I prefer to grow it in pots, as the plants are not then so liable to be infested with red-spider, which soon spoil the look of the foliage, if they are allowed a foothold for only a short space of time. Plants grown in pots should be assisted occasionally with weak, clear soot water, which imparts a rich green colour to the leaves, causing them to contrast agreeably with the bright yellow flowers.

BIGNONIA CHIRERE.—This plant, when well grown, gives abundance of flowers from this time until the end of January, and is one of the best plants we have for training on pillars, covering walls, &c.

WINTER-FLOWERING BEGONIAS.—The different species of the *Begonia* suitable for blooming during the winter months, and which have been grown on as advised in previous Calendars, will now furnish a good supply of blossoms. It is good practice to introduce half of the stock of these plants into a house having a little higher temperature than the one they have hitherto occupied some three weeks before the remainder, as by so doing there will a longer succession of blooms obtained. Let the plants have all the light possible, and apply weak manure water frequently, which will greatly increase the size of the blooms and trusses. Many of the late-sown seedlings of *B. tuberosa* will continue to bloom for some time longer if they are kept in light positions, and care taken not to afford them much water. *R. Milner, Penrice Castle, Swansea.*

THE FLOWER GARDEN.

HERBACEOUS BORDERS.—Any remaining old flower-stems should be cut down to within a few inches of the ground, and put a light dressing of short manure between the plants, and point it into the ground with a five-tined fork. Take care not to go deep enough to injure bulbous and other plants whose stems have died down naturally. A surface-dressing of leaf-mould might also be applied with advantage to the occupants of the borders.

HARDY FERNERIES.—In most gardens shady, and perhaps objectionable nooks, may often be found, that might be rendered interesting and beautiful spots, by using old roots, logs, butts of trees, rugged stones, clinkers, or burrs from the brick-yard, and planting some Ferns. In placing the materials, observe that each block of wood or stone recedes instead of projecting, so that the plants in the interstices may derive full benefit from rain. Avoid at the same time formality of outline and surface. When completed, the following varieties may be planted:—*Allosorus crispus* (Mountain Parsley Fern), *Asplenium adiantum nigrum* (Black Maidenhair Spleenwort), *A. trichomanes depauperatum*, *Athyrium filix-femina* (Lady Fern), *A. f.-f. crispatum*, *A. f.-f. dissectum*, *A. f.-f. Fieldiae*, *A. f.-f. furcillatum*, *A. f.-f. gracile*, *A. f.-f. multifidum nanum*, *Blechnum spicatum* (common hard Fern), *B. imbricatum erectum*, *Cystopteris alpina* (Alpine Bladder Fern), *Lastrea cristata* (Crested Buckler Fern), *L. filix-mas* (male, or common Buckler Fern), *L. f.-m. Daddii*, *L. f.-m. furcans*, *L. f.-m. grandiceps*, *L. polydactyla*, *Osmunda regalis* (Royal Fern), *Polypodium dryopteris* (Oak Fern), *P. hibernicum* (Irish Polypody), *Polystichum aculeatum* (common prickly Shield Fern), *P. angulare* (soft prickly Shield Fern), *P. angulare cristatogracile Jacksonii*, *Scolopendrium vulgare* in variety. In planting, make the soil moderately firm about the plants, and give water to settle the soil about the roots.

GENERAL WORK.—This consists of the cleaning up of fallen leaves, the rolling of lawns, repairing and re-gravelling of walks and roads, the levelling and relaying of turf, mulching Rose-beds where not already done, &c.

BEDDING PLANTS.—Where there is no better accommodation than cool-pits provided for the wintering of Pelargoniums, great care is necessary to save even one-third of the autumn-struck plants from damp. Therefore, plenty of air should be given on all favourable opportunities to dry the plants and their surroundings; and with this object in view, a mixture of lime and soot might with advantage be deposited among the plants, and between the latter and the brickwork. A covering of Fern and mats, or other protecting material, must be put over the glass at night, to prevent frost from reaching the plants. Give plenty of air during mild weather to frames in which *Calceolarias*, *Pansies*, and *Leucophytons* are growing. Should mildew make its appearance on *Verbenas* or other plants, lose no time in dusting over the affected leaves, while damp, with flowers-of-sulphur. Bedding-plants being wintered in Vineries, Peacheries, and other heated structures, should also have abundance of air, and be kept on the dry side at the roots, to prevent them from making growth before spring. *H. W. Ward, Longford Castle, Salisbury.*

EDITORIAL NOTICES.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

THURSDAY,	DEC. 3—	Linnean Society.
FRIDAY,	DEC. 4—	Dundee Horticultural Association.
SATURDAY,	DEC. 5—	Preston and Fulwood Horticultural Society.

SALES.

MONDAY,	Nov. 30—	Dutch Bulbs, at Protheroe & Morris' Rooms. Important Sale of Nursery Stock, at the Nurseries, Richmond, Surrey, by Protheroe & Morris (four days). Dutch Bulbs in large quantities, at Stevens' Rooms.
TUESDAY,	DEC. 1—	Lilies, at Protheroe & Morris' Rooms.
WEDNESDAY,	DEC. 2—	Azaleas, Palms, Roses, &c., at Protheroe & Morris' Rooms. Roses, Fruit Trees, and Border Plants, at Stevens' Rooms.
THURSDAY,	DEC. 3—	Dutch Bulbs, at Protheroe & Morris' Rooms. Roses, Fruit Trees, and Border Plants, at Stevens' Rooms.
FRIDAY,	DEC. 4—	Imported Orchids from Sander & Co., at Protheroe & Morris' Rooms.
SATURDAY,	DEC. 5—	Dutch Bulbs at Protheroe & Morris' Rooms. Liliums, Gladioli, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41° 3.

Horticultural Education.

WHILE the subject of technical education in Horticulture is occupying so much attention, we are pleased to be able to lay before our readers the views entertained on the subject by so highly competent an authority as the Director of the Royal Gardens, Kew:—"You ask me to communicate to the pages of the *Gardeners' Chronicle* something on the subject of Horticultural Education. This is undoubtedly a compliment, seeing that it obviously involves the not inconsiderable assumption that I know something about it, or, at any rate, have something to say on the subject which may be worth attention.

I am by no means unwilling to do what I can. But though my own opinions on the matter are tolerably clear, the various aspects in which the question presents itself at the moment are, to tell the truth, a little mixed. One has got to fix distinctly in one's mind whom, in the first place, one proposes to educate, and with what object. Some of my friends say gardeners; others "younger sons;" and here I am reminded that the ladies must not be forgotten. Others, again, insist that intending colonists are the people to be taken in hand; some, on the other hand, suggest that the future peasant-proprietor is the person to be looked after with an eye to fruit-culture and the *petite culture* generally. Lastly, there are those who would be content to disseminate a general interest in the subject by peripatetic and popular lectures, addressed to any local audience that may be inclined to attend them.

It will be admitted that we have here a rather large field for discussion, and, unless we settle

what particular item we are taking in hand, I have found that we are apt to get rather at cross-purposes.

I had got as far as this in the sorting out of my ideas, when the August number of the *Agricultural Gazette* for New South Wales came into my hands. Here I found a letter from Professor HUXLEY on a subject closely analogous, which struck me as altogether admirable. It has made a boomerang-like flight to the Antipodes, and back again. But it is evidently none the worse for the journey, and I do not see why I should not launch it on its travels again:—

In the course of a paper on technical education, before the Easingwold (England) Chamber of Agriculture, on April 10 last, Mr. J. HARRISON read the following letter from Professor Huxley, which appears also in the *Agricultural Gazette* of England:—"I am afraid that my opinion upon the subject of your enquiry is worth very little, my ignorance of practical agriculture being profound. However, there are some general principles which apply to all technical training. The first of these, I think, is that practice is to be learnt only by practice. The farmer must be made by thorough farm work. I believe I might be able to give you a fair account of a Bean plant, and of the manner and condition of its growth; but if I were to try and raise a crop of Beans, your club would probably laugh consumedly at the result. Nevertheless, I believe that your practical people would be all the better for the scientific knowledge which does not enable me to grow Beans. It would keep you from attempting hopeless experiments, and would enable you to take advantage of the innumerable hints which Dame Nature gives to people who live in direct contact with things. And this leads me to the general principle which I think applies to all technical teaching of schoolboys and schoolgirls, and that is, that they should be led from the observation of the commonest facts to general scientific truths. If I were called upon to frame a course of elementary instruction preparatory to agriculture, I am not sure that I should attempt chemistry, or botany, or physiology as such. It is a method fraught with danger of spending too much time and attention on abstraction and theories, on words and notions, instead of things. The history of a Bean, of a grain of Wheat, of a Turnip, of a sheep, of a pig, or of a cow, properly treated, with the introduction of the elements of chemistry, physiology, and so on, as they come in, would give all the elementary science which is needed for the comprehension of the processes of agriculture in a form easily assimilated by the youthful mind, which loathe anything in the shape of long words and abstract notions, and small blame to it. I am afraid I shall not have helped you very much, but I believe that my suggestions, rough as they are, are in the right direction.—Yours, &c.,

"(signed) T. H. HUXLEY."

Now, with every word of this, I, for my part, cordially agree. It is just what I meant to say, only said a great deal better. I do not propose to employ it as a stalking-horse, but I am glad to use as a text for some further observations on a future occasion a piece of sound, vigorous common sense. *W. T. Thiselton-Dyer, Royal Gardens, Kew.*

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, December 3, at 8 P.M., when the following papers will be read:—1, "A Contribution to the Freshwater Algae of the West of Ireland," by W. WEST, F.L.S.; and 2, "The Tick Pest in Jamaica," by Dr. W. H. W. STRACHAN.

"ICONES PLANTARUM."—The third series of HOOKER'S *Icones Plantarum* (vols. xi—xx of the whole work) is now complete, and the BENTHAM trustees, who are continuing the work under the editorship of Professor D. OLIVER, are offering a limited number of sets of this series of ten volumes

for five pounds the set. It contains figures of a thousand new plants, including the most interesting discoveries of the last thirty years, and the most striking of the new genera described by BENTHAM and HOOKER during the progress of their *Genera Plantarum*. As the whole impression consists of only 250 copies, the work will soon become un-purchasable. Thanks to the provision made by the late Mr. BENTHAM, the trustees are issuing a fourth series at the rate of one volume of 100 plates annually, at the very low price of sixteen shillings. Persons wishing to secure a copy of the third series should apply at once to DULAN & Co., 37, Soho Square, W.

ALPINE PLANTS.—M. CORREYON is about to publish, through M. KLIENSTOCK, of Paris, an *Iconographie des Plantes Alpines*, and *Les Plantes des Montagnes*.

"REICHENBACHIA."—The last issued part surpasses its predecessors, even in the artistic beauty of its plates. The figures of *Lælia purpurata*, *Selenipedium nitidissimum*, and *Cattleya labiata* (MENDEL'S var.), are very fine illustrations alike of the talent of the artist and the skill of the chromo-lithographer. Mr. ROLFE is responsible for the botanical portions of the text.

Lælia purpurata, *Reichenbachia*, tab. 25.

Masdevallia Harryana splendens, *Reichenbachia*, t. 26.—This magnificent species is a native of the Eastern Andes, at heights from 7000 to 10,000 feet, spreading in uninterrupted masses for miles, covering acres upon acres of the upland slopes, growing in the partial shade afforded by the low shrubs that abound in the place. When in flower, these masses of *Masdevallias* are said to present one of the most striking floral sights which it is possible to behold. The species is extremely variable in colour. The one now figured is remarkable for the large size and deep purple colouring of the flowers. It is distinguished from *M. coccinea* mainly in the fact that the dorsal sepal is always reflexed in *Harryana*, whilst in *coccinea* it is never so.

Selenipedium hybridum nitidissimum, t. 27.—A hybrid raised by Mr. COOKSON out of the rosy variety of *S. caudatum* by pollen of *S. conchiferum* ×, the latter a hybrid out of *S. caricinum* by *S. Koezlii*. It is a bold, handsome, free-flowering variety.

Cattleya Mendeli var. *Measuresiana*, t. 28.—A truly superb form of *C. labiata*, grandly represented by Mr. MOON. The species, especially the finer varieties of it, are getting rare in their native localities—a fact hardly to be wondered at on looking at this fine plate. Messrs. SANDER have lately paid £200 for a single specimen growing on a tree.

A TRIPLE TROPHY WINNER.—At the Barnstaple and North Devon Autumn Fruit and Flower Show, held on November 3 and 4, Mr. Wm. HARRIS, the gardener to T. J. DENNIS, Esq., Bradford House, Barnstaple, was successful in winning the Silver Cup for the best collection of Grapes, this being the third time in succession that he has won this trophy.

POISONING BY WEED KILLER.—We have another fatality to add to those already recorded in consequence of the careless use of "Weed-killers." In this case a man died from partaking of Gooseberry wine stored in a cask which had previously contained weed-killer. As a result of the analysis, it was stated that the cask contained enough arsenic to kill 3000 adult persons! It is quite evident that much more stringent precautions should be taken in the sale and in the use of these preparations than is at present done. We know that it is almost impossible to gauge the extent of human folly and carelessness, but if the sale and purchase of these dangerous substances were hedged in by a few wholesome obstacles, the results would not be so lamentable.

CARDIFF CHRYSANTHEMUM SHOW, NOVEMBER 18, 19.—The fifth annual exhibition took place in the Park Hall, and notwithstanding the

wretched weather of the first day, there was on the whole a very fair attendance of visitors to the show. In the open classes, Mr. S. TRESSEDER, Cardiff, won easily, and in addition to taking 1st prizes for a group, and for twenty-four blooms, he secured the Certificate of Merit, and the Silver Medal of the National Chrysanthemum Society. Mr. F. CAASE, Cardiff, was 2nd for a group in the open class; he was also 1st with wreaths, crosses, and bouquets. Table plants were very numerous, and those having coloured foliage were very bright looking: 1st, Mr. A. CURRY, gr. to E. M. HANN; and Mr. T. CLARK, gr. to Colonel Hill, was 2nd. Besides the show of Chrysanthemum plants and blooms, there were exhibited plants of the stove and greenhouse, collections of Pears, Apples, Grapes, &c. The entries in

Titan is more like a ball of ostrich feathers than a flower, and is exceedingly lovely. In contrast to this might have been seen some varieties hardly larger than Immortellea.

GARDENING AT MALAGA.—The British Consul at Malaga, reporting on the trade of the consular district, and referring to openings for British commerce, says:—"There is also room for one or two really good English nursery gardeners, who will do their work systematically. There is a great demand to go on as their fathers did before them. Quantities of flowers are sent away to places inland and to Madrid; but the plants once in the ground, are allowed to do much as they please, and, thanks

MR. HIBBERD'S BOOKS.—Messrs. W. H. & L. COLLINGRIDGE, the proprietors of the *Gardeners Magazine* (the editorship of which was under the late Mr. SHIRLEY HIBBERD), have purchased of the Receiver of the estate of Messrs. Groombridge & Son, Limited, the whole of the stock, copyright, engravings, and stereotype plates of the well-known gardening books by the late Mr. SHIRLEY HIBBERD; and will in future supply the trade. Many of the books are at present out of print, new editions of these are in preparation:—*Brambles and Bay Leaves*; *Field Flowers, a Handy book for the Rambling Botanist*; *Profitable Gardening, a Practical Guide to the Culture of Vegetables, Fruits, &c.*; *The Amateurs' Greenhouse and Conservatory*, *The Amateurs' Flower Garden*, *The Amateurs' Kitchen Garden*, *The Amateurs' Rose Book*,

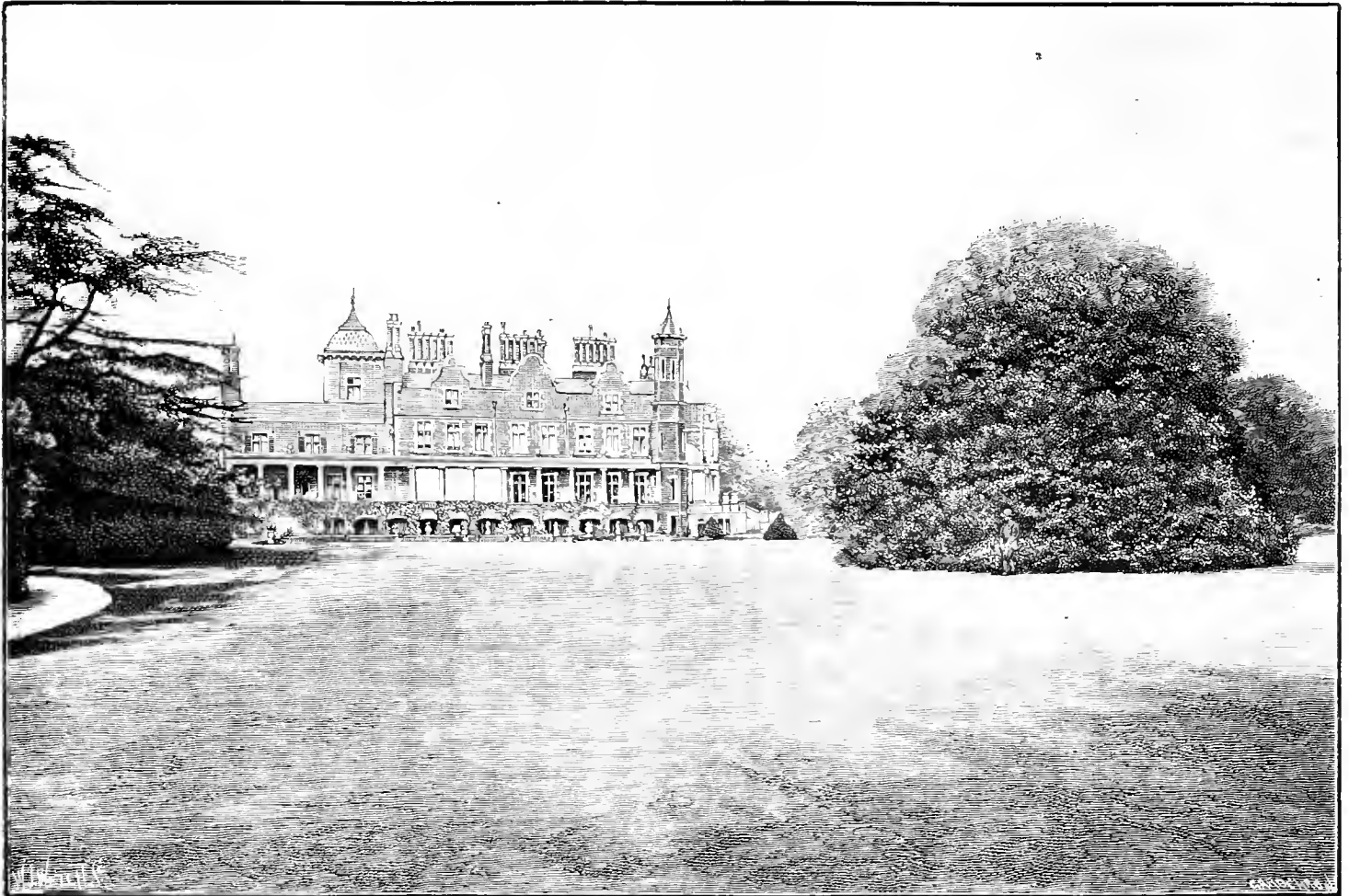


FIG. 93.—ABRAHAM HALL, CAMBRIDGESHIRE. (SEE P. 648.)

the cottagers' classes were fairly numerous, and the exhibits generally of good quality.

A CHRYSANTHEMUM SHOW IN PARIS.—A Chrysanthemum show, which opened on Thursday, November 19, on the premises of the National Horticultural Society of France, says *Galignani's Messenger*, was extremely interesting. The principal exhibits came from the north and south of France, and were widely dissimilar. Those of the north were remarkable for their size, some of them being 8 inches in diameter, or as large as an ordinary Sunflower, whilst those from the south were mostly small varieties, and were noticeable for curious combinations of delicate colours and eccentric shapes. Perhaps one of the most beautiful had a golden heart fringed with gold. The

to the wonderful climate, where the Norway Fir and the Palm tree grow side by side, they do not deteriorate for some time. A gardener coming out here with a small capital ought to do well.

TECHNICAL EDUCATION.—The Government of New South Wales is publishing a series of works useful to the cultivator. Among them we find the second edition of Mr. MAIDEN'S *Treatise on Wattles and Wattle Barks* (*Acacia* sp.). It contains figures of the most useful species, indications of their chemical constitution, and directions for their cultivation, and the conservation of the trees, which are of great commercial importance for their bark, which is largely used in tanning. The first edition of 2000 copies was applied for in less than six months. The present edition is practically a new work.

The Book of the Aquarium; *The Fern Garden: how to make, keep and enjoy it*; *The Ivy: its History, Uses and Characteristics*, *Rustic Adornments for Homes of Taste*; *The Sea-weed Collector: a Handy Guide to the Marine Botanist*; *The Town Garden: a Manual for the Management of City and Town Gardens*.

RHODODENDRONS BLOOMING IN NOVEMBER.—As witness of the mildness of the season, says the *Scottish Leader* of the 21st inst., a correspondent had sent from Spitalhaugh, Sir JAMES FERGUSON'S place in Peeblesshire, a twig of *Rhododendron* bearing a flower-bud. The florets were fully formed, with their large stamens rolled up within. The grounds at Spitalhaugh are thickly planted with *Rhododendron* shrubs, all of which are budding in the same way.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner of the above society is fixed for Tuesday, December 1, at Auderton's Hotel, Fleet Street, at 6.30 P.M., Mr. ROBERT BALLANTINE, the chairman of the committee, presiding. The early winter exhibition of Chrysanthemums, which takes the place of the mid-winter show formerly held in January, will be held at the Royal Aquarium on Wednesday and Thursday, December 9 and 10; and the Floral Committee will meet at 2 P.M. on the first day.

PUBLICATIONS RECEIVED.—A pamphlet on *Carnations and How to Grow Them*, from Mr. GEORGE PIPPEN, Reading, Berks.

PLANT PORTRAITS.

ARISEMA EUNEAPHYLLUM, *Garten Flora*, p. 579.

BEGONIA MDLLE. EMILE RODIGAS.—A tuberous Begonia of dwarf habit, and nearly circular flat flowers of a crimson-scarlet colour, and nearly 7 inches in diameter. It was raised by MM. Blancquaert and Vermeiren, of Ghent. *Illustration Horticole*, t. 137.

CALADIUM SAGITTATUM.—A variety with sagittate leaves of a deep green colour, picked out with crimson along the principal nerves. *Illustration Horticole*, t. 138.

CYCNOCHES PERUVIANUM.—A Peruvian form introduced by the L'Horticulture Internationale. It is a male plant allied to *C. ventricosum*, but quite distinct in colour, being light green, with numerous small brown spots, and with a white lip. *Lindenia*, t. 301.

CYPRIPEDIUM AMABILE X.—A cross between *C. javanicum-superbiens* and *C. Hookeræ*. Would it not have been preferable to give a plant with such an origin a garden name? *Revue Horticole*, Nov. 1.

DAIS COTINIFOLIA, *Garden*, October 31, 1891.—A South African *Daphne*, which would form a serviceable greenhouse plant if it could be propagated readily.

IRIS KOBOLKOWI (REGEL) VAR. *VENOSA*.—Flowers dull lilac, and purple veins. *Garten Flora*, t. 1358, November.

LAELIA AMANDA X.—A presumed natural hybrid between *Cattleya intermedia* and *Laelia crispata* or *L. purpurata*. It was introduced by Mr. Bull in 1882, and described in *Gardeners' Chronicle*, 1882, xviii., p. 776. *Illustration Horticole*, t. 135.

LAELIA PURPURATA VAR. *ROSEA*.—Sepals and petals, rose-lilac. *Lindenia*, t. 302.

LILIUM HENRII, *Garden*, Nov. 7, 1891; see also *Gardeners' Chronicle*, vol. viii., p. 380, 1890.

LONICERA TANGUTICA, *Garten Flora*, p. 581.

MILTONIA REGNELLI PURPUREA, *Revue de l'Horticulture Belge*, November.

ODONTOGLOSSUM EDWARDI, *Orchidophile*, August.

PHALENOPSIS VIOLACEA.—A Sumatran species. The flowers vary from violet to creamy-white, with the segments sometimes barred and spotted. *Lindenia*, t. 303.

PLUM, YELLOW MONSIEUR, *Bulletin d'Arboriculture*, p. 257.

SELENIPEDIUM CALURUM X.—A hybrid, raised by Mr. Seden, out of *S. longifolium* by Sedeni. Mr. Rolfe gives an interesting history of this and allied hybrids. *Lindenia*, t. 304.

STEMONITIS ELEGANS, sp. n.—A new Mexican Fern, discovered by Pringle. The fronds are 6 to 16 inches long, glabrous; are cordate, deeply palmately 5-lobed, lobes lanceolate, central one larger than the others. Petioles chestnut brown. *Garden and Forest*, Oct. 14, 1891.

STENANDRIUM LINDENI.—A Peruvian species of dwarf habit, oblong-green leaves, the central and principal side nerves marked out with yellow blotches, flowers yellow in close erect spike. Acanthaced. *Illustration Horticole*, t. 136.

BABRAHAM HALL.

THE county of Cambridgeshire cannot be regarded as rich in the number of its fine mansions, or extensive private gardens, and the above demesne ranks as one of the best in the county. It is situated some 7 miles to the south-east of Cambridge in the village of Babraham, at the foot of the Gog and

Magog Hills, and is the residence of Charles Robert Whorwood Adeane, Esq., J.P., who is lord of the manor and sole landowner. The mansion is an Elizabethan structure, built of red brick with stone facings, and it is pleasantly situated in a fine park of some 200 acres in extent. This mansion was built in the year 1832, by Henry John Adeane, Esq., grandfather to the present owner. One of the possessors of the old mansion which was demolished, Sir Horatio Palavicini, figures in English history as a collector of Papal taxes during the reign of Queen Mary; and he is said to have been a purloiner of these taxes, and who, after the death of the queen, is said to have taken up his residence here from 1576 to 1600. There is a curious epitaph in Walpole's *Anecdotes of Paintings*, which throws some light upon this gentleman's position and character; it runs as follows:—

"Horatio Palavicini,
Who robb'd the Pope to lend the Queen,
He was a thief,—a thief? Thou liest!
For where? He robb'd but Antichrist,
Him Death with besom swept from Babraham,
Into the bosom of Old Abraham."

The old mansion was pulled down in the year 1765. The gardens are not very extensive, and at the time of my visit I found them in very good keeping, the kitchen garden being especially well cropped. The wall trees had been allowed to go somewhat astray, and these Mr. Hills, the gardener, has replaced in many instances with better varieties. I was told that the gardens suffer much in dry weather, owing to the soil being gravelly, and resting on chalk. Mr. Hills' method of protecting his Strawberry fruits from the slugs and dirt is of interest, and may be worthy of consideration by others; the plan is simple, but effective. He places three rough sticks in the ground around the plant, tying a piece of matting from one to the other, and places the bunches of fruit thereon; and he told me that his plan is perfectly satisfactory, which is more than can be said of some other methods of keeping the slugs away from the fruits. I have seen in other establishments wires stretched along each side of the rows of very long plantations, and the fruit laid upon them, but this was not so satisfactory, as some of the stalks which grow between one plant and another in the rows could not be placed upon these wires.

About 300 Chrysanthemums are grown of the leading varieties. The flower-garden beds were planted with the usual bedding-out plants, 10,000 of which are required to fill them. Standing on the lawn is a unique specimen of the *Asplenium-leaved* Beech (*Fagus sylvatica* var. *asplenifolia*).

The conservatory is small, and at the time of my visit was tastefully furnished. *Franea ramosa* is much grown for indoor decoration, for which purpose it is a very suitable subject. The lawn at Babraham, like those in most old gardens, was beautiful in its soft yielding surface and perfect verdure, and it evidently receives much care from the present gardener, W. Harrow.

EFFECTS OF FOG ON PLANT-LIFE.

THE members of the Manchester Field Naturalists' and Archaeologists' Society held their autumn *soirée* on Thursday, Nov. 19, in the Memorial Hall, Albert Square. Dr. G. H. Bailey, of the Owens College, said he proposed to confine himself to one very narrow corner of the subject of air-impurities, viz., fog. In Manchester and other large towns, after sunset was the warmest part of the day. Frequently we had a chilly day until 4 or 5 o'clock, and about 6 o'clock it became quite warm and quiet. For some three or four months now he had taken a record which confirmed his impression on this point. They had almost as many bright nights in Manchester as they had dull days. Proceeding to deal with the question of fogs, Dr. Bailey spoke of the great increase that had taken place in their number, not only in Manchester, but in London and other large

towns. He had been asked this question: Supposing they got rid of the coal-dust, what would they do with the sulphurous acid, which was probably more injurious than the coal-dust? It was perfectly true that the sulphurous acid was more injurious than the coal-dust. But did the sulphurous acid trouble us in the summer? No. The reason it troubled us in the winter was, because the smoke prevented it from getting away. Clear the atmosphere of smoke, and you cleared away the sulphurous acid too. If there was one point more important than another in connection with this matter, it was the amount of organic matter present in the air. In such a fog as we have already had this winter, the amount of organic matter was at least ten times that which was found in the ordinary air of the city. The amount of sulphurous acid increased in about the same proportion. The most recent experiments that had been set on foot were those which had for their object the determination of the extent to which the light was interfered with by the overhead accumulations. The amount of light varied a good deal according to the season of the year, the amount received in November being only about one-tenth of that received in September. But still more striking was the effect of the fog on light. The fog shut off the light almost completely, and the record in the country was fifteen to twenty or thirty times over that in a large town. With the aid of the lantern, Dr. Bailey threw on a screen curves showing the mortality in Manchester in different parts of the year. These showed that the mortality figures were exceptionally high during the prevalence of fog, and especially so in respect of diseases of the respiratory organs. At the same time, he admitted that the increase might be to some extent due to the cold.

It was often asked, he said, what could be done to remedy all this. Mr. Bailey thought he might prophesy that ere long we should be lighting by electricity and heating by water-gas, and then we shall be able to dispense with such things as fogs. There were plenty of other remedies that would be forthcoming when they were seriously asked for.

Professor F. W. Oliver, of University College, London, afterwards testified to the enormous havoc wrought by fog in urban and suburban districts amongst cultivated plants. The general gross features of the injuries were illustrated by a comprehensive series of coloured lantern-slides. Amongst them were faithfully portrayed the lesions to flowers and foliage with which horticulturists are only too familiar. In alluding to the impurities which are present in the air of large towns, sulphurous acid was specially indicated as the source of much of the damage; it has an immediate effect upon young unprotected leaves, and upon the flowers and buds of greenhouse plants. It attacks the living cells, not only at the surface of the organs, but also from within, obtaining access to the system of lacunæ, which everywhere penetrates them. Such is the inference to be drawn from the observed facts. The actual deposits which collect upon the foliage, even of hot-house plants, contribute also to the destruction; though experiment showed that the carbon, and the red and magnetic oxides of iron, were relatively innocuous, the sulphuric acid and metallic iron had in time a corroding action. This is seen in the gradual death and discoloration of the epidermal tissues of the upper surface of the leaf which is immediately in contact with the deposit—even in cases in which the direct poisonous action of the sulphurous acid had been resisted. Whether and to what extent the hydrocarbons, sometimes present to the extent of 10 or 12 per cent., contribute to the damage was not yet determined, as the investigation of this point was incomplete. The reduction of light which accompanies the fogs is a contributing factor which must not be neglected. Even if there were no impurities in a foggy atmosphere in any way harmful to plants, there would still be a very free dropping of foliage in many instances, if this reduction of light were so considerable, and so long maintained as was the case last winter. Not only did the

fog screen the plants from light whilst it lasted, but even when intervals of clear weather occurred, the thick deposits left on the glass would interfere with proper illumination. This was forcibly illustrated by an actual square of glass, cut from a London Orchid-house at the conclusion of the fogs of February last, which was projected upon the lantern-

tion current could be demonstrated. A practical gardener would at once grasp the fact that under such conditions great care must be exercised against overwatering the plant. Further, since a high temperature promotes increased activity of absorption by the roots, and at the same time exaggerates the poisonous effect of sulphurous acid, it is desir-

COUROUPITA GUIANENSIS, CANNON-BALL TREE.

A CURIOUS-LOOKING tree, often met with in woods and pastures. The peculiarity is principally due to the mode in which the flowers are borne on long branches, which grow from around the trunk, com-

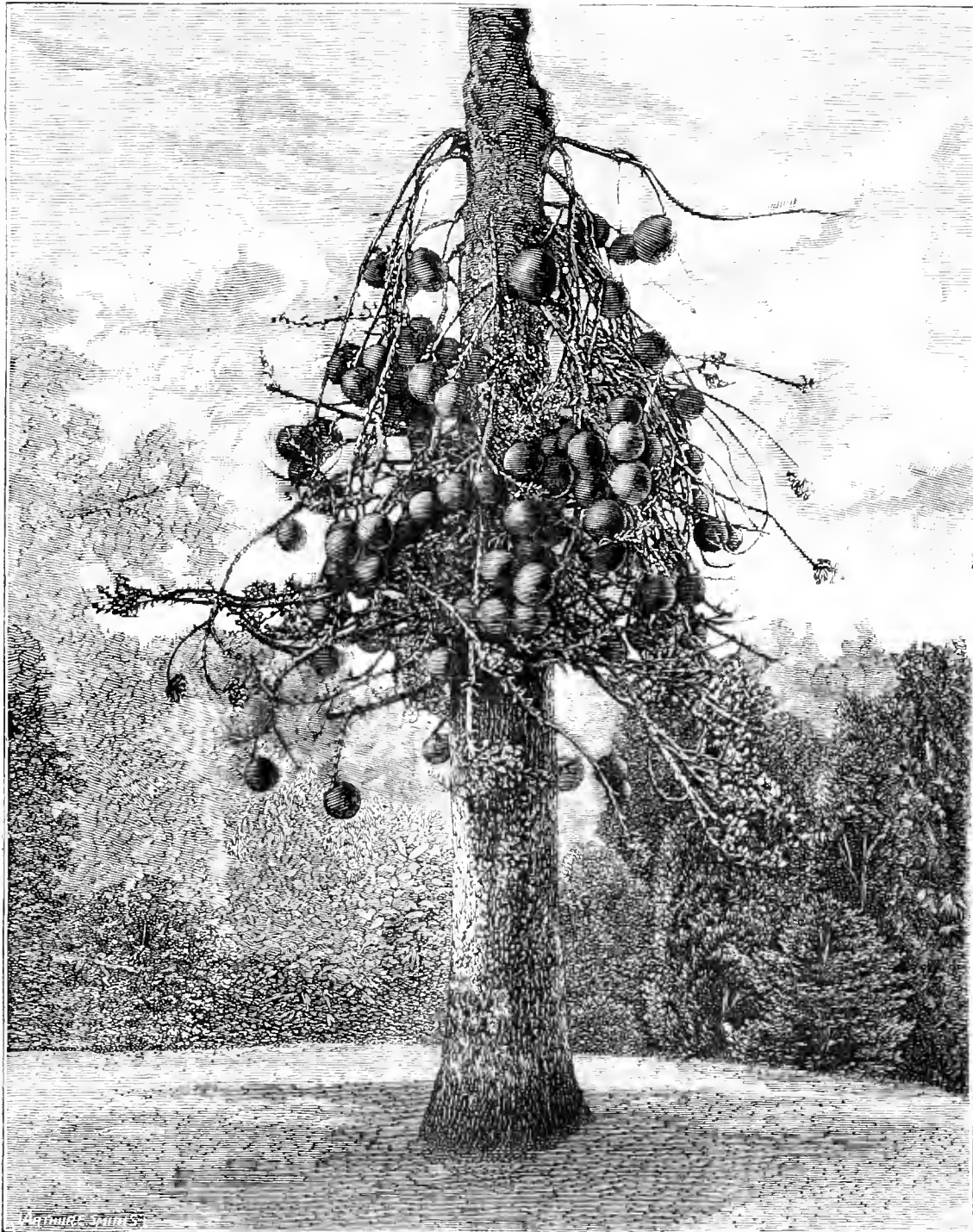


FIG. 24.—CANNON-BALL TREE: COUROUPITA GUIANENSIS.

screen. In conclusion, the lecturer indicated the sulphurous acid and the great reduction of light as the two chief factors in the destruction. In addition to its action already alluded to, sulphurous acid arrests transpiration, a condition likewise promoted by want of light. Even when a plant was exposed to an exceedingly dilute atmosphere of sulphurous acid, which might be too weak to actually kill its cells, a marked interruption of the transpira-

able to keep the temperature of a greenhouse in foggy weather as low as is consistent with the safety of the collection. By paying attention to these two common-sense principles, a gardener might hope to mitigate, in some degree, the damage that might be caused. This treatment would favour the plant in its struggle against both of the adverse conditions—want of light, and presence of sulphurous acid.

menting at its base, and continuing many feet upwards. The flowers are arranged in terminal racemes, and fall soon after expanding, the peduncle and rachis, however, instead of falling or withering, hardens and enlarges, producing its racemes in succession at its extremity each season. Years afterwards the woody pedicels may be seen still upon the flowering branches. So rarely does the arrangement of these latter resemble a creeping plant growing

upon a tree, that it is difficult to convince people it is quite an illusion, and that they bear the flowers of the tree themselves. In colour, the large cup-shaped flowers are red inside, yellowish-white outside; they measure 4 inches across. The large brown ball-shaped fruits (see fig. 94), unlike the fragrant flowers, emit a disgusting odour, rivalled only by the flowers of *Terminalia Belerica*. This latter tree, when in flower, fills the atmosphere throughout the garden in a way which suggests to the uninitiated that the sanitary arrangements of the district are in a very bad condition, and visitors are often deceived, and conclude such actually to be the case.

The *Couroupita* forms itself into a large tree some 50 to 60 in height, and bears a dense mass of shining green leaves, becoming deciduous once, or sometimes twice, during the year. The leaves on these occasions fall very rapidly, and are replaced again in a few days by a new set. *W. E. Broadway, Royal Botanic Gardens, Trinidad.*

TOWN FOGS, AND THEIR EFFECTS.

(Concluded from p. 605.)

ARTIFICIAL LIGHT.—As regards fog and artificial light, Mr. Livesey tells me, that if a dense fog covered London all day, the additional gas consumed would be 30 million cubic feet; but so extensive a fog probably never exists—certainly not all day, so the amount of gas may be correctly reckoned at 25 million cubic feet; and if the cost of this be 2s. 6d. per 1000 cubic feet, it amounts to £3125. As a standard of comparison, I should state that the total consumption of gas in the London district per day of twenty-four hours in depth of winter is 140 million cubic feet.

Fogs cannot be prevented from forming over towns; there are inducements in the way of dust particles and products of combustion for fogs to form there, but whether they must always be so black and loaded with soot and tarry matter is another question. As long as coal is burnt there will be dense fogs.

EFFECTS OF FOG ON PLANTS GROWN IN THE HOUSES AT KEW.

The heavy fogs injured many plants. The leaves fell off, the growing point withered, and in some cases, such as *Begonias* and *Acanthads*, the stems also were affected. Flowers fell off as soon as opened, or in bud. Almost all expanded blooms were less in size than when there was no fog. Flower-buds of *Phalænopsis*, *Angræcum*, some *Begonias*, *Camellias*, &c., changed colour and fell off, as if they had been dipped in hot water.

In the Palm-house, bushels of healthy-looking leaves were gathered up almost every morning. Plants which appeared perfectly healthy, when shaken would drop almost every leaf. Herbaceous plants suffered most, *viz.*, *Begonias*, *Poinsettias*, *Bouvardias*, *Acanthads*, &c. Some herbaceous plants were uninjured, *eg.*, *Cyclamen*, *Primula*, *Hyacinth*, &c. Many hard-wooded plants lost their leaves and were otherwise damaged, *viz.*, *Boronia*, some *Heaths*, *Grevilleas*, *Acacias*, &c. *Protea cynaroides*, a Cape plant, with large laurel-like leaves, was much injured in the temperate-house (min. temp., 40°), the leaves turning black, as though scalded. The same species in another house, with drier atmosphere and higher temperature, was scarcely affected by fog. As a rule, plants in active growth suffered most. Monocotyledonous plants and Ferns were mostly uninjured, except by the low temperature of the winter. The effect of fog on flowers is remarkable; generally white flowers are destroyed, but there are notable exceptions, *viz.*, *Masdevallia tovarensis*, *Odontoglossum crispum*, and *Angræcum* amongst Orchids; and *Cribiums*, *Cyclamen*, *Hyacintha*, *Chrysanthemums*, &c. The green leaves of *Poinsettia pulcherrima* all fell off, the red bracts remained on, also the flowers. Buds of white-

flowered *Angræcum sesquipedale* turned black, as if boiled; those of *A. eburneum* (also white) were unharmed. These two were grown in same house, under same conditions, and bloomed about the same time.

The conditions most conducive to rest from growth, *viz.*, a low temperature and moderately dry atmosphere, and diminished light, unavoidable during fog, were proved at Kew to be safest for all plants during prevalence of heavy fogs. *W. Watson.*

[Various methods have been proposed to mitigate the effects of fog. The plan adopted at the House of Commons of filtering the air through thick layers of cotton-wool is one. Mr. Toope, of Stepney Green, has also put up a house which is nearly air-tight (fig. 95), the air being compelled to pass through inlets, where it is deprived of its objectionable ingredients, and passes out at the top of the house by special "exhaust caps," which admit of no down draught. The house is heated by a steam-pipe, and the heat can be regulated at will, as also the quantity of air admitted through the inlets. In this house, which is in two com-

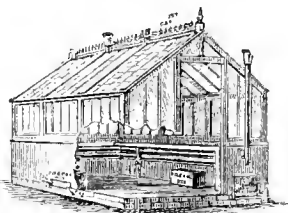


FIG. 95.—TOOPE'S FOG-RESISTING HOUSE.

partments, one cooler than the other, Mr. Toope has at this time a miscellaneous collection of small Orchids, with some *Chrysanthemums* and other plants, the whole doing well, in spite of the unfavourable surroundings. We hope to visit Mr. Toope's house again after a few months, "fog permitting," and to report the result. *Ep.]*

HOME CORRESPONDENCE.

THREE GOOD VARIETIES OF VEGETABLES.—Being in Banbury on the 18th, and finding it was the *Chrysanthemum* Show day, I thought I would just have a "look-in" and see what sort of a show they manage to hold in that town. I am not going to trouble you about the *Chrysanthemums* and the principal exhibits there, but as one knowing the interest centred upon anything "good," there were three vegetables exhibited there, so superior to those generally seen, that I felt it incumbent upon me to make a note of, as being three items that would, I feel sure, be appreciated by all first-class cultivators. The first of these is the Oxonian Leek (11 inches round), raised, I was informed, by Mr. G. T. Miles, of Wycombe Abbey Gardens, and evidently a grand variety to be noted by Leek growers as being one of the best for general purposes. The second was Aylesbury Prize Red Celery, which, I hear, is the result of fifteen years' careful selection by Mr. H. Wingrove, of Rousham Park fame; and last, but not least, I would mention the grand Onion which secured the first honours, not only at Banbury, but also at the Royal Horticultural Society's Show at South Kensington, and which I remember came in second (beaten by its comrade Ailsa Craig), at the International Show, Edinburgh. As shown at Banbury it is unquestionably a magnificent Onion—a better one could not be wished for. I have simply mentioned the above three for the information of cultivators on the look-out for something "out of the common" in vegetables, and would certainly advise any gardener who has to produce for his employer's tables some "fine vegetables," to afford the above a trial. *Pioneer.*

CHRYSANTHEMUM ETOILE DE LYON.—I cannot see so much to take one's fancy in this now much grown variety. If one wants an immense flower, all well and good, but, to my mind, it is not all a good *Chrysanthemum* bloom should be. Definite colour, good form, and good substance in petals is what, I think, are most desired, and these qualities, I maintain, are deficient in *Etoile de Lyon*. In the first

place, as to colour: I have seen it white, sometimes of a dirty white, and at others quite a deep pink; and as to good form, it lacks depth and body. *G. Ward.*

VEITCH'S MATCHLESS CARROT.—To those who have not tried this variety, I would say, do so at once. It is alike valuable for exhibition and table use. Sown the second week in February, it attains a good size by the beginning of July, fit for any exhibition; and that is not all: it is well adapted for heavy soil, as it does not split, a great point in a Carrot. Although of the Intermediate type, this variety does not grow to an ungainly size, but keeps in excellent symmetry throughout, a credit to it on heavy land. I have just taken up a splendidly uniform crop from this sort of land. *G. Ward, Brant-Broughton, Newark.*

NEW TEN-WEEK STOCK PRINCESS ALICE.—This white Stock is of great service just now in 48's and 60 sized pots for decorative purposes; it is very sweet and floriferous, and seems to do well in pots. The seed was sown in August, and another batch the first week in September, so we hope to have a supply till the Lathians come in. This variety, Princess Alice, was sent out by Messrs. Veitch & Son last spring, and where sweet-scented flowers are prized, it well deserves a place amongst such, being of easy culture, and requiring so little heat. Of course, sufficient heat should be applied to keep away damp. *W. A. Cook.*

ESTATE FRUIT NURSERIES.—I regret to find that my good friend, Mr. Crump, should have assumed that when commenting upon the general aspects of the paper which he read at Manchester, I should for one moment have deprecated what he was doing in relation to fruit-tree raising at Madresfield. I am quite open to correction, but I think Madresfield estate stands almost unique in its fruit nursery and distributive capacities. There may be others on which this sort of work is as ably and intelligently conducted, but, after all, on how few is it done at all, good or bad! It is not every gardener who would care to burden himself with the cares of an estate nursery, or finds the same enlightened encouragement from employers, that Mr. Crump enjoys. Had such action been general, we should have found one of the most difficult problems of the fruit-growing question solved long since. Under existing conditions, the free distribution of trees to all classes of tenants by landowners, as is done at Madresfield, is practically the only way to get over the lack of the tenure difficulty. As to the acceptance of Mr. Crump's invitation to go at once and see what he is doing at Madresfield, I should be delighted to do so, but, unhappily, circumstances prevent this. Still, it is certain, that what is there being done should, just now, be of the deepest interest, and for that reason it merits all publicity as well as generous criticism. *A. D.*

JERUSALEM ARTICHOKE.—Pray excuse my troubling your columns further on this subject, in answer to Canon Ellacombe, on p. 567. Filippo Re, Chevalier of the Order of the Iron Crown, Professor of Agriculture in the University of Bologna, &c., Italy, from whom I quoted, p. 482, is surely sufficient authority for anyone believing that *Helianthus tuberosus* is called *Girasole* in Italy. With reference to other matters, I think I have explained in my reply to Mr. Dod, all, excepting the Star of Bethlehem, which also will be found explained by Pryor, p. 223. Is it only the "vulgar error" of drawing deductions from mistaken hypotheses, or can Canon Ellacombe give authority for calling a Turkey a Turk? There is a vast difference between the two names, and I have never previously seen or heard it so designated, but will look it up. The name Turkey may probably (like the "Girasole" with the Jerusalem Artichoke) have come over with the bird, which deduction we may venture to consider favourable, from the fact that in the West Indies two plants, called there respectively Turkey berry and Turkey flower, are so called because poultry freely eat and fatten upon them. One word respecting the plant that Canon Ellacombe calls the "Girasole" of Italy. Is this the Jerusalem Gourd? The Ricinus or Palme Christi is the Kikaion of Hebrew Scripture, of which Jonah made his booth, to keep him from the sun, and which translators have called "Gourd," for what reason perhaps Canon Ellacombe, a biblical student and scholar, will kindly explain. In conclusion, Turkey is evidently of other derivation than Turk, and for which I intend to search all American authors I meet with, in order to solve; in the mean-

time, I submit it as an argument in my favour. Then we have Dandelion from Dent de Lion, Potatoes from Batatas, why not Jerusalem Artichokes from "Girasolo Artischoki"? *Wm. Etherington Dixon, P.S.*—Since writing the above, I have referred to a number of ancient works on South America, and have noticed the singular analogy the Turkie has with the Jerusalem Artichoke, especially in Spanish literature, in the fact of its peculiar anomaly of being mixed up with other birds, as the latter is with plants and places; also its early introduction into this country from Brazil, bringing its name with it, and having no more relations to Turkey and Turks than the other has to Artichokes or Jerusalem. *W. E. D.*

— May I ask a little room to reply to what Mr. Dixon says on p. 588? This note shall close the discussion, so far as I am concerned. Mr. Dixon says (1) that I do not tell him who the botanists are who have discovered that the Jerusalem Artichoke is not a native of Brazil; or (2) what its native country is; (3) he asks whether *Helianthus annuus*, a native of Peru, has a fruticose habit; (4) he says that it would be a serious libel on Asa Gray to say that he made either *H. doronicoides* or *H. giganteus*—non-tuberous plants—synonymous with *H. tuberosus*; (5) he charges me with inaccuracy in referring to De Candolle's *Prodromus*, p. 590, vol. v., for a description of Peruvian fruticose Sunflowers—the fact being that I took the reference from *Genera Plantarum*, but on verifying it, I find that the description of fruticose Sunflowers in De Candolle begins at the bottom of p. 590, and Peru is mentioned as a habitat on the top of p. 591, so I will try to be more precise in my references now. (1) Amongst botanists who know no Brazilian Sunflowers are Bentham and Hooker (see *Genera Plantarum*, vol. ii., p. 376). They say (I translate the Latin literally), under *Helianthus*, "species about fifty, mostly North American, very few Peruvian or Chilian." The few Peruvian differ in having a fruticose stem? Asa Gray (*Flora of North America*, vol. i., part 2, p. 280), gives the habitat of *H. tuberosus* as "moist alluvial ground, Upper Canada to Saskatchewan, and south to Arkansas and middle parts of Georgia," this answers (2). Next, in Nicholson's *Dictionary of Gardening*, under *H. tuberosus*, I find as the habitat "Upper Canada and the United States; it is certainly not South America, as stated in so many books." Replying to (3), *H. annuus* is neither fruticose nor Peruvian. See Asa Gray's *Flora of North America*, vol. i., part 2, p. 272, where the author says of *H. annuus*:—"It came not from Peru, nor even from Mexico." To conclude with (4): In Asa Gray's *Manual of the Botany of the Northern United States*, fifth edition, 1876, p. 258, I find under *H. doronicoides*:—"This is probably the original of *H. tuberosus*." Again, in *Flora of North America*, vol. i., part 2, p. 276, published 1884, the author says, under *H. giganteus*:—"It is the *H. tuberosus* of Parry, and *H. subtuberosus* of Bourgeau, the so-called edible tubers being tuber-like thickened root-stocks." In this work, however, Asa Gray makes *H. tuberosus* a distinct species. *C. Wolley Dod.*

ONIONS.—On p. 558 of the *Gardeners' Chronicle*, "J. S." gives some practical advice under this heading. When I, however, read it, one important point I thought was omitted, viz., the highly essential value of sowing only the finest stocks. Proof of this was confirmed when I read on a subsequent page of the same issue an account of an action brought by a farmer for loss sustained through a worthless crop. Could cultivators generally but see the great advancement made in the selection of Onion stocks by our Onion specialists, we should hear less of crop failures. Practical Onion growers do not give £6 10s. for eleven Onion bulbs (see *Gardeners' Chronicle*, January 31, 1891) to secure an ordinary strain only. The stocks that have produced such remarkable results when exhibited or grown by such Onion specialists as Messrs. Deverill, Kneller, Wilkins, Wingrove, Finlay, and other noted Onion pedigree producers, must not be confounded with the stocks usually kept in the seedsman's drawers. My contention is that for this result the cultivator himself is principally to blame. When he sees, for example, brown Globe Onion at 8d. per ounce, and in another list offered at 4d., he is apt to jump at the conclusion that his seedsman is pocketing the extra 4d., whereas, it may be found, that with the exception of the names being the same, the resemblance there ends. To cultivators I would give this advice, do not run your seedsman down because you find his price

higher than you see offered elsewhere. If dubious, try the two, and if you do find that his stock is no better than the cheaper list, then go at once to headquarters, i.e., to those who make Onion-growing a special feature, and you will then no longer complain of "miserable crops." To the trade generally I beg to tender this advice (knowing as the writer does a "little" of the trade), if you are anxious to secure for your customers high-class Onion stocks, you must depart from the usual routine, and search out your Onion specialists yourselves; to do this means money, but you may depend upon affording your customers a pleasant surprise compared with what they have been accustomed to in the shape of Onion crops. *Pioneer.*

TOMATOS AND CUCUMBERS FOR MARKET.—In last week's issue of the *Gardeners' Chronicle*, p. 614, there is an article on "Winter Tomatos," which says that the Old Red is the best variety. I thought so too, as I had grown them before, and always found them very good; but this year having grown them, and the fruit being of good size, averaging $\frac{1}{2}$ lb. each, and of good colour, on sending them to market, I cannot sell them. Then, again, with Rollisson's Telegraph Cucumber, which I have always considered of first quality, I find there is no demand for it, and yet the fruits are of good size, firm, and tender. Can any of your correspondents kindly tell me which Tomato and Cucumber are the best for market purposes? *N. H. C.*

CLIMBING NIPHETOS ROSE.—If the German correspondent you refer to on p. 586, would oblige us with his name and address, we should be happy to furnish him with proof of the climbing habit of this Rose. We can only conclude your correspondent has got the old variety. With reference to the paragraph of Mr. Cook on p. 619, we are well aware that there are some very large plants of the old variety in existence. We think though, that they are only comparative climbers, and we have never heard that they maintain the habit under propagation. Mr. Piper's opinion seems to be the almost universal one. The first season here it grew 22 feet between February and June; it is also a fact, that one shoot grew 15 inches in eight days, or $1\frac{1}{2}$ inches a day. The best blooms we have ever cut were from the climbing variety, and they were awarded 1st prize for the best twelve Roses in the Bath Rose show two years ago. *Keynes, Williams, & Co.*

— Seeing some suspicions thrown on the above Rose by your German correspondent, and also by Mr. W. A. Cook, on pp. 586 and 619, I can assure them both that the true climbing Niphetos is to be seen here in my nursery. I have twelve plants of the old Niphetos in the same house as the climbing one, and the difference in the foliage and habit can be easily seen when they are placed close together. My plant has made ten shoots, 8 feet long, since April, but there are no signs of the old variety running into long shoots, but plenty of flowers. *Amos Groombridge, Plymouth.*

BOCCONIA CORDATA.—Mr. Earley, in your last issue, does good service to your readers in calling attention to this graceful, silvery-foliaged, hardy plant. Mr. Rashleigh has naturalised it at Menabilly on a sloping bank, where its changeable foliage has a very pretty effect. It seems to succeed very well even under the shade of other trees. In other gardens in Corwall I also saw it naturalised in the same way, and it ought to do also in counties not so well favoured in climate. It were to be wished that this naturalising of plants which might prove perfectly hardy is not more frequently tried. In a dell at the Priory, Warwick, *Primula japonica* used to grow and spread quite freely. *Va. abond.* [No frost ever experienced in these islands will kill the plant if the soil be not waterlogged. Ed.]

THE ROYAL BOTANIC SOCIETY'S PRIZES.—"Prize Winner" writing under the above heading in last week's *Gardeners' Chronicle*, has opened up a subject which, perhaps, many who exhibit at the Botanic Society's shows, will be pleased to see ventilated. When I first exhibited at the Botanic, about four years ago, I, like your correspondent, wrote to the Secretary, and finding that availed me nothing, waited till showing time came round again the following year, and I then applied at the office, and was paid at once. It does seem a pity, that a Society like the Botanic should allow such a long time to elapse before paying the money awards to those who have won them. I know of no other Society that does so. *Exhibitor.*

FRUIT TREES FOR TENANTS.—My friend Mr. Crump has done good service in bringing this subject before the public, seeing that trees planted by the farmer or cottager are at once the landowner's property. It, therefore, is quite clear that the trees should be provided by him, the tenant undertaking to see that they are protected against stock and vermin. No one is so fit to select the kinds suitable for the district as the gardener, as from his experience he is most likely to know what will do well in that district. For example, many of the kinds which do splendidly in the valley of the Thames will not grow freely when planted at high altitudes. Another great mistake is the planting of too many kinds; if a farmer have a dozen reliable sorts it will be ample. The site should also be chosen by the gardener. The question now comes, what is the most desirable form of tree? I would say half-standards, and I am led to say this from what I see in this district. An orchard near the house is a pet place for the farmer for turning out his calves or other young things. Half-standards are not so exposed to high winds as standards, but in all cases suitable shelter must be planted around the orchard, and nothing answers so well for this as the Scots and Austrian Pines, the latter forming the outside row, as being the dwarfier of the two. A few years ago, there was a great scarcity of Apples in this country, and, hearing of an orchard not far off with plenty, I said to my foreman, as I went off to purchase, "There is some substantial reason why this man is doubly blessed while so many are left out in the cold." Sure enough, there was. The orchard was surrounded by a belt of Scots Pine; and fine Northern Greenings, without spot or blemish, and Golden Nobs, which sold for half a guinea per bushel, were in plenty. It did not take me long to plant Pine trees around our orchard after that, and with the best results. It is very grievous to see a fine old orchard, which has borne heavy crops, fast going to decay, simply through starvation. A good dressing of manure in the autumn occasionally, or stock constantly fed in the orchard, will soon cause a different state of things; we very often see the saw at work reducing the branches, when it is nourishment at the roots which is required. I know an orchard near here where the drainings of the farmyard is regularly diverted into it, and the result is most beneficial, and Winter Queenings, called Duck's-bill in Sussex, are as large as Blenheim's, and excellent for dessert in February. A very heavy crop of fruit is sometimes borne on a tree on a farm on this estate. In one year it produced 60 bushels; it was known by the name of French Pippin, and one of my men gathered the produce. For the moment I leave the Apple, and mention our Pear; I allude to that chance seedling growing on the gardener's cottage at Pitmaston, and now known as the Pitmaston Duchess. It is really a very fine kind; and even here, at 400 feet altitude, does splendidly as a standard. *J. Rust, Eridge Castle, Sussex.*

SOCIETIES.

TWICKENHAM HORTICULTURAL.

NOVEMBER 17, 18.—Though held so late in the season for the London district, yet the show held in the Town Hall was an extremely good one—better in many respects than some others which had preceded it. In spite of the dampness of the season, Chrysanthemum blooms came out wonderfully well. The groups were specially good, half-a-dozen being arranged; and as here an edging of Fern is allowed to them, the effect is far more pleasing than is usually the case.

Mr. Mitchell, gr. to W. Cunard, Esq., Orleans House, repeated his successes at Kingston and Teddington, putting up a superbly-flowered lot of plants, faced with an exceptionally good lot of Maidenhair Fern; Mr. Parsons, gr. to T. Twining, Esq., was a close 2nd, having also a very fine group, that rather lacked freshness in the flowers.

Very good trained plants were shown, not for competition, for these have wisely been cut out of the schedule. Very beautiful indeed were the half-dozen of fine bush *Bouvardias* shown by Mr. Parsons, who also had the best six zonal *Pelargoniums* in 6-inch pots, wonderfully bloomed; better plants, for the size of the pots, have rarely been seen. *Cyclamen* and Chinese *Primroses* were capital and plentiful, as also were table plants of the usual character. In a competition for dressed baskets of plants, Mr. Parsons was again 1st; *Plumbago rosea*, and some

dwarf single *Chrysanthemums* were very effective in his basket.

(1) miscellaneous plants, Mr. H. E. Fordham had a charming group of natural-flowered *Chrysanthemums*, *Heaths*, and other flowering plants; and Mr. H. A. Tracey had a pretty but small group of *Orchids*. Both these exhibitors are enterprising local nurserymen.

Cut Flowers.—The chief class in these was one for twelve Japanese and twelve incurved, the first place being taken by Mr. Mease, gr. to A. Tate, Esq., Leatherhead, who had of the former, *Avalanche*, *Etoile de Lyon*, *Madame J. Laing*, and Mr. H. Cannell, excellent; and of the latter, *Lord Alcester* (the premier incurved flowers), *Robert Cannell*, *Miss Ilaggas*, *John Lambert*, *Princess of Wales*, and others; Mr. C. J. Waite, gr. to the Hon. W. Talbot, Esher, was a very close 2nd, his Japanese, including a grand bloom of *Stanstead White* (premier Japanese), *Madame Baco*, *Sunflower*, *E. Molyneux*, &c., were all good.

Mr. Mease had the best twelve incurved flowers, Mr. G. Woodgate, Warren House Gardens, Kingston Hill, coming 2nd. This exhibitor had the best six incurved, one variety, in good *Empress of India*; Mr. Mease being 2nd, with *Hero of Stoke Newington*.

In the class for twelve Japanese, Mr. Waite was a good 1st, with *Etoile de Lyon*, *Mons. Bernard*, *Condor*, *Gloriosum*, &c.; Mr. Mease being 2nd, having very good *Lilian H. Bird*, *Sarah Owen*, Mr. H. Cannell, &c.

The best six Japanese were *Etoile de Lyon*, from Mr. Mease; Mr. Coombs, gr. to W. Furze, Esq., being 2nd, with the same variety.

Messrs. Woodgate and Waite had the best dozen blooms of *Anemone*-flowered varieties, *Lady Margaret*, *Fabian de Médiana*, *Jeanne Marty*, *Madame Cabrol* being *hæ*.

Numerous baskets of cut blooms, glass stands, bouquets, &c., were admirably shown.

The best bunches of black Grapes came from Mr. Griffin, Coombe Bank, who has shown so well generally this autumn; and Mr. Rickwood had the 2nd best in small but otherwise capital *Gros Colmar*. Mr. Mitchell had the best whites in well-finished *Muscat of Alexandria*, Mr. Griffin being 2nd with the same variety. Mr. Mitchell was also 1st with four dishes of fruit, having both good black and white Grapes, Pears, and Melons; Mr. Sage, Hove House Gardens, was 2nd. This exhibitor had the best four dishes of Pears.

Apples were very fine generally, especially a grand sample of *Peasgood's Nonsuch*, from Mr. Waite. This competitor had the best collection of six kinds of vegetables—capital samples; Mr. Garrod, gr. to Miss Vaughan, being 2nd. Mr. Mitchell had the best six Tomatoes—very fine samples. Mr. W. Punpart showed fine *Celery*, blanched *Seakale*, and fruit; and Messrs. Howell, Peed & Sons, Will Taylor, &c., had good collections of bardy fruit.

SALISBURY.

NOVEMBER 17, 18.—The Wilts Horticultural Society held its annual show of *Chrysanthemums*, cut flowers, and fruits in the County Hall on the above-mentioned dates, and although numerically there was a falling off in the exhibits, the quality of those staged was up to—and in some instances better than the usual standard.

Groups were well shown and effectively arranged. Mr. Frank Pearce, Crane Street, Salisbury, won the Ten-guinea Challenge Cup for the second time in succession, with capital plants; Mr. A. Robey, gr. to Captain Greenwood, Harnham Cliff, Salisbury, was a good 2nd; and Alderman Lovibond, St. Anne Street, Salisbury, was 3rd.

Mr. Hoskins, Poultry Cross, Salisbury, was a capital 1st in the class confined to amateurs. Mr. Curry, gr. to Colonel Pepper, Milford Hill, Salisbury was 1st for the most effectively-arranged group of miscellaneous plants; Mr. Robey was 2nd.

Cut blooms made a fairly good show. The principal class for thirty-six blooms was well contested. Mr. Neville, gr. to F. W. Flight, Twyford, Winchester, was 1st; Mr. W. Robinson, gr. to Lord Chief Justice Lopes, Heywood, Westbury, was a good 2nd; and Mr. George Inglefield, gr. to Sir John Kelk, Bart., Tedworth, Marlborough, was a very close 3rd. In the class for eighteen blooms, confined to amateurs, Mr. Follen, gr. to J. D. Willis, Esq., Bapton Manor, Codford, near Warminster, was 1st of three exhibitors.

Mr. Neville was 1st for twelve incurved, and Mr. W. Robinson obtained a like award for a dozen

blooms of Japanese, being followed closely by Messrs. Inglefield and Neville. Mr. Robinson was also 1st in each of the classes for twelve reflexed and twelve *Anemones*; Mr. G. Tucker, gr. to Major W. P. Clarke, Bellfield, Trowbridge, being a good 2nd in each case.

The ladies classes were well represented by Miss Agnes Flight, Winchester; Miss Ethel Mary Waters, Stratford-sub-Castle, Salisbury; Miss C. A. Mathews, Highfield, Salisbury; Miss Lovibond, Salisbury; Miss B. Flight, Winchester; and Miss Hodge, Dean, all displaying good taste in their various arrangements.

Fruit was not largely shown, but it was of excellent quality. Mr. H. W. Ward, Longford Castle, Salisbury, was 1st for a collection of six kinds. The same exhibitor took 1st for both *Lady Downes* and *Trebbiano Grapes*; and Mr. Chalk, gr. to George Read, Esq., Westwood, Salisbury, was the only exhibitor in the classes for *Black Alicante* and *Muscat of Alexandria*, and he was justly awarded 1st prize in both classes for very fine produce.

Apples and Pears of extra fine quality were shown by Mr. Thomas Hall, gr. to S. Montague, Esq.; Mr. South, Stoneham House, Southampton; and Mr. Fred. Smith, gr. to the Bishop of Salisbury, The Palace, Salisbury, who took the prizes in the order in which their names appear. They were the only exhibitors of Apples and Pears; Mr. Hall's *Beurré Diel* Pears were of immense size, and of perfect form and colour.

LIVERPOOL.

NOVEMBER 17, 18.—A splendid show was that held in St. George's Hall, on the above dates, the competition being exceedingly keen, and the exhibits of uniform quality. Mr. Bridge, assisted by a large and efficient committee, had all the arrangements well in hand.

Cut blooms deserve the foremost position. For forty-eight, Mr. G. Burden, gr. to G. Cockburn, Esq., Lingdale Lodge, Claughton, Birkenhead, won premier honours with a very fine lot, especially in the incurved section; Mr. R. C. Townsend, gr. to J. R. Greatorex, Esq., Mytton Hall, Shrewsbury, was a very close 2nd.

A Challenge Vase was offered for twelve incurved, twelve Japanese distinct, and twelve reflexed, in not less than six varieties, which produced a splendid competition. Mr. A. R. Cox, gr. to W. H. Watts, Esq., Elm Hall, Wavertree, succeeded in winning somewhat easily; Mr. D. Forbes, gr. to A. Holt, Esq., Crofton, Aigburth, was placed 2nd.

The class for eighteen incurved, distinct, was a strong one, the exhibits being very close in point of merit. Mr. J. Haynes, gr. to Mrs. B. C. Nicholson, Oswald Croft, Wavertree, was 1st; and Mr. R. C. Townsend, 2nd.

The leading position for twelve incurves was occupied by Mr. J. Edwards, gr. to H. Tate, Esq.; Mr. R. C. Townsend 2nd.

The most successful in the Japanese section, eighteen varieties, was Mr. T. Healy, gr. to Colonel Wilson, Hill Side, Allerton, amongst fourteen competitors; Mr. J. Gould, gr. to R. N. Dale, Esq., Bromborough Hall, Cheshire, was 2nd.

Reflexed and *Anemone*-flowered varieties were represented by good quality, if by few exhibitors. Pompons were poor.

Groups of *Chrysanthemums* were only moderate. Mr. T. Winkworth, gr. to R. Brocklebank, Esq., Chilwell Hall, was 1st.

Stove and greenhouse plants were good. For six, Mr. Jellicoe, gr. to F. Gossage, Camp Hill, Woolton, was an easy 1st.

Orchids were a distinct feature. For three, Mr. C. Osborne, gr. to H. J. Robinson, Esq., Amystry Court, Woolton, was 1st, showing *Odontoglossum*, grand *Cypripedium Harrisianum*, and *Dendrobium Wardianum*; Mr. Cox 2nd. *Cypripediums* were well shown by Mr. Harrison, gr. to G. Bateson, Esq., Elmhurst, Aigburth, who took the premier award.

Fruit was good, and the competition keen. For six dishes, Mr. T. Elworthy, gr. to R. Gladstone, Esq., Court Hey, Roby, was 1st; Mr. J. Bennett, gr. to the Hon. C. H. Wynne, Corwen, North Wales, 2nd.

For two black and two white bunches of Grapes, Mr. Elworthy was again successful in taking premier honours; Mr. J. Bennett, 2nd.

For two bunches, any variety, not *Alicante*, Mr. Swis, gr. to T. Smith, Esq., M.P., Carleton, Princes Park, Liverpool, won with *Gros Guillaume* in excellent condition; Mr. Ferguson, gr. to Mrs. Paterson, Rock Ferry, 2nd.

In the class specially set apart for *Alicante*, ten competed, Mr. Elworthy scoring another victory with shapely bunches, and good in colour and berry alike; Mr. J. Hottingsworth, gr. to J. S. Campbell, Esq., Woodseat, Uttoxeter, 2nd. Mr. G. Middleton, gr. to L. Pilkinton, Esq., Roby, was distinctly ahead for two bunches of *Muscat of Alexandria*; Mr. Wilson, gr. to H. Cunningham, Esq., Gorse Cop, Gateacre, 2nd.

Apples were excellent. Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, won for eight dishes of culinary varieties with well-coloured fruit. The Rev. S. Garnet Christleton, Chester, occupied a similar position for six dessert varieties.

HULL.

NOVEMBER 18, 19.—This exhibition has always been regarded as one of the best in the north; and the Artillery Barracks affords abundant space for both exhibits and the public alike. Messrs. Harland and Dixon, with Mr. R. F. Jameson, as chairman, deserve a word of praise for the efficient manner in which all the arrangements are carried out.

Much encouragement is annually given here for groups of *Chrysanthemums*, and foliage plants arranged for effect. It would be difficult to imagine better groups than the five competing ones on this occasion; all were meritorious, the 1st prize going to J. Ricketts, Esq. (gr., G. Wilson), Swanland Manor; Mr. J. Cottam, jun., Cottingham, 2nd.

Specimen plants were a decided improvement on other years. For three dwarf-trained, Mr. J. S. Graham, gr. to G. Lawson, Esq., Newland Grove, Hull, was ahead with good plants; Mr. J. Hemming, gr. to E. Leetham, Esq., Beech Hulme, Newlands, Hull, 2nd. Standards made a capital display, the previous winners again occupying similar positions. Pyramids were staged by Mr. Graham, in fairly good condition. Bush plants were well done by Mr. S. Smith, Norwood Nursery, Beverley, who received 1st prize.

Single varieties were a feature, so well were they flowered. Mr. A. Thomson, gr. to A. Clark, Esq., Priory Villa, Heasle, was the 1st prize-taker.

Cut blooms were the principal feature of the show. For twenty-four incurved, in eighteen varieties, the 1st prize was £10, which was carried off by Mr. Shoesmith, gr. to M. Hodgson, Esq., Shirley Cottage, Croydon, with an even stand of high-class blooms; Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, was 2nd, staging a good lot of blooms. Similar prizes were offered for the same number of blooms, Japanese distinct. Mr. G. Wilson secured the leading prize, with an even stand of high-class blooms; Mr. Shoesmith 2nd.

Twelve Japanese, distinct, was a strong class. Mr. Thornton, gr. to C. E. Marfleet, Boothby Hall, Lincoln, was 1st; Mr. G. Wilson 2nd.

Japanese varieties, staged with 8 inches of stem and foliage, made an interesting display, Mr. G. Wilson leading, followed by Mr. E. Wright, gr. to D. Wilson, Esq., Park House, Cottingham, 2nd.

Prizes were offered for twelve blooms of white Japanese. Mr. Appleton, gr. to C. H. Johnson, Esq., The Hall, Thorgumbald, Hull, was distinctly ahead.

Reflexed varieties were a feature, the competition being exceedingly keen. Mr. G. Appleton was 1st; G. E. Smith, Esq., Floral Cottage, Paull, 2nd. The last-named won for twelve *Anemone* blooms, with flowers possessing much merit; Mr. R. Walker, gr. to Colonel Stracey Clitheroe, Hotham Hall, Erough, was 2nd.

Sweet-scented *Chrysanthemums* receive encouragement here. For twelve, Mr. Harland, The Sycamores, Cottingham, was 1st.

Single varieties were fairly well staged by Mr. G. E. Smith, who took premier award; as he did also for twelve bunches of Pompons.

The premier bloom in the incurved section was *Lord Alcester*, in Mr. R. Falconer Jameson's stand; and one of W. W. Coles, belonging to Mr. G. Wilson, received a similar honour. The *Gardeners' Magazine* Silver Medal was awarded to Mr. Graham, for his three specimen *Chrysanthemum* plants, for the high cultural skill which they possessed; and the National *Chrysanthemum* Society's Certificate of Merit was awarded to the 1st and 2nd prize groups in the open competition.

Dinner-table decorations, bouquets, and other *Chrysanthemum* arrangements, were most interesting. For a table of wreaths, bouquets, &c., Messrs. Perkins & Sons, Coventry, took the lead in their usual way; Mr. C. Colebrook, Royal Nurseries, Grimaby, 2nd.

The prizes for the best decorated table, fully set,

brought a strong competition. The winner of the 1st prize, Miss Wheatley, showed considerable taste in arrangement, as also did Miss Ayre and Mrs. F. Jameson, for the prizes of 2nd and 3rd as here noted. David Wilson, Esq., contributed a handsome collection of Orchids, for which he received a Silver Medal.

YORK.

NOVEMBER 18, 19, 20.—The twelfth annual exhibition was held in the Fine Art Exhibition Building in this city on the dates named, and was in every way a success. A very pretty effect was made by arranging the groups of Chrysanthemums and foliage plants in circular form on the floor of the large room, and, as ample space was provided between each, a capital effect was produced. As usual, the arrangements were satisfactorily carried out by Mr. Lazenby, Secretary.

Cut blooms were staged in large numbers, and of fair quality. The principal class was for thirty-six, half to be incurved, and the remainder Japanese, £10 being offered as 1st prize, bringing seven competitors, the 1st prize going to Mr. P. Blair, gr. to the Duke of Sutherland, Trentham, with a fairly good lot; Mr. W. H. Hotham, gr. to Mr. Robinson King, North Ferriby, Hull, was a good 2nd. In the class for twenty-four distinct, eight competed: Mr. Blair again won; Mr. C. Lawton, gr. to Colonel Broadley, Welton House, Brough, 2nd.

Mr. Hotham won for twelve incurved in a strong class, as also he did for the same number of Japanese, staging well in both classes. Mr. Blair won 1st prize for six Japanese, any one variety, with good blooms of Avalanche; and also for six reflexed and twelve anemones.

Cut blooms of stove and greenhouse plants made a distinct feature, the best twelve coming from Mr. C. H. Letts, gr. to the Earl of Zetland, Aske Hall, Richmond; Mr. Blair, 2nd.

Plants as specimens and in groups were noteworthy. The best four incurved were remarkable for their freedom in training and flowering; Mr. Evered, gr. to Mrs. Crutch, Holgate Lodge, York, was 1st; as also was he for two specimens and for one. The best four plants in the Japanese section came from Mr. T. Smith, Beverley, large, freely-flowered, and devoid of formal training; he also took 1st prize for two plants.

The best groups of Chrysanthemums interspersed with foliage plants in circular form, were from Mr. Dawe, gr. to Dr. Baker, The Friend's Retreat, York; Mr. McIntosh, gr. to J. T. Hingston, Esq., Clifton, York, 2nd.

Ladies table decorations were on the whole effective, the most successful exhibitor being Miss Blanchet, 3, Muser Street, York.

Grapes, in three varieties, two bunches each, Mr. C. H. Letts won easily, with perfect examples of Alicante, Gros Guillaume, and Muscat of Alexandria; Mr. D. Dickinson, gr. to W. B. Richardson, Esq., Elm Bank, York, was 2nd. Mr. G. Lee, gr. to Sir J. Cowell, Bart., Clifton Castle, Bedale, won with Gros Colmar for black Grapes.

THE BOLTON CHRYSANTHEMUM SOCIETY'S EXHIBITION.

NOVEMBER 20, 21.—The Bolton Horticultural and Chrysanthemum Society (which is affiliated with the Royal Horticultural Society) held its fifth annual exhibition of Chrysanthemums, plants, fruits, and vegetables, at the Albert Hall. It is a gratifying circumstance that the efforts of the Society to promote the cultivation of flowers and fruit in this district have met with a very large measure of success, of which perhaps no better evidence could be afforded than the increasing interest which is being taken in the Society's yearly displays, and the accessions to be found in the list of exhibitors. This year, notwithstanding the fact that the season has been an unfavourable one for successful Chrysanthemum cultivation, the show was the largest the Society has held, and many of the specimens for competition were of the finest order.

The scope of the Society's work is far from being limited to a yearly display, which, to the general public, may mark the extent of its operations, and no little practical benefit is conferred during winter months by the lectures which are given under its auspices to those regularly employed in gardens, as well as to cottagers and gardeners. Financially, the

Society is in a satisfactory position, having a balance, though small, to reserve fund. Many of the latest novelties in Chrysanthemums were represented, including L. Behmer, Vivian Morel, Casar Costa, and R. Cannell.

The non-competitive exhibitors were numerous, and much more space will, in future, have to be devoted to them. Among those who came under this category were Messrs. Allen Bros., Henton, who had some fine examples of floral emblems on their bench; Messrs. William Clibran & Son, of Altrincham, who had a superb collection of rare Chrysanthemums; Mr. William Southern, of the Market Hall, Bolton, who had a large array of exotics; and Mr. W. Taylor, who had a choice assortment of a similar character. The following were the principal awards made:—

Open Classes.—Groups of Miscellaneous plants, arranged for effect.—1st, Mr. Thomas Wilkinson, (gr., Mr. John Pountain).

Group of Chrysanthemum plants, arranged for effect.—1st, Mrs. Charles Taylor (gr., Mr. J. Taylor).

Cut Blooms of Chrysanthemums, twenty-four large varieties, twelve incurved and twelve Japanese.—1st, and the Medal of the Royal Horticultural Society, Mr. John Stanning (gr., Mr. J. Kirkman).

Twelve Incurved.—1st, Mrs. Edward Cross (gr., Mr. J. Wainwright).

Twelve Japanese.—1st, Mr. John Stanning.
Open to all, except nurserymen, within eight miles of the Town Hall.—Six pots of Primulas.—1st, Mr. Thwaites (gr., Mr. G. H. Cross).

Six dinner-table plants.—1st, Mr. T. H. Thwaites.

For Chrysanthemum plants, six incurved, six Japanese, three incurved, and three Japanese, Colonel Ormerod was placed 1st in each of the four competitions.

Cut Chrysanthemum blooms (eighteen, nine incurved and nine Japanese).—1st, and the Medal of the Royal Horticultural Society, 1st, Mrs. E. Cross; 2nd, A. Knowles.

Twelve incurved.—1st, Mrs. Shaw.

Twelve Japanese.—1st, Mrs. E. Cross.

STOCKPORT CHRYSANTHEMUM SHOW.

NOVEMBER 20, 21.—A very fine show of Chrysanthemums, &c., was held in the Merchant's Institute on the above dates, which, as regards number of exhibits, has not been excelled in Stockport. The cut blooms were exceedingly good, but the pot plants, in some instances, were notable for the want of proper finish and trimness.

The miscellaneous plants were, on the whole, an attractive lot, and the exhibits of Messrs. Clibran & Sons, Altrincham, were greatly admired by the visitors, as also were those of Mr. Walker, the gardener at Vernon Park.

The opening ceremony was performed by the ex-Mayoress of Stockport, Mrs. W. Lee. The following were the principal prizes and prize-winners in the Chrysanthemum classes:—

Open division.—A group of Chrysanthemum plants, any varieties, arranged for effect in half-circle, 10 feet by 8 feet.—1st, J. F. Whitehead, Esq. (gr., T. Derbyshire); 2nd, J. C. Chorlton, Esq., Didsbury (gr., J. Horrocks). Six large flowering plants, distinct.—1st, J. C. Chorlton, Esq.; 2nd, J. A. Beith, Esq. (gr., F. Hart). Three large flowering plants, any variety.—1st, J. C. Chorlton, Esq. Single-flowering plant, Japanese.—1st, J. C. Jones, Esq. Single large-flowering plant, incurved.—1st, J. C. Chorlton, Esq.; 2nd, J. C. Jones, Esq. Three Pompons, distinct.—1st, J. Brown, Esq.

Miscellaneous Plants.—Groups of miscellaneous plants arranged for effect.—1st, Mr. C. Gleave, nurseryman, Stockport. Six dinner-table plants in pots.—1st, H. Rowland, Esq., Manchester (gr., Mr. J. Barclay); 2nd, C. J. Schofield, Esq., Whalley Range (gr., Mr. J. Wilson).

Cut Blooms of Chrysanthemums.—Eighteen cut blooms, large varieties, incurved and Japanese.—1st, Corporation of Stockport; 2nd, T. H. Sykes, Esq. Twelve cut blooms, incurved.—1st, T. H. Sykes, Esq.; 2nd, F. Whitehead, Esq. Twelve cut blooms, Japanese.—1st, T. H. Sykes, Esq.; 2nd, A. Galbraith, Esq.; 3rd, H. Marsland, Esq., Stockport (gr., Mr. J. Mathew). Twelve cut blooms, incurved and Japanese.—1st, J. Leigh, Esq., Brinnington (gr., Mr. J. Hadfield). Eighteen miscellaneous cut blooms.—1st, Corporation of Stockport.

Miscellaneous.—Six single spikes or trusses, Chry-

anthemums excluded.—1st, E. G. Wrigley, Esq. Spray of miscellaneous blooms.—1st, H. Marsland, Esq.

MANCHESTER CHRYSANTHEMUM SHOW.

NOVEMBER 24.—The annual show of Chrysanthemums was held in the Town Hall. Although the number of competitors of both plants and cut flowers was limited, there were some excellent contributions. At all shows of this kind, cut blooms take the lead, and here the quality was undoubtedly much better than we have seen at any former show of the Society. The stands of Mr. Goodacre, gr. to Lord Harrington; Mr. Blair, gr. to the Duke of Sutherland; and Mr. Horn, gr. to H. E. Robinson, Esq., Woolton, comprised the best grown and shown blooms, among which we noted the pink Etoile de Lyon, the golden-bronze Mrs. Wheeler, the golden wire-looking Gloriosum, Louis Behmer, fine pale pink; the grand effective golden Beauty of Castlewood, and W. H. Lincoln as being the best among the Japanese division.

In the incurved section there was nothing finer than the white Empress of India, although the old Queen of England as exhibited was quite magnificent, shaded blush; Lord Alcester, Princess of Teck, an excellent blush; Jardin des Plantes, Violet Tomlin, Lady Dorothy, a fine bronze; and Princess of Wales. Some excellent blooms were in the winning stand of J. K. Greatorex, of Shrewsbury, in both Japanese and in the incurved section; Mr. Goodacre was an easy 1st with his incurved blooms, which were large, and excellently exhibited. Among others, we might name Mr. G. Tomkinson, Tarpoley, Mr. T. H. Sykes, Cheadle, who was 1st in the twenty-four Japanese, and Mr. Blair, who had excellent stands generally, taking 1st position in the twelves, and who was 1st in the thirty-six miscellaneous cut blooms, followed by Mr. Tomkinson and Mr. J. C. Chorlton.

Among the most successful in plant-growing were J. C. Chorlton, Esq., Didsbury, and Mr. R. Hardwick, Ashton-on-Mersey, who took premier position in most of the classes. The plants were well grown, and clothed with leaves to the rim of the pot. The Pompons were a large exhibition, covering one side of the spacious hall, but they lacked the appearance of the larger sorts.

Wm. Clibran & Son, Altrincham, had a very effective table facing the orchestra, backed with Palms, and filled in with some of the best of Chrysanthemum blooms, mostly being finer than those of the dullish pink Etoile de Lyon; along with these was a fine stand of cut zonal Pelargoniums. Dickson, Brown & Tait had some very fine white and other Cyclamens; and Dickson & Robinson had Palms, Heaths, and Cyclamens; Pitcher & Manda had a contribution of cut Chrysanthemums.

Mr. Bruce Findlay sent some few plants from his garden, the most effective and novel among them was a collection of about fifty Cockscombs in flower. These had been late sown, and were well covered with foliage. There were also a few bright Cattleyas in flower, among which we recognised Cattleya labiata. Mr. Joseph Broome sent from Llandudno a charming exhibition of flowers, as clean and beautiful as if they had been grown under glass, among which were some late annuals, the Mignonne being extra fine, and the Roses Laurestinus, Gladioli, and Schizostylis looked well. The deep lavender-coloured Primula capitata is a grand border plant, and so is a white Antirrhinum named The Bride. There were a few excellent Dracenas, which went well as a centre row down the tables upon which the cut Chrysanthemums were staged. A very good piece of *Oncidium varicosum*, called Rogersi, was tabled from the collection of Mr. E. G. Wrigley. It had a large and much-branched panicle of more than ordinary symmetrical appearance.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 24.—A very interesting meeting of the Floral Committee of the above Society took place at the Royal Aquarium, Westminster, on the above date, a considerable number of fine varieties being staged for Certificates. M. Ernest Calvat, Grenoble, a French raiser, who has produced some remarkably fine varieties of Japanese Chrysanthemums, sent Madame Zurich, orange-cerise, with buff reverse, in the way of Sarah Owen; Madame Heuri Perrett, an ivory-white incurved Japanese, with primrose centre; and Madame Expulsion, a large incurved white Japanese, with delicate pink basal petals. Unfortu-

nately, the long distance these flowers had travelled robbed them of a great deal of their freshness.

From Mr. C. E. Shea, Foot's Cray, Kent, came some English Seedling Japanese, illustrating the remarkable advance being made in the direction of obtaining home-raised flowers. Mr. Shea had George Picker, Lionel Humphrey, a very fine and promising flower, which the committee wished to see again; it is in the way of Violet Rose, but darker in colour, both obtained from crosses made by Mr. Shea; also E. G. Hill, an American Japanese, two blooms of which were sent, one from a crown, the other from a terminal, to show the marked difference between flowers taken from the early and late buds; also blooms of Violet Rose, Japanese, Certificated last year.

From Mr. E. Beckett, Aldenham House, Elstree, came Japanese George Atkinson, a large white variety, like Avalanche, but later; Gaspard Rozain, a large pale incurved flower; Mrs. J. S. Fogg, deep yellow, of the shape of Avalanche, but thought to too closely resemble Edwin Beckett, a very fine variety from the same exhibitor, Certificated some time ago; Mrs. Levi P. Morton, a large pale-lilac Japanese with silvery reverse; and a highly promising seedling, unnamed.

Messrs. H. Cannell & Son, Swanley, sent Japanese incurved Mrs. F. A. Spaulding, bright nankeen-yellow, with long petals, very promising; E. G. Hill, in the way of Sarah Owen, salmon, with golden centre; Miss M. Wheeler, pearly-white; Gaspard Rozain, Emma Hilzeroth, a large full yellow Japanese; and the new and much-praised American incurved Ada Spaulding, a delicately-coloured, large, full flower, that should be grown from a terminal bud to have it well incurved.

Mr. Robert Owen, Floral Nursery, Maidenhead, sent a collection of fourteen new varieties, among them Countess of Hambleton, a magnificent variety of a soft, blush colour, the massive broad petals finely incurved, very distinct, and which was unanimously awarded a First-class Certificate of Merit; Lizzie Cartledge, also an incurved Japanese, lilac pink flushed with purple and silvery white reverse—First-class Certificate; J. P. Kendall, bright deep rose, silvery reverse, large incurved; Richard Nisbett, in the style of Sunset; Mrs. Bruce Findlay, a soft deep blush flower, in the way of Condor; F. W. Flight, ruby-cerise, reflexed, very bright in colour; Harry E. Widener, a large yellow Japanese; Madame Darquier, rosy pink with pale centre; Mrs. J. S. Fogg; Madame Camille Gironde, a large white broad-petaled flower, very pure in colour, incurved; Matthew Russell, a sport from Princess of Wales, like Mrs. S. Coleman, and thought to be not sufficiently distinct from it; Flora Macdonald, incurved, a large white variety of the Princess of Wales type; and Japanese incurved William Tunnington, in the way of La Japonnais, darker, very broad in the petals, and full of promise (Commended).

From Mr. J. Dibbens, nurseryman, Brockley, came a very fine English seedling Japanese named J. S. Dibbens, a large yellow flower, the basal florets slightly tinted with pale salmon; large, deep, and full (First-class Certificate).

Mr. R. Cawte, Esher, sent incurved Brookleigh Gem, a sport from Jeanne d'Arc, of a pretty silvery lilac-pink colour. From Mr. E. Cox, Brickendon, Herts, came Lizzie Cartledge, and Mrs. J. S. Fogg, described above. Mr. Herbert Sutton, Lower Redlands, Reading, sent a white sport from Sunflower, which the committee recommended should be grown another season and seen again.

From Mr. James Weston, Ravenholme, Balham, came Pompon Ethel Weston, a supposed sport from Rosinante, which it greatly resembles. Mr. W. Lane, King's Ride, Ascot, sent Japanese Lizzie Cartledge; from Mr. E. S. Wiles, The Gardens, Edgecote Park, Banbury, a sport from Guernsey Nugget, in the form it usually takes; and the same characteristic holds good of an incurved form of Cullingfordii sent by Mr. A. Wright, The Gardens, Devonhurst, Chiswick. Mr. N. Davis, nurseryman, Camberwell, sent Japanese Lilian S. Cole, a distinct white sport from Etoile de Lyon, which the Committee wished to see again.

Messrs. Pitcher & Manda, Hextable, Swanley, sent Japanese Primrose League, white, with slight primrose centre, and E. D. Adams, a large, deep, pale-coloured incurved Japanese, which becomes suffused with pink reticulations. Mr. Dismore, Harrow Weald, sent Kioto, a fine yellow Japanese, already Certificated; Leon Frache, and Thomas Cartledge, Japanese, reddish-brown, with yellowish-buff reverse.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	Above (+) or below (-) the Mean for the week ending November 21.	ACCUMULATED.				10ths Inch.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 4, 1891.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.	Below 42° difference from Mean since Jan. 4, 1891.				
1	+ 11	24	+ 205	+ 96	3	211	45.2	17	27
2	+ 11	27	+ 62	+ 137	2	162	26.7	14	30
3	+ 25	8	+ 86	+ 91	0	158	21.6	17	29
4	+ 31	7	+ 56	+ 97	2	169	23.4	7	33
5	+ 30	7	+ 94	+ 90	0	167	25.6	13	31
6	+ 36	0	+ 91	+ 121	3	162	29.2	7	36
7	+ 24	11	+ 93	+ 47	0	174	39.9	24	32
8	+ 27	2	+ 39	+ 25	3	160	31.5	13	29
9	+ 39	0	+ 129	+ 102	5	170	29.6	16	37
10	aver 23	12	+ 21	+ 56	1	191	29.6	33	31
11	- 29	10	+ 43	+ 45	4	171	33.5	24	34
12	+ 61	0	+ 33	+ 39	6	170	31.3	13	47

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 21, is furnished from the Meteorological Office:—

"The weather continued very rainy and unsettled in all parts of the Kingdom during the earlier part of the week, but towards its close a considerable improvement occurred, although rain still fell occasionally in the N. and N.W.

"The temperature was slightly below the mean in 'Ireland, S.' but about equal to it in 'Ireland, N.' but in all parts of England and Scotland it was above the normal value, the excess in 'England, S.' being as much as 4°. The highest of the maxima were registered either on the 18th or 19th, and ranged from 50° in 'Scotland, N.,' 53° in 'Scotland, W.,' and 55° in 'England, N.E. and Scotland, E.,' to 58° in 'Ireland, N.,' and 59° in 'England, N.W.' and the Channel Islands. The lowest of the minima, which were recorded on somewhat irregular dates, ranged from 26° to 31° in 'Scotland,' from 26° to 29° in 'Ireland,' and from 30° to 32° over 'England.' In the 'Channel Islands' the thermometer did not fall below 43°.

"The rainfall was a little more than the mean in 'Scotland, E.' and 'England, N.W.,' and just equalled it in 'England, N.E.,' the 'Midland Counties,' and 'Scotland, W.' In all other districts there was a deficit, and this amounted to half the average in 'England, S.W.,' and a still larger proportion in the 'Channel Islands.'

"The bright sunshine shows an increase in the 'Grazing,' and a decrease in most of the 'Wheat-producing' districts. It has, however, been less than the mean in nearly all districts. The percentage of the possible duration ranged from 33 in 'Ireland, N.,' and 24 in 'Scotland, W.' and 'Ireland, S.,' to only 7 in 'England, E. and S.'"

THE "TEMPLE SHOW."—We learn that by permission of the Treasurer and Benchers of the Inner Temple, the great summer show of the Royal Horticultural Society will be held in the Temple Gardens on June 1 and 2, 1892, that is immediately in advance of the series of shows proposed to be held at Manchester in that month.

LARGE PITMASTON DUCHESS PEARS.—Last month 1 gathered twenty-six Pears (the crop) from a tree of Pitmaston Duchess, which is planted against a S.E. wall, and is about sixteen years old. The six best fruits weighed 7 lb. 14 oz. Is this an extraordinary weight? [Yes, we have no record of such heavy fruit. Ed.] Last Whit-Sunday (May 17), the tree was in full bloom, and the blossoms were covered with snow for some time, same as most of the other Pears. The tree is a regular bearer. J. Borlase Tibbits, Barton Seagrave Hall, Kettering.

MARKETS.

COVENT GARDEN, November 26.

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

Business quiet. Prices unaltered. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Apples, Canadian and Nova Scotian, per barrel	12 0-18	Kent Cobs, 100 lb.	30 0-35 0
Apples, ½-sieve	1 0-4 0	Lemons, per case	15 0-30 0
Grapes	0 6-2 6	Fine-apples, St. Michael, each	2 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Acacia or Mimosa, French, per bunch	1 0-1 6	Marguerites, per doz. bunches	3 0-4 0
Azalea, p. doz. sprays	1 0-1 6	Narcissus, paper white, Fr., p. bun.	4 0-8 0
Camellias, white, doz.	3 0-4 0	Orchids:—	
— red, per doz.	1 0-2 0	Cattleya, 12 blms.	6 0-12 0
Carnations, 12 blms.	2 0-2 6	Odontoglossum crispum, 12 blms.	3 0-6 0
Chrysanthemums, 12 blooms	1 0-3 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
— 12 bunches	3 0-12 0	— 12 sprays	0 6-1 0
Cloves, per dozen blooms	2 0-2 6	Roses, Tea, per dozen	1 0-3 0
Eucharis, per dozen	4 0-7 0	— coloured, dozen	2 0-4 0
Gardenia, per dozen	2 0-4 0	— yellow (Maréchal), per doz.	4 0-6 0
Heliotrope, 12 sprays	0 6-0 9	— red, per dozen	1 0-2 0
Hyacinths, 12 sprays	0 6-1 0	Tuberoses, 12 blms.	0 4-0 6
Lilac, white (French) per bunch	6 0-8 0	Violets, Parme, bunch	3 6-4 0
Lilium Harrisii, doz.	4 0-6 0	— Czar, per bunch	1 6-2 6
Maiden Hair Fern, 12 bunches	4 0-9 0	— English, 12 buns.	1 0-1 6
Mignonette, doz. bun.	1 6-2 0		

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Adiantums, per doz.	4 0-12 0	Erica gracilis, doz.	8 0-12 0
Aralias, per doz.	6 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	18 0-63 0	— small, per 100	8 0-15 0
Begonias, per doz.	4 0-6 0	Ficus, each	1 0-5 0
Chrysanthemums, per dozen	6 0-9 0	Genistas, per doz.	10 0-15 0
— large, each	2 0-3 6	Scarlet Pelargo-niums, per doz.	4 0-6 0
Coleus, per dozen	3 0-6 0	Heliotropes, per doz.	4 0-6 0
Cyclamen, per doz.	9 0-18 0	Marguerites, per doz.	6 0-12 0
Cyperus, per doz.	4 0-10 0	Palms, various, each	2 0-21 0
Dracaenas, each	1 0 5 0	— specimen, each	10 6-84 0
Erica hymnalis, per dozen	12 0-18 0	Solanums, per dozen	9 0-12 0

VEGETABLES.—AVERAGE PRICES.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, each	0 4-0 6	Lettuces, per doz.	1 0-1 6
Beans, French, lb.	0 6 1 0	Mushrooms, punnet	2 0-...
Beet, red, per dozen	2 0-3 0	Mustard and Cress, punnet	0 4-...
Carrots, per bunch	0 4-0 8	Parsley, per bunch	0 3-0 6
Cauliflowers, each	0 3-0 6	Shallots, per lb.	0 6-...
Celery, per bundle	1 0-1 8	Spinach, per bush	3 6-...
Cucumbers, each	0 6-0 9	Tomatos, per lb.	0 9-1 3
Endive, per dozen	2 0-3 0	Turnips, per bunch	0 4-0 6
Herbs, per bunch	0 9-1 0		

POTATOS.

Arrivals during the week have been much heavier, and as the demand has not increased, the stocks on hand are nearly double. Trade dull. J. E. Thomas.

SEEDS.

LONDON, Nov. 25.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pool, London, S.E., report a firm market for American and all other descriptions of

Red Clover seed. White seed more particularly has this week been in favour, at advanced values. There is no change in either Alsike, Trefoil, or grasses. Blue boiling Peas hold their own; arrivals continue meagre, and stocks generally are remarkably light. Giant and small Haricot Beans tend upwards. New Scarlet Runners are now cheap. Canary seed show a further rise of 1s. per qr. Hempseed keeps firm. Winter Tares are in somewhat improved request. Buckwheat, Linseed, and Dari are steady.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 24.—Quotations:—Cabbages, 1s. 6d. to 2s. 6d. per tally; Savoys, 2s. to 2s. 6d. do.; Cauliflowers, 2s. 6d. to 10s. do.; Greens, 1s. to 1s. 6d. per dozen bunches; Turnips, 1s. 9d. to 2s. do.; Carrots, 1s. to 2s. 6d. do.; Onions, 2s. to 2s. 6d. do.; Parsley, 1s. 6d. to 2s. do.; Beetroot, 1s. to 2s. 6d. do.; Spinach, 1s. to 1s. 9d. per bushel; Brussels Sprouts, 9d. to 1s. 3d. per half-sieve; Parsnips, 4d. to 9d. per score; Cos Lettuce, 4d. to 10d. do.; Endive, 1s. to 1s. 3d. per dozen; Cabbage Lettuce, 3d. to 6d. do.; Leeks, 1s. 6d. to 2s. 6d. do.; frame Cucumbers, 1s. 3d. to 1s. 9d. do.; Belgian Onions, 3s. to 4s.; Dutch do., 3s. 3d. to 4s. 6d. per bag of 110 lb.; Spanish do., 6s. to 6s. 6d. per case; Celery, 6d. to 1s., and Horseradish, 1s. to 1s. 1d. per bundle; English Apples, 3s. to 6s. per bushel; American do., 10s. to 12s. per barrel; Pears, 1s. 6d. to 2s. 6d. per half-sieve; English Tomatos, 5s. to 7s. 6d. per peck; foreign do., 1s. to 1s. 9d. per per box.

BOROUGH: Nov. 24.—Quotations:—Cabbages, 2s. to 3s.; Savoys, 2s. 6d. to 3s.; Broccoli, 4s. to 5s. per tally; Spinach, 2s. to 3s. 6d. per bushel; Turnips, 1s. to 1s. 6d.; Carrots, 1s. to 1s. 9d. per dozen bunches; English Onions, 4s. 6d. to 5s. per cwt.; English Apples, 2s. to 6s., and Pears, 2s. 6d. to 7s. per bushel; Canadian Apples, 12s. to 25s., and Newtown Pippins, 18s. to 45s. per barrel.

STRAFORD: Nov. 24.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Cabbages, 2s. to 3s. per tally; Savoys, 3s. to 5s. do.; Greens, Collards, 1s. 9d. to 2s. 3d. per dozen; do., 1s. 3d. to 1s. 9d. per bunch; Cauliflowers, 9d. to 1s. 3d. per dozen; do., 3s. 6d. to 7s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 30s. to 42s. per ton; Carrots, household, 28s. to 40s. do.; do., cattle-feeding, 25s. to 32s. do.; Parsnips, 9d. to 1s. 6d. per score; Mangels, 14s. to 18s. per ton; Swedes, 21s. to 23s. do.; Onions, English, 100s. to 120s. do.; do., Dutch, 2s. 9d. to 4s. 6d. per bag; do., Oporto, 6s. 6d. to 8s. per case; Apples, American, 14s. to 21s. per barrel; Sprouts, 1s. to 1s. 3d. per half-sieve; do., 2s. to 2s. 6d. per sieve; Celery, 8d. to 1s. 6d. per roll; Horseradish, 10d. to 1s. 6d. per bundle.

POTATOS.

SPITALFIELDS: Nov. 24.—Quotations:—Magnums, 60s. to 75s.; Regents, 60s. to 70s.; Champions, 55s. to 65s.; Imperators, 55s. to 75s.; Hebrons, 60s. to 80s.; Snowdrops, 60s. to 70s. per ton.

BOROUGH: Nov. 24.—Quotations:—Hebrons and Elephants, 70s. to 90s.; Imperators, 60s. to 55s.; Bruces and Magnums, 70s. to 90s. per ton.

STRAFORD: Nov. 25.—Quotations:—Magnums, 65s. to 85s.; Hebrons, 70s. to 85s.; Imperators, 65s. to 85s.; Regents, 65s. to 75s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Nov. 21, and for the corresponding period of last year:—1891, Wheat, 38s. 9d.; Barley, 31s. 3d.; Oats, 28s. 4d. 1890, Wheat, 32s. 9d.; Barley, 28s. 11d.; Oats, 17s. 8d. Difference: Wheat, +7s.; Barley, +2s. 1d.; Oats, +4s. 8d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; do., inferior, 40s. to 75s.; hay, best, 60s. to 92s.; do., inferior, 28s. to 59s.; and straw, 20s. to 40s. per load.

NOTICES TO CORRESPONDENTS.

Books: Constant Reader. *Watercress*, by Shirley Hibberd, published by Messrs. W. H. and L. Collingridge, 148, 149, Aldersgate Street, E.C.—*Alexander Black.* *Henry's Elementary Course of Botany*, 4th edition (John Van Voorst, Paternoster Row, London, E.C.).

CHRYSANTHEMUM SPORT FROM LA TRIOMPHANTE: H. E. F. The bloom has good form, but the colour has nothing to recommend it.

FELLOW OF THE ROYAL HORTICULTURAL SOCIETY: F. W. R. You will be furnished with the information you seek by applying to the Secretary, Rev. W. Wilks, 117, Victoria Street, Westminster.

FELLOWSHIP OF LINNEAN SOCIETY: C. J. D. Communicate your wish to become a Fellow to the

Assistant-Secretary, Dr. J. Murie, M.D., LL.D., Offices, Burlington House, Piccadilly, London.

FOACING PIT: Hortus.—Your forcing-pit is sufficiently heated and ventilated for the growth of either Tomatos or Cucumbers; but as the former do not require so high a temperature, so much aerial or root moisture, or so little ventilation, as the latter, they would be better grown apart. Divide your pit into two parts, and arrange the hot-water pipes so that you can regulate the heat as may be desirable, that is, put in a T-shaped connection in the bottom-heat and top-heat pipes, close to the partition, and just beyond this put throttle valves in the flow pipes. We cannot advise you as to the more profitable subjects to grow. The markets are flooded with home and foreign produce, and prices seldom rule high.

FRUIT GROWERS FOR MARKET: A. B. We are unable to do as you wish. Why not make enquiries in the large markets in London and elsewhere?

GEMMED PEACH TREES: J. Bowie. Transplant the trees, drain the border if wet, keep the roots near the surface, disbud gradually, commencing not earlier than June 6, and keep the shoots thin by disbudding during growth, so that but little winter-pruning will be needed.

HEAVIEST BUNCH OF BLACK HAMBURGH GRAPES EVER SHOWN IN THE BRITISH ISLES: J. M. On August 21, 1874, Mr. Hunter showed at Belfast one bunch of Black Hamburg Grapes weighing 21 lb. 12 oz.

INSECT-EATING BIRDS: C. T. We shall shortly be publishing an account of insectivorous birds of this country. There is no kind of netting that would suit all sorts of birds.

MARGUERITE MAGGOTS: T. S. We know of no remedy beyond picking off the leaves and burning them.

NAMES OF FRUITS: T. H. 9, Colonel Vaughan (pale); 10, Domiuo; 11, Cox's Orange Pippin; 14, Bedfordshire Foundling; 17, King of the Pippins; 20, Lewis's Incomparable; 21, Dutch Mignonne; 23, Duke of Beaufort; 24, Winter Peach; 25, Old Nonpareil; 26, Court of Wick.—*C. E. W.* 1, not known—specimen much bruised; 2, Pear, Winter Nelis; Apple, Maltster.—*Lavant.* Apple: Peasgood's Nonsuch—*Forge.* 1, Catillac; 2, Maréchal de la Cour.—*J. E. N.* 1, Hawthornden (new); 2, Chaumontelle; 18, Rymer; 20, Nonsuch; 25, Comte de Lamy; 30, Lucombe's Pine; 212, Golden Harvey.—*Thos Taylor.* Your Pear is Doyenné du Comice.—*J. Methuen.* Apple: Cox's Pomona.—*Correspondent.* 1, Dutch Mignonne; 2, Chaumontelle.—*C. T.* Pears quite rotten; impossible to name.

NAMES OF PLANTS: G. B., Mont St. Amand. *Mormodes*, new species. Please send particulars of plant, and state its origin, to enable description to be finished. Can you spare a leaf?—*C. Woodbridge.* *Cypripedium insigne*, variety with unusually yellow lip and petals.

SHOWING REFLEXED CHRYSANTHEMUMS: C. H. As the schedule contained no class for Japanese reflexed varieties, the exhibitor was not within his right in showing them, the ordinary reflexed varieties being those for which the prizes were offered by the Society.

SKIN IRRITATION AND PRIMULAS: I. T. H. Some persons when handling plants of *Primula obconica* suffer from a kind of rash on the hands, arms, and sometimes the face.

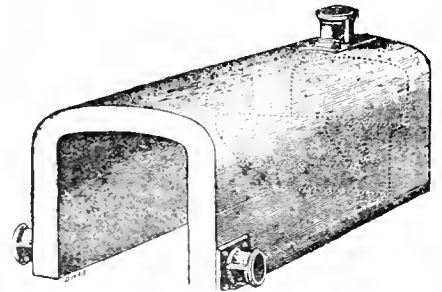
VINERIES: J. Bowie. 1, There being less variation in the temperature in span houses, if large, the Grapes keep best in these; but, after all, the good keeping of Grapes hanging on the Vine depends greatly on the management of the vinery, and very little on size, aspect, or form. 2, If the house is of wood, you might have portable sashes over the greater part of the roof, the ventilating portion excepted. 3, The panes of glass might be 3 feet by 10 inches. 4, Fix training wires at 1½ feet from the glass.

COMMUNICATIONS RECEIVED.—H. Correvon, Geneva.—Ch. de R., Lierre.—W. Woodgate.—R. Middleton.—F. Geeson.—Quinton Read.—Tull.—C. D.—C. P. Lee.—W. Parker.—M. T. M., telegram, &c., received in time.—W. E. D.—R. D.—J. R.—A. A.—C. de B.—F. R. H. S., please send full name and address.—Dr. Kraenzlin.—P. Reid.—C. A. M. C. Wild Rose.—Shupman.—E. J.—W. P. R.—F. Ross.—E. C.—D. T. F.—R. R.—J. Eyerman.—H. Williams.—A. G. D. T.—W. W. Good.—H. G.—W. D.—A. F. Gosden.—W. Cann, we have no record of your sending.—Constant Reader.—W. H. D.—W. W.—Seeger & Tropp.

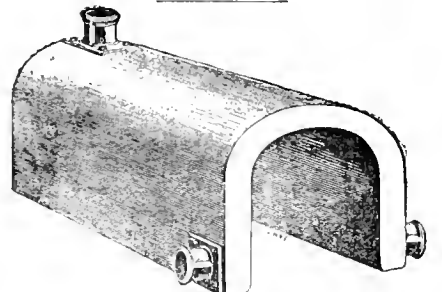
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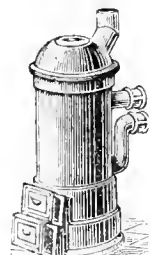


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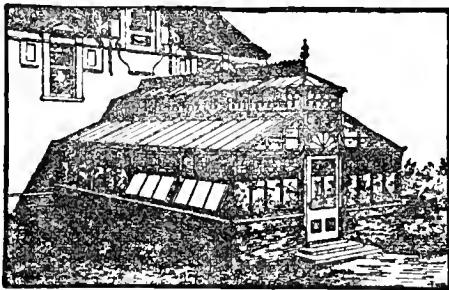
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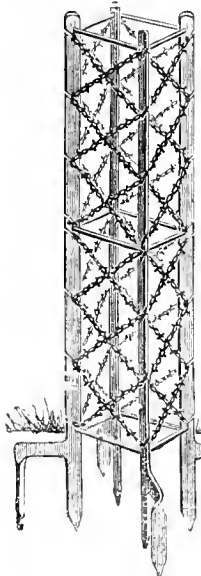
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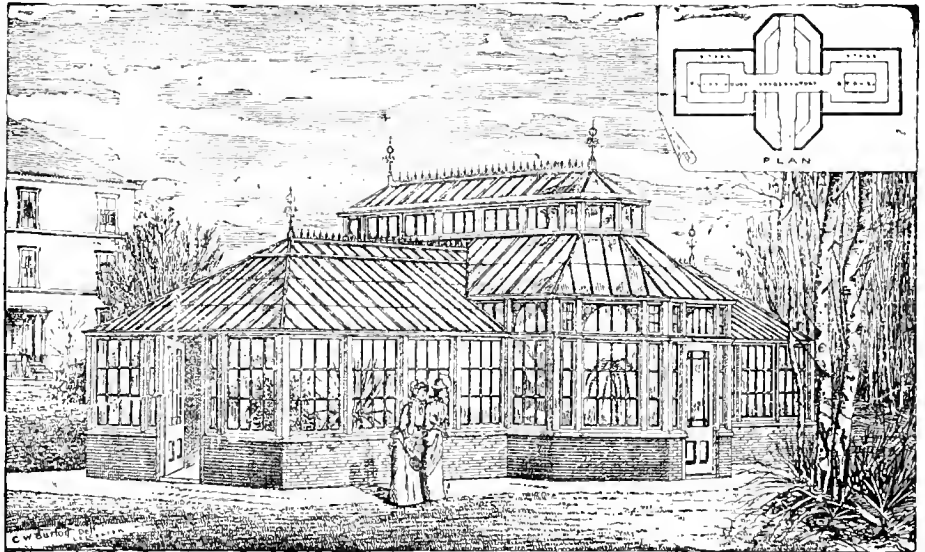
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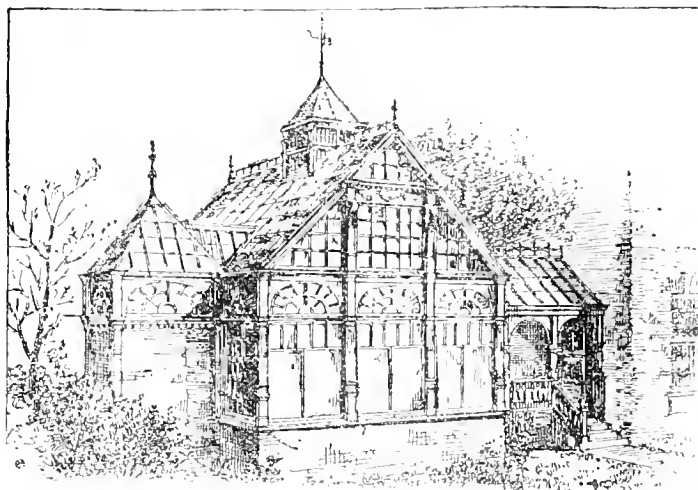
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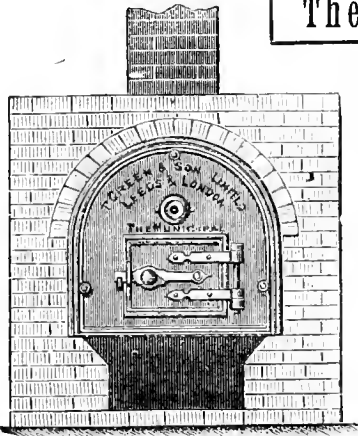
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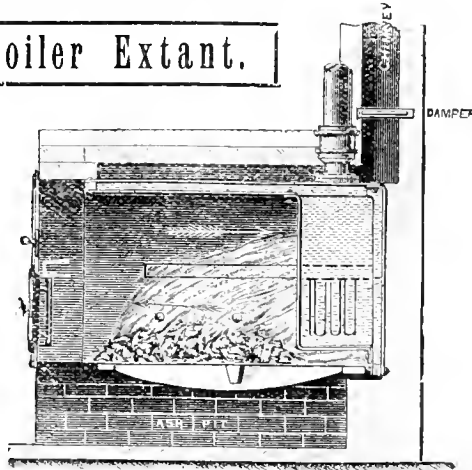
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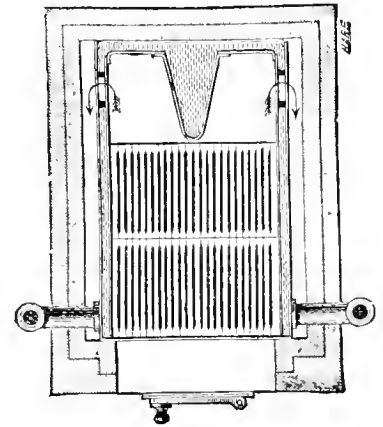
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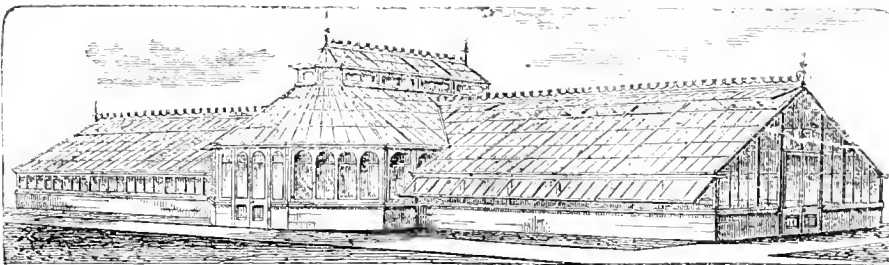
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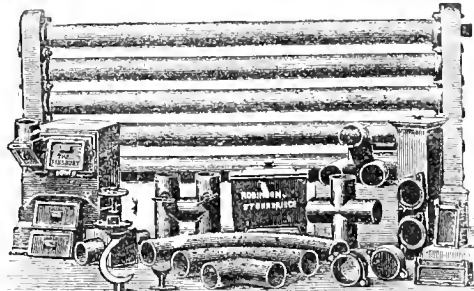
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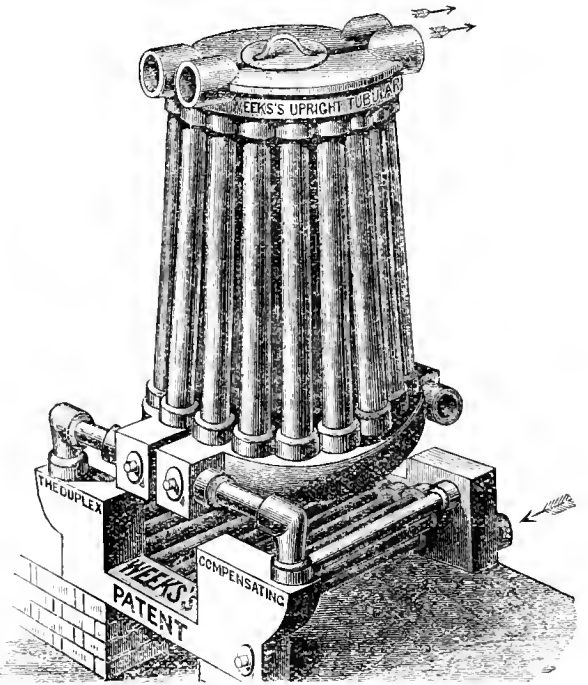
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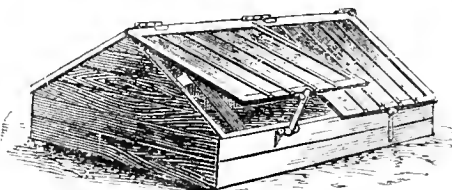
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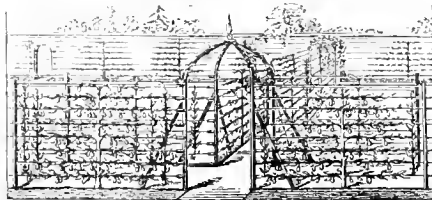
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An immense Collection of HARDY PLANTS and BULBS, comprising 700 choice double Hollyhocks, Pyrethrums, Phlox, and Delphiniums; 500 CARNATIONS, PICOTEEES, and PÆONIES; 600 English-grown LILIES, of the best kinds; 500 BEGONIAS, 500 named IRIS and DAHLIAS, 2000 double Roman and other NARCISSUS, DAFFODILS, GLADIOLI, ANEMONES, 5000 Miscellaneous BULBS, and a large quantity of hardy PERENNIALS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Rooms, 67 and 68, Cheap-side, London, E.C., on TUESDAY NEXT, December 8, at half-past 11 o'clock.

On view morning of Sale, and Catalogues had.

Wednesday Next.

- 10,000 ripe and fresh SEEDS of COCOS WEDDELIANA.
750 " " " MARTINESIA DISTICHA.
500 BEGONIAS CRASSIFOLIA GRANDIFLORA ERECTA SUPERBA.
500 GLOXINIAS, splendid spotted varieties, received direct for unreserved Sale.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, December 9.

On view morning of Sale, and catalogues had.

Wednesday Next.

- AZALEAS, ROSES, FERNS, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Rooms, 67 and 68, Cheap-side, London, E.C., on WEDNESDAY NEXT, December 9, at half-past 11 o'clock, 100 AZALEA INDICA, AZALEA MOLLIS, CAMELIAS, and 1000 BEGONIA and GLOXINIA BULBS, from Belgium; 10,000 Seeds of COCAS of WEDDELIANA; and 750 of MARTINESIA DISTICHA, from Brazil; a consignment of PLATYGERIUMS (Stag's HORN FERN), of sorts; and ASplenium species received direct from Brisbane; 40 lots of choice English-grown Greenhouse and Stove FERNS; 150 PALM, LILIUM HARRISII, BELLADONNA LILIES; 2000 NARCISSUS ETOILE D'OR, Standard and Half standard ROSES, Home-grown LILIES in great variety, LILY OF THE VALLEY, and a consignment of named HYACINTHS, and TULIPS for Pots, Glasses, and Bedding; CROCUS, NARCISSUS, and other Dutch FLOWER ROOTS from Holland.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. LINDEN,

L'HORTICULTURE INTERNATIONALE, BRUSSELS, HAVE INSTRUCTED

MESSRS. PROTHEROE AND MORRIS to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheap-side, London, E.C., on FRIDAY NEXT, December 11, at half-past 12 o'clock—

- A GRAND IMPORTATION of 1000 PLANTS of the BEAUTIFUL NEW SCARLET

ODONTOGLOSSUM NOETZLIANUM,

Just arrived in the best possible condition, among them being some extra fine masses.

We have succeeded, after many months' research, in securing the quantity offered. Most magnificent varieties will be flowered among them. For cut-flower purposes this grand Orchid will stand unrivalled, being one of the freest-growing species of the type.

On view morning of Sale, and Catalogues had.

Friday Next.

LÆLIA ELEGANS.

A consignment of various ORCHIDS, including 70 fine plants of LÆLIA ELEGANS, and a quantity of ONCIDIUM CRISPUM, from Brazil.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE on FRIDAY NEXT, December 11, together with a quantity of established unflowered OdonTOGLOSSUM ALEXANDRE (best type), a fine lot of imported CYPRIPEDIUM SPECTABILE, CYPRIPEDIUM ACAULE, and established ORCHIDS, various properties.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA TRIANÆ ALBA.

A consignment of about 100 plants. Imported from Columbia by Mr. R. THOMSON, many years Superintendent of the Botanical Department, Jamaica. Mr. Thomson says these white varieties were collected during a long residence in Columbia, and have been duly tested.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE on FRIDAY NEXT, December 11.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE on FRIDAY NEXT, December 11—

A fine consignment of RARE TERRESTRIAL ORCHIDS for cool house or frame, most of them very fragrant

DISA UNCINATA

offered for the first time. A pretty yellow species of the broad-leaved section to which D. grandiflora belongs. Tufts with healthy tubers as collected.

BARTHOLINA PECTINATA (the Spider Orchid),

flowers blue, handsomely fringed and sweet; DISPERIS CAPENSIS, rosy-purple; DISPERIS CAPENSIS LUTEA, yellow; DISPERIS DECIMIDA, pale yellow and green; SATYRIUM CARNEUM, the largest of the genus, and easily grown if treated like Hyacinths. Immense tubers of SATYRIUM CANDIDUM, the pure white fragrant species; SATYRIUM ERECTUM, yellow; DISA SPATHULATA, a most extraordinary species, with long spear-like lip, and other rare kinds.

On view morning of Sale, and Catalogues had.

Havant.

EXPIRATION OF LEASE. SECOND PORTION.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Sea View Nurseries, Havant, on TUESDAY and WEDNESDAY, December 8 and 9, at 12 o'clock, each day, the SECOND PORTION of the particularly well-grown and healthy NURSERY STOCK, which is in exceptionally fine condition for removing, comprising about 8000 Ornamental Trees, 5000 Flowering and Ornamental Foliage Shrubs, 5000 beautifully grown Conifers and Evergreens; 3000 Fruit Trees, several thousands of Roses, for the growing of which, these Nurseries have a wide spread reputation, and a large stock of smaller Evergreens and Conifers suitable for the Trade for growing on.

May be viewed. Catalogues on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Feltham, Middlesex.

Absolutely WITHOUT RESERVE.

A PORTION of the exceptionally well-grown NURSERY STOCK, by order of Messrs. C. Lee & Son, the ground being required for other purposes. The Stock is in magnificent condition for removal, having been recently transplanted with great care.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Lee's Nurseries, Feltham, Middlesex, on THURSDAY and FRIDAY, December 10 and 11, at 12 o'clock each day, without reserve, thousands of exceptionally well-grown Specimen CONIFERS, the whole of which have been transplanted with great care, and will remove with safety. Specimen Conifers are a special feature at this Nursery, and the Auctioneers desire to call particular attention of Gentlemen and others to this important item in the Sale. The Catalogue will also include a grand lot of Specimen GOLDEN YEW, 1500 CUPRESSUS RECTA VIRIDIS, 2000 ENGLISH YEW, 2 to 4 feet; 1000 HOLLIES, 1 1/2 to 4 feet; 1000 named and HYBRID RHODODENDRONS, 1 1/2 to 3 feet; and other Stock.

May be viewed any day prior to the Sale. Catalogues can be obtained on the Premises, at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

N.B.—In the event of frosty weather setting in, arrangements can be made for allowing ample time for removing the lots.

Charlton Nursery, near Shepperton.

One mile from the Shepperton Station, L. & S. W. Railway. IMPORTANT CLEARANCE SALE.

To Gentlemen, Fruit Growers, and others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Bristow, who is relinquishing the Business, to SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, December 15 and 16, at 12 o'clock each day, without reserve, the whole of the valuable NURSERY STOCK, consisting of about 15,000 choice Evergreen and Coniferous Shrubs, 600 Privet, 5000 Standard and Dwarf Roses, in great variety, including the finest kinds in cultivation; a good assortment of Ornamental Trees, and 10,000 Fruit Trees, including quantities of the best Market kinds of Apples, Pears, and Plums; and a large number of Gooseberries, Currants, Peaches, and Apricots, of special attraction to Fruit Growers.

Also, the LEASEHOLD NURSERY and FRUIT FARM, of about 37 Acres, with Cottage, Buildings, and Greenhouse, held for 15 years unexpired, at a Low Rental.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

East Dulwich.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Orchid Nurseries, East Dulwich, S.E., on WEDNESDAY, December 16, by order of Messrs. Seeger & Tropp, a fine lot of ESTABLISHED HEALTHY ORCHIDS, among which will be included many exceedingly well-grown specimens and half-specimens, also choice new, rare, and beautiful species and varieties, a large number of Orchids in bud or flower, and a splendid collection of Vandas.

Plants will be on view the morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

The Orchid Nurseries are within five minutes' walk of East Dulwich Railway Station, L. B. & S. C. Ry.

Balham.—Clearance Sale. Close to Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Bedford Hill Nursery, Larch Road, Balham, on THURSDAY, December 17, at 1 o'clock, without reserve, 7 Span-roof GREENHOUSES, 1300 feet of 4-inch Hot-water PIPING, BOILER, BRICKWORK; also the stock of GREENHOUSE PLANTS, including a fine lot of specimen White Azaleas and Camellias, Flower Pots, &c.

On view two days prior to the Sale. Catalogues had on the Premises; of Messrs. MARCHANT and BENWELL, Solicitors, Broadway, Deptford, and 2, George Yard, Lombard Street, E.C., and of the Auctioneers, 67 and 68, Cheap-side, E.C. N.B.—The FREEHOLD NURSERY is to be SOLD for building purposes. Particulars of the Auctioneers.

Wednesday and Saturday Next.

1000 choice-named Standard and Dwarf ROSES, including many of the best sorts; 500 Pyramid and Dwarf-trained FRUIT TREES, a fine collection of BORDER PLANTS, STOVE and GREENHOUSE PLANTS, AZALEA MOLLIS from Ghent; Ornamental CONIFERS, LAURELS, LILACS, &c.; also HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, ANEMONES, and other DUTCH BULBS, lotted for all Buyers; BERLIN LILY OF THE VALLEY, SPIRÆA, GLADIOLI, LILIUMS, and many other BULBS and ROOTS.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY and SATURDAY NEXT, December 9 and 12, at half-past 12 o'clock precisely each day. On view morning of Sale, and Catalogues had.

Monday Next.

GREAT SALE OF DUTCH BULBS, LILIUMS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on MONDAY NEXT, December 7, at half-past 12 o'clock precisely, 70 lots of choice named HYACINTHS, TULIPS, and Bedding; Choice TULIPS, NARCISSUS, CROCUSES, SCILLAS, IRIS, and other BULBS, from Holland, and specially made up lots for all Buyers; 25,000 LILY OF THE VALLEY CROWNS, 12,000 SPIRÆA JAPONICA, 10,000 AMARYLLIS, 8000 LILIUM HARRISII, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

SPECIAL SALE OF DUTCH BULBS, LILIUMS, BORDER PLANTS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 10, at half-past 12 o'clock precisely, 600 lots of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, and other BULBS, from HOLLAND, also a fine collection of Home-grown LILIUMS and beautiful DAFFODILS, choice sorts of GLADIOLI, BEGONIAS, ANEMONES, FREESIAS, CALANTHES, SPIRÆA, LILIUM HARRISII CANDIDUM, LILY of the VALLEY Crowns, CARNATIONS, PINKS, PICOTEEES, and other BORDER PLANTS.

On view morning of Sale, and Catalogues had.

WANTED, IMMEDIATELY, a SMALL NURSERY.—Six Greenhouses, Midland town preferred. Price low.—State particulars to R. A., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

TO BE LET, 14 miles from London, on the Bath Road, HEATHROW FARM, Harmondsworth, Middlesex, from Michaelmas next; contains 438 acres of good Arable and 44 of Meadow Land. Let as a whole, or divided into three or four Market Gardens. The House and Buildings are 3 miles from West Drayton and Hayes Stations (G. W. R.), also Feltham and Ashford Stations (S. W. R.). No Agents need apply.

For particulars, apply to WALTER C. RICHMOND, Wrotham Park Estate Office, Barnet, Herts.

TO BE LET, a FRUIT FARM, at Orpington, Kent, with IMMEDIATE POSSESSION, comprising 72 1/2 acres, of which 18 acres are Gooseberries and Currants, in full maturity; 8 1/2 acres Hops, and the remainder Meadow and Arable Land.

Full particulars of Messrs. HUMBERT, SON, and FLINT, 11, Serle Street, Lincoln's Inn, W.C.

TO LET, on LEASE, a first-class FRUIT NURSERY—Eleven Grape, Peach, and Tomato Houses; Packing Sheds, two Dwelling Houses, and every convenience; standing on about 3 acres of walled-in Garden, in one of the finest Fruit-growing districts in England. Apply to—

MR. W. UNWIN, Fruit Salesman, Covent Garden Market.

KENT.—TO BE SOLD, an excellent compact MARKET NURSERY, with between 18,000 and 19,000 feet of modern Glass, well-heated, situated in one of the best districts for growing Plants and Fruit for Market.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheap-side, London, E.C.

TO BE SOLD (a sacrifice), the LEASE and about 15,000 feet of Glass in good order. House well-heated with Hot-water; a large quantity of Mould, Manure, Pots, Horse, Van, and Harness; some Stock, and other items; good Dwelling-house; Stabling, and every convenience; 1 acre of Ground. Rent minimal. Near London and Rail. Apply—

W. J. PIPKIN, Land Surveyor, 19, Barbot Street, The Hyde, Edmonton.

FLORIST AND FRUIT BUSINESS in main thoroughfare of Bournemouth.

TO BE SOLD AT GREAT SACRIFICE, owing to unforeseen circumstances of the Proprietor.

Apply to FOX and SON, Trade Valuers, Bournemouth.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses Call or write for Prospectus.

Address, SECRETARY, 43, Great Tower Street, E.C.

THE GARDENERS' ORPHAN FUND.

THE FOURTH ELECTION of Eleven Children to the Benefit of this Fund, consisting of an allowance of 5s. per week (subject to the Conditions stated in Rule XIII.), will take place on **FRIDAY, FEBRUARY 5** next, at the **CANNON STREET HOTEL, LONDON, E.C.** All Applications must be made on a proper Printed Form, Copies of which may be had gratis from the Hon. Secretary, or from any of the Local Secretaries. Such Form must be correctly filled up, duly signed, and returned to this Office not later than Monday, January 4, 1892.

A. F. BARRON, Hon. Sec.
Royal Horticultural Society's Gardens, Chiswick.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

Fruit Trees a Specialty.

APPLES, PEARS, PLUMS, STRAW-BERRIES, and all sorts of Small and Hardy Fruits grown in immense quantities. The best of the Old and New Varieties either to Grow for Market or Private Consumption. Special quotations for quantities. Descriptive CATALOGUE and GUIDE, the most complete issued, 6d. Ordinary LIST free. **JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.**

FERNS! FERNS!!—Trade Surplus Stock.—Greenhouse and Stove, 25 most saleable sorts, 12s. per 100; out of pots, 10s. Large Adiantum cuneatum, in 48's, bushy, 4s. per doz. Large Ferns, 10 most saleable sorts, Arabis Sieboldii, Primulas, Solanums, superior stuff, all in 48's, 5s. 6d. per doz. Palms, Ficus, Erica hyemalis, and Cyclamen, in 48's, 12s. per dozen, for bloom and fine foliage cannot be better. Pteris tremula, and Adiantum cuneatum, selected bushy, for potting on, 16s. per 100. Packed free, Cash with Order. **J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.**

IMPORTANT LISTS ON APPLICATION. Surplus Clearance **DAFFODIL BULBS**, in prime condition for Pots, Beds, and to Naturalise, at greatly reduced prices. Conference Michaelmas Daisies and Sunflowers. Choice Single and Double Paeonies. Choice Iris, Tall and Dwarf. Choice Hellebores and Lilies. Choice Gladioli, Carnations, Picotees, and Pinks. **BARR AND SON,** 12, King Street, Covent Garden, London, W.C.

POT ROSES.—A Bargain; room wanted.—Several thousand Niphetos, Catherine Mermet, Perle des Jardins, Isabella Sprunt, Madame Falcot, Safrano, Souvenir d'un Ami, and Marie Van Houtte. Splendid stuff. Established in 9 and 11-inch pots. Inspection invited. Price £5 and £6 per 100. **GUIVER BROS. AND LAWSON, Durant's Nursery, Ponder's End, Middlesex.**

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited,

Have just Purchased, and are now OFFERING for SALE, the

MYTON COLLECTION OF ORCHIDS, WHICH INCLUDES

- A splendid lot of **CYPRIPEDIUMS,**
- A splendid lot of **CATTLEYS,**
- A splendid lot of **ODONTOCLOSSUMS,**
- A splendid lot of **DENDROBIUMS,**
- A splendid lot of **LÆLIAS,**
- A splendid lot of **ONCIDIUMS,**
- A splendid lot of other **ORCHIDS** in variety.

All in the very Finest Health and Condition.

INSPECTION INVITED.

DESCRIPTIVE and PRICED CATALOGUE free, on application to the Company,

THE VINEYARD & NURSERIES, GARSTON, near LIVERPOOL.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to **SANDER'S, St. Albans.** The finest stock of Orchids in the World.—30 minutes from St. Paeraas.

ASPARAGUS, of fine quality—for forcing and planting; 2-yr. old, 2s. 3d. per 100; 3-yr. old, good roots, 3s. per 100; ditto, selected, 4s. per 100; 6d. per 100 less for quantities of 1000 and upwards. For forcing, 4-yr. old, 5s. per 100; 5-yr. old, apicoid roots, 7s. 6d. per 100; ditto selected, 10s. per 100; 6-yr. old, extra fine, 12s. 6d. per 100. Cash with order. My Asparagus always makes top price at Covent Garden.

Read the following unsolicited testimonial:—"Please send me another 200 of 5-yr. old Asparagus Roots. I may say that the last 200 were the best lot of forcing roots I ever bought, and my employer says the quality is excellent.—C. H. PERKINS, The Gardens, Milton Abbey, Blandford." **J. J. CLARK, Market Gardener, Goldstone, Brighton.**

New Apple, Chelmsford Wonder.

SALT MARSH AND SON, The Nurseries, Chelmsford, are now sending out this splendid **NEW KITCHEN APPLE**, which, after receiving an Award of Merit in March last, has had an additional award of a First-class Certificate at the meeting of the Fruit Committee of the Royal Horticultural Society on November 10.

It is a firm, handsome Apple, of large size, a good keeper, great bearer, and of superior flavour when cooked. It was favoured with a well-executed illustration, together with a faithful description, in the *Gardeners' Magazine* of April 11, copies of which may be had on application.

Strong Maiden Trees are now ready at 5s. each, with the usual discount to the Trade.

FOR SALE, SURPLUS NURSERY STOCK, Cheap. To effect a Clearance.

- 1000 SPRUCE FIR, from 2 to 6 feet, well-furnished, being frequently transplanted.
- 400 POPLAR, 6 to 10 feet.
- 500 AUSTRIAN PINE, 2 feet.
- 1000 IVY, IRISH, 3 to 4 feet, stout, 15s. per 100.
- 6000 ASH, COMMON, 4 feet, stout, 25s. per 1000.
- 300 FILBERTS, KENT COBS, 3 feet, fruiting, 50s. per 100.
- 300 yards BOX-EDGING, 6d. per yard.
- 20,000 STRAWBERRY PLANTS, LAXTON'S NOBLE, new, 15s. per 1000.

W. DALE, Knockholt, Kent.

Special Cheap Offer to the Trade and large Planters.

ISAAC MATTHEWS AND SON have large quantities of the under-mentioned trees to offer cheap:—100,000 RHODODENDRONS, Early, White, Scarlet, Pink, and other varieties, fine plants; and 500,000 Poticum and Seedling Hybrids, various sizes, from 1 to 4 feet, by the 100 or 1000; 500,000 THORN QUICK, four and six-year old, extra strong; COMMON ASH, 3 to 4 feet and upwards; MOUNTAIN ASH, 5 to 12 feet; BIRCH, 8 to 9, 9 to 10, and 12 feet; HORSE CHESTNUTS, from 2 to 10 feet; and a large quantity of Horse Chestnuts, 12 to 15 feet, and specimen trees for avenue-planting. ENGLISH YEW, ELMS, and HORNBEMS, 5 to 10 feet; AUSTRIAN PINES, fine trees, 3 to 8 feet; recently-transplanted POPLARS, varieties, 6 to 12 feet; SPRUCE, for Christmas Trees, also for Forest Planting; AUCUBAS, HOLLIES, BOX, CUPRESSUS, IVIES, LAURELS, &c.

CATALOGUES on application. The Nurseries, Milton, Stoke-on-Trent.

R. COLLYER, Cart House Lane Nursery, Woking Station, Surrey, begs to offer the following TREES and SHRUBS:—

- CUPRESSUS LAWSONIANA, 6 to 7 feet
 - ERECTA VIRIDIS, 4 to 7 feet
 - THUJA LOBBII, 5 to 7 feet
 - THUJA BOREALIS, 4 to 5 feet
 - THUJA ARBORESCENS, 7 to 8 feet
 - HOLLY, COMMON, 3 to 7 feet, stout
 - Standard and Half-Standard, Waterer's Golden smooth-leaf, with nice round heads (15 to 20 years' growth)
 - ENGLISH YEW, 3 to 5½ feet, well-grown plants
 - SPRUCE FIRS, 2 to 4½ feet
 - POPLARS, Canadensis Nova, 14 to 18 feet
 - LIMES, 12 to 14 feet
 - SILVER BIRCH, 10 to 14 feet
 - THORNS, Standard and Pyramid, Paul's Double Scarlet, 7 to 9 feet
 - APPLES, 1 and 2 years, good sorts
- May be seen any time; or, further particulars given on application. Satisfactory references required.

GARDEN BULBS, ROSES, &c.

FOR WHATEVER IS WANTED, mentioned or not in these columns, please to write immediately to **H. CANNELL & SONS,** whose SEED and NURSERY STOCK is very complete and extensive, and where nearly everything for the Garden is grown and supplied in large quantities, in the finest possible condition, at the lowest prices consistent with correctness and superior character. Never has there been such a complete Autumn Catalogue issued of everything required for the garden as the one we are now sending post free; neither has there ever been such a splendid stock of best varieties of the many families of plants necessary to keep the garden in the highest state of perfection as we are now soliciting orders for. Our climate, soil, and facilities give us and purchasers many advantages, and we ask all to send for a Catalogue, and then



H. CANNELL & SONS, SWANLEY, KENT.

EXHIBITIONS.

NATIONAL CHRYSANTHEMUM SOCIETY, ROYAL AQUARIUM, WESTMINSTER. THE EARLY WINTER EXHIBITION of the above Society will take place on **WEDNESDAY and THURSDAY, December 9 and 10.** Valuable Prizes are offered for Cut Chrysanthemum, Cyclamen persicum, Primula sinensis, and plants arranged for effect on tables. Schedule of Prizes on application to—**RICHARD DEAN, Secretary, Ran-lagh Road, Ealing.**

BIRMINGHAM & MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT, AND Floricultural Society.

THE THIRTY-SECOND ANNUAL EXHIBITION of **CHRYSANTHEMUMS, FRUITS, VEGETABLES, &c.,** will be held on **WEDNESDAY & THURSDAY, November 9 & 10, 1892.** **J. HUGHES, Secretary.** 140, High Street, Harborne, Birmingham.

To those about to Plant. **A DESCRIPTIVE CATALOGUE** of Roses, Fruit Trees, Conifers, Evergreen and Flowering Shrubs, Rhododendrons, Ornamental and Forest Trees, Clematis, and other Climbing Plants, in large variety, sent free on application to—**GEO. JACKMAN AND SON, Woking Nursery, Woking.** Established 1810. Area, 150 Acres.

CHRYSANTHEMUMS.—Proved **NOVELTIES** in EARLY, JAPANESE, INCURVED, and other Select Varieties. New **LISTS** free. Gave great satisfaction last year. **A. J. A. BRUCE, The Nurseries, Chorlton-cum-Hardy, Manchester.**

B. S. WILLIAMS AND SON'S LILIUM AURATUM, 6s. to 15s. per dozen. LILIUM HARRISII, 6s. to 15s. per dozen. LILIUM LANCIIFOLIUM ALBUM, 12s. per dozen. LILIUM LANCIIFOLIUM ROSEUM & RUBRUM, 7s. 6d. doz. LILIUM LONGIFLORUM, 4s. 6d. per dozen. Victoria and Paradise Nurseries, Upper Holloway, London, N.

CHRISTMAS TREES, 5 to 7 feet, 7s. 6d. per dozen; 2 to 3 feet, 2s. 6d. per dozen. THORN QUICKS, for Gapping, 4 to 5 feet, 20s. per 1000. All extra strong, well transplanted. Also **BURPEE'S NEW EXTRA EARLY** (Best Early) POTATO, and the **NEW SCOTCH CELT POTATO** (Best Maincrop), New Varieties for 1892, at 12s. per cwt. All for cash with order. Apply—**K. CRUST AND SON, Growers, Spalding.**

150,000.—Special Offer of Kentias. **W. ICETON** has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well-established, at £30 per 1000. **W. ICETON, Putney, S.W.**

DOBBIE'S CATALOGUE and COMPETITORS' GUIDE for 1892.—25th Annual Edition, 160 pages, illustrated. Described by one of the greatest authorities in England as "the most useful list published in the trade." Will be ready on January 1, and will be sent gratis then to all who apply for it before Christmas, and enclose 3d. to cover postage.—**DOBBIE AND CO., Seed Growers and Florists, Rothsay, Scotland.**

COVERT FOR GAME.

- LAURELS, Common, 1½ to 2 feet, 70s. per 1000.
- .. Bushy, 2 to 3 feet, 100s. per 1000.
- .. Very bushy, 3 to 4 feet, 15s. per 100.
- PRIVET, Evergreen, 2 to 3 feet, 35s. per 1000.
- SPRUCE FIRS, fine, 2½ to 3½ feet, 100s. per 1000.
- BEECH, extra strong, 3 to 4 feet, 40s. per 1000.
- QUICKS, extra strong, 2 to 3 feet, 21s. per 1000.
- .. thrice transpl., 3 to 4 feet, 30s. per 1000.
- LARCH and SCOTCH FIRS and other trees equally cheap. Catalogues and Samples free on application. **R. TUCKER, Nurseries, Faringdon, Berks.**

NARCISSUS, Grand Monarque.—Splendid Bulbs, 55s. per 1000, 6s. 6d. per 100; Soleil d'Or, 35s. per 1000, 4s. per 100; Scilly White, very early, 50s. per 1000, 6s. per 100; Poeticus, 6s. per 1000, 9d. per 100; Double Incomparable, 25s. per 1000, 3s. per 100; Double White, pure, 20s. per 1000, 3s. per 100; Single Sweet-Scented Jonquils, fine large bulbs, 20s. per 1000, 2s. 6d. per 100; Double Daffodils, 20s. per 1000, 2s. 6d. per 100; all true, sound stuff. Carriage paid by rail or steamer, in England, on 20s. Orders, Cash, Packing free. **PONTEY'S Bulb and Seed Warehouse, 21, Cornwall Street, Plymouth.** (Established nearly a Century.)

CHRYSANTHEMUMS.

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- PINUS AUSTRIACA, 1½ to 2, and 2 to 3 feet.
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- BLACKTHORN, 2 to 3, and 3 to 4 feet.
- DOGWOOD, scarlet, 2 to 3, and 3 to 4 feet.
- HAZEL, 2 to 3, and 3 to 4 feet.
- HORNBEAM, 2 to 3, and 3 to 4 feet.
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- " SCHWEDLERII, 12 to 18 feet, girth 4 to 8 inches.
- " WORLEYII, 12 to 14 feet, girth 3 to 6 inches.
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- BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
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- " Double White, 14 to 16 feet, girth 6 to 8 inches.
- " Scarlet, 12 to 18 feet, girth 4 to 10 inches.
- " Spanish, 12 to 14 feet, girth 4 to 5 inches.
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- " Guineasy, 16 to 18 feet, girth 7 to 9 inches.
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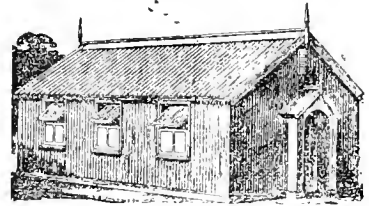
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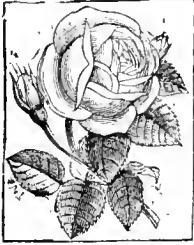
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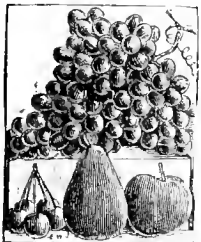
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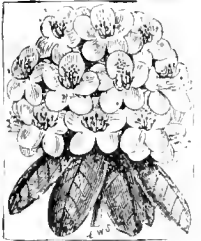


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TO THE
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FOR
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NEAR FARNBORO'.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 5, 1891.

SPYE PARK.

THROUGHOUT the length and breadth of Great Britain, with all its varying surfaces, it has always appeared to me that the most picturesque scenery was that of the lower greensand, cropping out from below the chalk, and often overtopping the adjacent ridges of that formation, as in the case of Leith Hill, near Dorking, which reaches a greater altitude than the highest points of the North Downs, higher than Box Hill, Newland's Corner, or the Hogsback, and higher even than Ditchling Beacon, Beachy Head, or any other eminence of the South Downs. The famous Surrey scenery of Dorking, Albury, Guildford, and Godalming, where so many persons find delight, and lodgings are so hard to obtain, and where quite a colony of artists has settled since the railways were built, and where, in the loveliest spot in Surrey, my natal village, I was as free to pursue my sports with rod and gun, when a boy, as Selkirk in his island, though now such privilege would be worth hundreds a year—the whole of that delightful district is on the lower greensand.

Spye Park, which I visited last May, is situated in that part of Wilts where this same picturesque formation borders on the Coral Rag of the Somersetshire Oolite. Bowood Park, 3 miles to the north, is partly on the Rag, but it owes its beauty mainly to the greensand, as does Longleat, further south, where the greensand—productive in Conifers and all kinds of shrubs—is as pleasingly unlevel as it is in Surrey. If I had engaged my trap at Devizes, instead of at Chippenham, I should have driven a distance of 5 or 6 miles to Spye Park in the greensand country entirely. It was in this pleasant country that Thomas Moore, pianist and poet, and "who dearly loved a lord," sang his own songs in the highest Whig society, which petted him for years, and left him poor. It was here he retired in much the same condition as the hare with many friends, one of these, the Marquis of Lansdowne, had asked him to Bowood to see

a house that would exactly suit him. It proved far beyond his means; but he wrote to his wife, "I have seen a cottage that will suit us."

Sloperton Cottage is in a lane as rural and retired as any poet could desire, three miles from Devizes, with the pleasing landscape of the greensand, all hill and vale, around it. The village of Bromham and the church, where "Tom Moore" rests from singing, are seen across a little vale in front, and on the left is upreared, some miles off, Roundaway Hill, which terminates the chalk range of the White Horse vale, and overlooks Devizes. Behind the cottage, across some fields, are the wooded slopes of Spye Park, whose embattled gateway, brought from an older house in the neighbourhood, is immediately opposite one of the entrances to Bowden Hill, the residence of Mr. J. E. Gladstone.

The owner of Spye Park is Captain Spicer, in succession to his father, who acquired the estate by purchase, and enjoyed the satisfaction of completing an improvement which Evelyn himself had suggested in his *Diary*, when he visited this place in 1654. At that time, Spye Park was owned by the distinguished family of Bayntun, whose seat had been previously Bromham House; and the importance of the new seat, and the size of the park, extending to 500 acres, are explained when I mention that the Bayntuns were a family of high position, of much greater consequence than mere country squires. Their chief seat, old Bonham House, was erected more than a hundred years before the time of Evelyn's visit to Spye Park, by Sir Edward Bayntun, Henry VIII.'s Vice-Chancellor. It was a despoiling age, when the favourites of Henry VIII., Defender of the Faith, often rose to sudden wealth by grants from the Crown, and sometimes lost it again. Devizes Castle and Corsham Manor House had been despoiled to furnish materials for building Bonham House, and the seat of its owners has been described as "nearly as large as Whitehall, and fit to entertain a king." Standing close to the great road from London to Bath, it was a convenient halting-place for people of fashion proceeding westwards. James I. was several times at Bromham, and used to hunt there in the Park. But in 1615, the king's forces had destroyed and burnt the great house, and this explains Evelyn's visit to the Bayntuns at Spye Park. The old family of the Bayntuns of Bromham, was destined to become extinct, and it seems that their talent and good sense were already waning. The "new house," which Mr. Spicer pulled down in 1868, was built of brick, and contained only one good room. Evelyn described it as "a place capable of being made a noble seat; but the humorous old knight has built a long single house of two low storeys, on the precipices of an incomparable prospect."

The present house stands a little behind the site of the older one, on rather higher ground, and commands the same fine view, extending due south before the best windows. Before these fortunate windows lies a stretch of country extending beyond Warminster and Trowbridge, towns lying a little to the left, the latter being a populous place, and showing its smoke by day, its lights by night. Melksham is 6 miles distant, due south. An interesting antiquity of the Park is the great Roman road, which passed from London through Oxfordshire, past Marlborough, and along the ridge of the Downs, overlooking the Vale of Pewsey. It came through Spye Park and some of the present shrubberies, but, I believe, no part of it is visible here now, though its course can be traced by the scorching

of the grass in summer on its site. The Park is exceedingly varied in contour. In driving through it on May 22, the lateness of the season was manifest in the foliage and the deficiency of flowers of the early-blossoming shrubs. The Hawthorn was not in blossom. My driver and I were deceived by a tree in the distance completely covered with white blossom. If the Whitethorn at Glastonbury could blossom at Christmas, as we read in the monkish stories, why not in Spye Park on May 22? But the gorgeous robe of white blossoms was merely the array of a Crab tree. The opening bud of the Crab blossom is generally, with some variation, richly tipped with scarlet, while the open blossom is as white as that of the whitethorn itself. There are some fine English Elms, and some extraordinary Oaks in the Park. There are deer, as befits an ancient enclosure of the kind, as well as a kennel of foxhounds, Captain Spicer being M.F.H. I believe there are fifty or sixty horses in the stable in the season—the more the merrier, most people would say; and each pair of horses requires, probably, one man to attend to their luxuries and comforts. A sensible country labourer finds in this arrangement grist for his mill, but I heard an orator on Peckham Rye object to the luxuries of the rich. In the good time coming there will be no pheasants to be fed, no hunters to be groomed. Society, the orator declared, required reorganising in every detail. It happens that in some parts of Wilts the landowners have lost their rents, and the labourers have wanted work; and when some wealthy trader has bought a property to reside on, and has set the people to work, and promoted industry, gardening, and sport, the people have welcomed him as a reorganiser, just such as they required. So long as thrift sets its shillings aside, capital must grow, and capital—which is but stored-up labour—is as necessary as industry.

Close to the stables is a newly-formed shrubbery, immediately below the site of the old house, and partly on the "precipice" mentioned by Evelyn. The shrubs will soon secure for this spot a pleasant seclusion, such as most persons find sometimes agreeable. In passing from the house to the stables, the path takes its winding way through the new shrubbery. The head gardener, Mr. Perry, took me to this scene of his recent labours by a short cut, and after admiring his excellent arrangements for clothing the precipice, we returned to the house by the new way. This brought us to the principal lawns, on the south-west side, which I had not before seen, and which were laid out very tastefully on the building of the mansion twenty-three years ago. The site is new, but the park is old, and there are trees standing on the lawn many hundred years old, and Portugal Laurels whose size and vigorous growth show how well the soil suits them. On the south side, a terrace with wall and balustrade is interposed between the house and park, the terrace being covered with lawn and flower borders, and its wall with various shrubs and creepers. A house is almost as much improved as the human figure by the addition of appropriate drapery, and as creepers on the walls of a big mansion are scarcely sufficient, a terraced garden, with draped walls and balustrade, is desirable, provided the house stands high, as it does here, so that the landscape may not be shut out. It is a handsome three-storied red-bricked house, with turrets and gables, and several large bay windows breaking the otherwise straight lines. The effect of the architecture is very pleasing, and the creepers, which cover a large portion of the walls, have greatly

assisted that wondrous painter, Father Time, in sobering their red tints.

The present owner is effecting a curious reform in replacing the plate-glass windows of his house with old-fashioned casements, glazed with small panes of glass in lead. I think most impartial people will admit that nothing can be uglier in the walls of a big house than a series of square holes, equidistant, for the most part, and each filled with one or two great panes of glass, without much relief or variety in the mouldings of the windows. Casements in the old style are much handsomer. It has always seemed to me an absurd objection to casements, that they shut out the view, as if people went into a house to stare out of the windows. It is true that persons are sometimes prevented from going out-of-doors by ill-health, broken legs, or other causes, and a few big panes might be very properly reserved for their use. But that is quite a different matter to the uncomfortable extreme of modern times, which in some cases—in some modern villas, with huge bay windows, all pane and no mullion—is carried to such excess that one might almost as well occupy a glasshouse which all the coals at Newcastle would hardly keep warm.

The kitchen gardens were formed fifteen years ago, just outside the Park, and Mr. Perry had reason to be proud of a good crop of wall fruit, including Plums, well set and safe, in spite of the frosts. The Potatos were cut to the ground a few days before my visit. The Melons were ripening in their house, and the plants looked so well that I inquired as to their culture. They were growing on a dung-bed having below them a good stiff fibrous loam, taken from the Park and stacked till the grass and roots were partly rotted, and then well trodden together in the frame. In an adjoining stove, Tomatos had been cut all the winter, the two favourite sorts for winter forcing being Horsford's Prelude and Ham Green Favourite.

It is worth remark, that in one of the stoves two Tree Ferns had the whole of their otherwise naked and rather unsightly stems beautifully covered with *Selaginella*. Mr. Perry recommends *Acalypha macrophylla* for its decorative foliage—superior to *Coleus*, which, although a stove plant in winter and spring, does well when established in the greenhouse during the summer, when the fine colours of the leaves become well developed. I must pass by the Orchids and Ferns, and the Cockscombs and Celosias in full blossom, and the large pots of *Pelargoniums* waiting for their allotted places outdoors. I paused among the pits, but must not add the lesson of their management to this long article. There were 500 *Chrysanthemums* in pots. The Violets and early Lettuces were over, and the lights removed. Potatos and Carrots were coming on, and a large stock of bedding plants was here under protection. The work of this large establishment is exceedingly well done, and only ten gardeners are employed. They could not do the work if the lawns and flower gardens were not comparatively limited in extent.

Instead of returning to Chippenham, I was driven to Melksham station, which is more convenient for Warminster, where I stopped a night; in order to visit Longleat the next day. On descending Bowden Hill, the young leaves of Oak and Ash on the lower level had been blackened and destroyed by the recent frosts, while the same kind of foliage in the drier atmosphere of Spye Park retained all the freshness and beauty of the young leaves, Potatos only having suffered. H. E.

NEW OR NOTEWORTHY PLANTS.

EPIDENDRUM PUSILLUM, Rolfe, n. sp.

This is a small and interesting species of Epidendrum, which has been sent to the Editor of the *Gardeners' Chronicle* on two occasions for determination, but which I have failed to identify with any existing description. It is said to have been received from Brazil. The pseudobulbs are ovoid-globose, about 5 or 6 lines in diameter, each bearing a single thick, fleshy, and very narrow leaf, about 5 inches long. The raceme seems to be reduced to a single flower, borne from the apex of the pseudobulb on a slender peduncle; but from the presence of a small barren extension of the latter and an empty bract, I infer that a stronger plant would develop a raceme of at least two or three flowers. The bract is lanceolate-ovate, acute, and 2 lines long. Sepals lanceolate, acute, 9 lines long by 2-2½ lines broad, light yellowish-green, irregularly freckled with light brown. Petals oblanceolate, apiculate, otherwise like the sepals. The lip is free from the column, three-lobed, and 7 lines long; the side-lobes, oblong, are acute, a line long, very pale green; the front lobe unguiculate, the blade broadly suborbicular, minutely apiculate, 3 lines broad, pink with some pale lines radiating from the disc; the base of the narrow claw is furnished with a pair of white, fleshy longitudinal keels. Column clavate, 3½ lines long. It belongs to the section *Encyclium*, and may be placed near to *E. tampense*, Lindl., with which it has some affinities. *R. A. Rolfe, Herbarium, Kew.*

APPENDICULA PEYERIANA, n. sp.*

The genus *Appendicula* is not very frequent in our collections. We received fresh materials from Mr. Ortgies, of the Botanical Garden at Zurich, Switzerland, to whom it was given by Mr. Peyer. We are indebted to this gentleman for many very interesting introductions from Sumatra of old, half-forgotten species, and we are very glad to have the opportunity to dedicate to him this new one. Imagine a small Dendrobie, with long, tender, drooping branches, with nearly opposite leaves, and two or three little white flowers, enclosed in somewhat showy white leaves or bracts on the top of the branches. you will then have a true idea of this plant. *Dr. F. Kränzlin.*

CHRYSANTHEMUM NOTES.

In visiting a few of the leading Chrysanthemum exhibitions during the season, I generally look out for any novel methods of exhibiting the plants, or signs of improved cultivation; but very seldom is any advance of this kind noticeable. There are the usual cut blooms, Japanese and incurved predominating; generally the Japanese are exhibited just as they are cut from the plants, but the incurved blooms are dressed. This is a well-known and legitimate practice; but the deformed petals are removed, and those petals with a tendency to reflex are made to incurve. Sometimes the work is very tedious. I know one exhibitor who spent an afternoon in manipulating one bloom before he could get the petals to assume the incurved form. There is no use to conceal this practice of the florist; some condemn it as being absurd, but it is done by all Chrysanthemum exhibi-

tors. The legitimate part of it consists in removing any malformed petals, and incurving those that remain; it is illegitimate to add anything to the flowers. In the early days of exhibiting, two flowers have been used in the formation of one; and one case has occurred this year where gum was used to close the centre petals together—that, I should say, is an illegitimate practice.

There does not seem much probability at present of any improvement being effected in the mode of exhibiting cut blooms, except that the stands for Japanese should perhaps be made a little larger. The distance at present is 6 inches from centre to centre of each bloom; this should be increased by an inch, which would make the stands of twelve blooms 4 inches longer and 4 inches wider. This is a very important matter for exhibitors, because they will be put to the expense of providing new stands, and travelling boxes of larger dimensions. Most Chrysanthemum Societies confine exhibitors' stands to 24 by 18 inches. The National Chrysanthemum Society wisely places no limit to the size of the

or £147. But the question of the introduction of this superb variety is of great interest, as it foreshadows a marvellously beautiful series of new varieties totally distinct from any of the old forms of *C. insigne*, and a great variety of which are already to be seen in flower at St. Albans. It appears that, a few years ago, Mr. Sander sent a collector to search the hills of Northern India, especially the higher altitudes, for a special purpose. While doing so in several districts, very high up, he found *Cyrtipedium insigne*, which, owing to their being advised as distinct, and to their being collected at high elevations, Mr. Sander included under the denomination *C. insigne montanum*, and under that name he sold a quantity which, in different places, have produced novelties which he has been only too glad to buy back. At St. Albans, however, appeared the most delicately beautiful specimen, and it was dedicated to Mrs. Sander. Lately appeared the beautiful *C. i. Bohnhofianum*, which is in the way of *C. i. Sanderæ*, but with purplish-brown base to the dorsal sepal, and a similar hue over the petals. Some of the forms which have flowered out of *C. i. montanum* have the whole flower suffused with a chocolate tinge and veining, except the white tip of the dorsal sepal; others have but six or seven large and nearly black blotches on the upper sepal, while many have but few dark spots on it, but the showiness is made up by from nine to fifteen carmine-crimson blotches beneath the pure white margin of the sepal. Indeed, it is difficult to find two alike, and it seems curious that the same importation should include the unspotted and untinged *C. i. Sanderæ*; the unspotted, but still tinged with purplish-brown, *C. i. Bohnhofianum*; and those numerous heavily-spotted varieties which are much darker and more richly coloured than any of the old *C. insigne*. Practically, there seems to be no limit to the variations and beauty of these forms of *C. i. montanum*.



FIG. 96.—CYPRIPEDIUM INSIGNE VAR. SANDERÆ.

Japanese stands, but limits the others. I think, however, the stands for Japanese ought also to be defined, and I believe 28 by 22 inches would be a good standard for them. *J. Douglas.*

CYPRIPEDIUM INSIGNE SANDERÆ.

Our illustration (fig 96) gives a representation of this most beautiful variety, whose clear shining yellow and snow-white wax-like unspotted flowers cause such admiration wherever they are seen. In our issue of November 21, p. 618, we give the commercial side of the question, by which it appears that the lucky importers, Messrs. F. Sander & Co., sold the plant in two portions at 70 guineas each. As the two plants gained in strength, their flowers increased in beauty, and their fame spread abroad until at last Mr. Sander, who has always been striving to get a portion of the plant back again, was glad to have his wish gratified by paying £250 for what was practically an eighth part of that which he originally sold

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PHALÆNOPSIS.

This remarkable Orchid, figured in a recent number, is the subject of comment by Mr. Watson, in *Garden and Forest*, for November 4, p. 521, and he speaks of it as the most beautiful of all the *Dendrobiums* hitherto introduced from Northern Queensland and the adjacent islands. It was discovered at Cape York, on the extreme north of Queensland, by a Captain Broomfield, who introduced living plants of it into his garden in Balmain, Queensland. Here it flowered, and was figured by Fitzgerald in his folio work on *Australian Orchids*. He also sent a description of it to the *Gardeners' Chronicle* for July 10, 1880. His figure represents a plant with pseudobulbs 18 inches long, terminal, erect racemes, produced from the matured pseudobulb, the longest raceme being 1½ feet long, and bearing ten flowers and buds. The flowers measure 2½ inches across, and they are described as being lilac in colour, with a few small dark calli on the disc of the labellum, and two white glands at the base of the column. There is a family likeness between *D. Phalænopsis* and *D. bigibbum*, *D. superbiens* and *D. Goldiei*; but, as Fitzgerald points out, the first-named is easily distinguished from these three in the form of its flowers and the shape of the labellum. The name *D. Phalænopsis* was given by Fitzgerald from the likeness of its flowers to moths as well as to those of the genus *Phalænopsis*. The plant in Captain Broomfield's collection flowered the following April, and produced 300 blooms.

In 1882, Mr. Forbes visited some of the islands north of Queensland, on behalf of the Geographical Society of London. He brought back with him several living plants, and among them was a plant of this *Dendrobium*, which he obtained in Timor Laut. This plant came to Kew, where it flowered in September, 1884, and a figure of it was published in the *Botanical Magazine*, t. 6817. There is a decided difference between the plant flowered

* *Appendicula Peyeriana*, n. sp.—Affinis *A. callosæ*, Bl. Sepalo dorsali triangulo acuminato truncato, carina mediana in apicem producta, lateralibus longioribus in pseudoclearippo et ovario inquilongum elongatis dorso manifestius carinatis; petalis lateralibus sub-similibus paulo minoribus, medium usque tantum leviter carinatis; labello paulum longiore late linearis antice sub-patulo convulso calli 2, pone marginem antice in disco confluentibus ibique evanescentibus instructo; gynostemio e basi latissima dorso angustato apice bidentato; anthera 2-loculari acuminata purpurea; pollinibus 6 roseis; rostellulo bidentato.—Caulis tenuis subcompressus vaginis foliorum non dentatis vestitus. Folia oblongo-linearia antice sub-oblique biloba medio apiculata, 1 cm. longa, 2 mm. lata. Inflorescentia terminalis pauciflora (biflora, an semper?); bracteis paleaceis oblongo-ovatis obtusis aristulatisque albis pallide roseis vestita. Flores albi subcompressi sepala petala labellum ad 3 mm. longa, sepala in pseudocalcar 3 mm. longum elongata. Ex insula Sumatra importari jussit Dominus Peyer, v. cl. Turicensis.

at Kew and that figured and described by Fitzgerald, the scape of the latter being erect, while that borne by the Kew plant was pendent; the lip of the latter was maroon-crimson, whereas Fitzgerald figures and describes his plant with uniformly lilac-purple flowers. However, Sir Joseph Hooker considered and described them as identical. Several plants of *D. Phalaenopsis* had been distributed from Kew, and these are now known as the Kew variety, to distinguish them from an exceedingly beautiful form of the same species. This was named *D. Phalaenopsis* var. *Schroderianum*, by Reichenbach, in compliment to Baron Schroder, in whose collection it first flowered at Egham, near Windsor. He procured it from Messrs. Veitch & Sons, who had imported several plants of it through the Rev. Mr. Macfarlane, a missionary in North Australia. Mr. Lee, of Leatherhead, also obtained a plant from Veitch, who bought it back again for 50 guineas when Mr. Lee's plants were disposed of by auction. This plant also went into the collection of Baron Schroder, who was till lately the sole possessor of the variety. This is certainly a very beautiful *Dendrobie*. There is a figure of it in Williams' *Orchid Album*, iv., t. 187. It has flowers half as large again as those of the Kew variety, and the colour is much deeper and richer. Until this week, *D. Phalaenopsis* was coveted by all who had seen it as exhibited in flower last spring, but Mr. Sander has lately imported a large quantity of what he declares to be the same as Baron Schroder's variety, and has disposed of nearly a thousand plants by auction.

The plants were in very good condition, many of them having young growing shoots. Some of them had pseudobulbs over 3 feet long, one I measured being 43 inches, and as thick as a man's thumb. Others had thinner and shorter pseudobulbs, and were more like what we had hitherto known as *D. Phalaenopsis*. Altogether, there was very considerable variation in the length, thickness, shape, and colour of the pseudobulbs on the plants sold. I noticed, too, that the old flower-scapes were nearly all erect; certainly not one was what might be called pendent. If these plants are really *D. Phalaenopsis*, then it is a very variable species. Some of the dried scapes exhibited were nearly 3 feet long, and bore scars of twenty flowers. Dried flowers were also on view, and they were nearly 4 inches across. Mr. Sander says that there are varieties with white, rose, and crimson, as well as purple flowers, among those sold. [See our notes on the plants in flower at Messrs. Sander & Co.'s, *Gardeners' Chronicle*, p. 577, November 14 last].

D. Phalaenopsis requires plenty of heat, sunshine, and moisture—far more than suffices for *D. nobile*; in this respect it does not differ from its near relatives, *D. superbiens* and *D. biggibum*. At present I am inclined to believe that *D. Phalaenopsis* as figured and described by Fitzgerald is not the same species as that figured in the *Botanical Magazine* under the same name, and also that Mr. Sander's plants are likely to include both these, besides, probably, other forms.

ODONTOGLOSSUM ASPERSUM AND O. YOUNGII.

Odontoglossum Youngii is a somewhat curious Mexican *Odontoglossum*, which was described and figured a short time ago in the *Orchid Album*. The following interesting note from Reginald Young, Esq., Fringilla, 3, Linnet Lane, Allet Road, Liverpool, shows it is an abnormal state of *O. aspersum*. "In November, 1889," he writes, "a plant purchased as *Odontoglossum aspersum*, and not flowered in this country, produced a spike bearing two blooms, different in many ways from anything I had hitherto seen, and which Mr. Williams considered good enough to figure in his *Orchid Album* under the name of *O. Youngii* (vol. ix., t. 406). This picture I consider faithful as to size, colouring, and formation of lip. The 1890 pseudobulb was quite equal to its predecessor, but threw up no spike; and now, in October, 1891, with a stronger pseudobulb, and a spike bearing four flowers, the blooms open as a really fine form of *O. aspersum*, and they are very distinct from the blooms of 1889. I send you one of the flowers now open (there is no possible chance of a mistake

as to the plant)." The flower sent is a large, well-developed *O. aspersum*, and thus proves that *O. Youngii* is not a variety of that species of *Odontoglossum*, but simply an undeveloped and abnormal state of it. It is very interesting to be able to clear up this point. *R. A. Rolfe, Herbarium, Kew.*

ORCHIDS AT MESSRS. JAMES VEITCH & SONS.

At the Royal Exotic Nursery, King's Road, Chelsea, a more than usually fine display of new and rare Orchids are now in flower. Among the most beautiful of these should be noted *Cattleya Harrisii* ×, a showy thing, and one of the handsomest of its class. It was obtained by intercrossing *Cattleya guttata Leopoldii* and *C. labiata Mendelii*. The flower is 6 inches across, the sepals and petals light purplish-rose with a few purple dots; the showy labellum has the broad flat front-lobe and the tips of the side-lobes of a bright amethyst-crimson, the remainder of the lip being white. Its habit is compact, and it may be said to be better than even the best form of *Lælia elegans Turnerii*, which in some respects it calls to mind. Next comes that marvellous hybrid *Cypripedium* raised by Messrs. Veitch, viz., *C. macrochilum (longifolium ♀ Lindenii ♂)*, illustrated in the *Gardeners' Chronicle*, September 19, p. 343. The variety now in flower differs slightly from that which received a First-class Certificate at the Royal Horticultural Society, being lighter in colour, but the same elongated and curved form is to be seen in the extraordinarily large and beautiful labellum. Among *Dendrobiums*, the beauty rests with the exquisitely lovely forms of *Dendrobium Phalaenopsis* var. *Schroderianum*, whose delicately-tinted and variously-coloured flowers, borne on gracefully arching sprays, leave nothing to be desired. Among the forms in bloom are two whose flowers are white, delicately tinted in the one case with lilac, and in the other with rose, and with some very pretty markings on the lip. Another variety has a rich purplish-crimson base to the labellum, and in each form there is some specially attractive feature. The old *Cœlogyne Gardneriana*, too, here appears in fine condition, one plant having several long drooping racemes of pure white flowers, with light yellow in the centre. *Lissochilus Krebsii* also appears finely bloomed; the elegant little *Dendrobium Fockschii*, a neat and pretty object; and the number of plants of the white *Lælia autumnalis alba*, either in flower or bud, demonstrates the fact that, although rare, it is still obtainable.

Among the *Cypripediums*, over twenty-five rare species and varieties are in bloom, some of them in large specimens. Among them the handsome *C. Niobe* ×, a neat and attractive form, as are all the progeny of *C. Fairrieanum*, is one of the best, although *C. T. B. Haywood* × and *C. orphanum* × are bold and striking flowers, and *Selenipedium Cleola* × one of the whitest of these, and one which will make a great name when it acquires age. Other noteworthy varieties are *C. obscurum* × and the many forms of *C. Leeanum* ×, one of which was the first plant to flower out of Messrs. Veitch's batch of seedlings of it, and it is yet distinct from any other which has appeared, especially in the form of the dorsal sepal, which is much longer than usual, the basal portion, which is coloured green, being narrowed, the expansion of the blade taking place only as the white appears, the labellum thus having an elongated base.

The warm houses have a very fine show of numerous specimens of *Phalaenopsis amabilis* and others of the smaller species; many *Vanda cœrulea*, a quantity of the useful *Calanthes*, of which the best forms of *C. Veitchii* are the chief; various species of *Vandas*, and especially a noble lot of *V. Amesiana*, literally bristling with flower-spikes, which promise a fine show of flowers till we are well through the winter.

In the pretty rockery-house, the forms of *Vanda tricolor* and *V. suavis* are found to thrive marvellously around the sides, by reason of the uniformly cool temperature they enjoy in that situation, and the whole of the sides of the house are being furnished with them, some of the specimens being 4 or 5

feet in height, with leaves down to the pots. In this house, which is always prettily arranged with Orchids in flower, is a form of the old *Cymbidium giganteum* of a marvellously rich colour, the markings on the lip being as near to scarlet as the texture of the flower will allow; also some pans of the best forms of *Sophranitis grandiflora*, the elegant *Epidendrum dichromum*, the fine orange-scarlet *Cochlidia Noezliana*, some good *Lycaste Skinneri alba*, *Lælia autumnalis*, in several varieties, including the white one; some good masses of *Masdevallia tovarensis*, the curious *Polystachya laxiflora*, *Odontoglossum Bictoniense album*, some effective pans of *Pleione maculata*, *Cymbidium Mastersii*, the fragrant old *Maxillaria picta*, covered with flowers; *Maxillaria grandiflora*, and many of the Brazilian *Oncidium*s.

In the *Odontoglossum* houses the bloom is mostly found on the noble old specimens of *O. Pescatorei*, although there are many others in flower in lesser quantity; and the new *Dendrobium houzei* have answered excellently well, the plants having put on very fine growths, and are making up well for bloom.

ORCHIDS AT MESSRS. PITCHER & MANDA'S NURSERIES.

The British branch of the enterprising firm of Messrs. Pitcher & Manda, of New York, viz., the United States Nurseries, Hextable, Swanley, Kent, is devoted mainly to Orchids, and rare and valuable species are more prominent there than large batches of the ordinary kinds. In *Cypripediums*, more especially, the establishment shines, and many of the varieties now in flower are of great merit. Foremost among these must be mentioned the handsome *C. Masereelianum* ×, which, although many regard it as only a form of *C. Leeanum superbum* ×, is certainly the very best of its class. The large flat white dorsal sepal of this handsome plant has rich purplish crimson blotchings on the lower half, and from all points it is good, and superior to any of its class. Near the plants of *Masereel's* variety in flower stand a plant of the handsome *C. Leeanum* × *Burford* variety, and beside it the ordinary *C. Leeanum superbum*, but none so handsome as the first-named. Another special form peculiar to the United States Nurseries, is a form of *C. Arthurianum* ×, with crimson spotting on the white in the upper part of the dorsal sepal. This distinct form, too, seems of very sturdy and floriferous habit. In the same house is the plant of *C. Arnoldianum* × (*concolor* × *superbiens*), which was illustrated in the *Gardeners' Chronicle*, November, 1890, p. 633; and among other fine varieties in bloom in more or less quantity, we noted *C. Ashburtonianum expansum* ×, *Cookson's* var., the best of its class; *C. A. calcapilum* ×, *C. Sallierii Hycanum* ×, *C. tonsum* ×, *C. superbiens*, *C. calurum Rougierii* ×, and others of the *C. Sedenii* × section; *C. marmorophyllum* ×, and *C. m. superbum* ×, several fine forms of *C. Harrisianum* ×, *C. ænanthum superbum*, and a very complete and varied series of varieties of *C. insigne*, including *C. i. punctatum violaceum*, and the no less beautiful *C. i. Philbrickianum*.

The first of the block of six neat houses contains good healthy *Lælias* and *Cattleyas*, among which in bloom were several very richly-coloured autumn-flowering *Cattleya labiata*, one of them having variegated petals; also a large number of *Lælia albidia*, one grand form having large white flowers, with only a line of yellow in the lip, and without the rose tinge usually found in some part of the flower of this species. In this house also a good *Lælia purpurata* and a chastely lovely *Phalaenopsis leucorrhoda* were in bloom.

The next two houses chiefly contain healthy plants in large quantities of all the leading species of *Sarracenia*, and the fourth range is filled with good, freshly-imported *Cattleyas*, of the forms of *labiata*, principally; *Epidendrum vitellianum majus*, *Odontoglossum crispum*, and *O. vexillarium*; and the fifth also has many batches of freshly-imported Orchids, together with a quantity of sturdy *Odontoglossum citrosum*, making up well for flower; *Sophranitis grandiflora*, with many of their bright

scarlet flowers; and a good selection of Masdevallias and other cool-house Orchids.

The sixth range, in two divisions, is loftier than the others of the block, and is used for displaying the plants in flower, which do not suffer by removal from the houses in which they have been grown. In the present instance, the regular occupants of the house furnish the necessary display most liberally. Nearly the whole of the first division is filled with the flowering plants of that variety of the *Lælia autumnalis* section, imported by Messrs.

beautiful introduction of this firm, with white flowers, with just a faint pearly blush over them. The variety is good, but not to be compared with the pure white form, of which there are also some plants.

The fine new Chrysanthemum-house, 100 feet in length, was a gorgeous show, with the favourite flower of the season, among which H. Ballantine, W. A. Manda, and Geo. W. Childs, were conspicuous; and some of the yet unnamed kinds possess great merit, and are destined doubtless to make their way with *celat*. Among other

weekly from many parts of the Continent of Europe, as well as from districts of Great Britain and Ireland, that the Bordeaux Mixture is perfectly trustworthy for these purposes, when it is applied at the right time and in the right way.

A Belgian experimentalist—M. Edmond Laplace, an official in the State Agricultural Service—said in a letter last week, when describing the result of the dressings he had carried out, "They are undoubtedly the most precious application of science

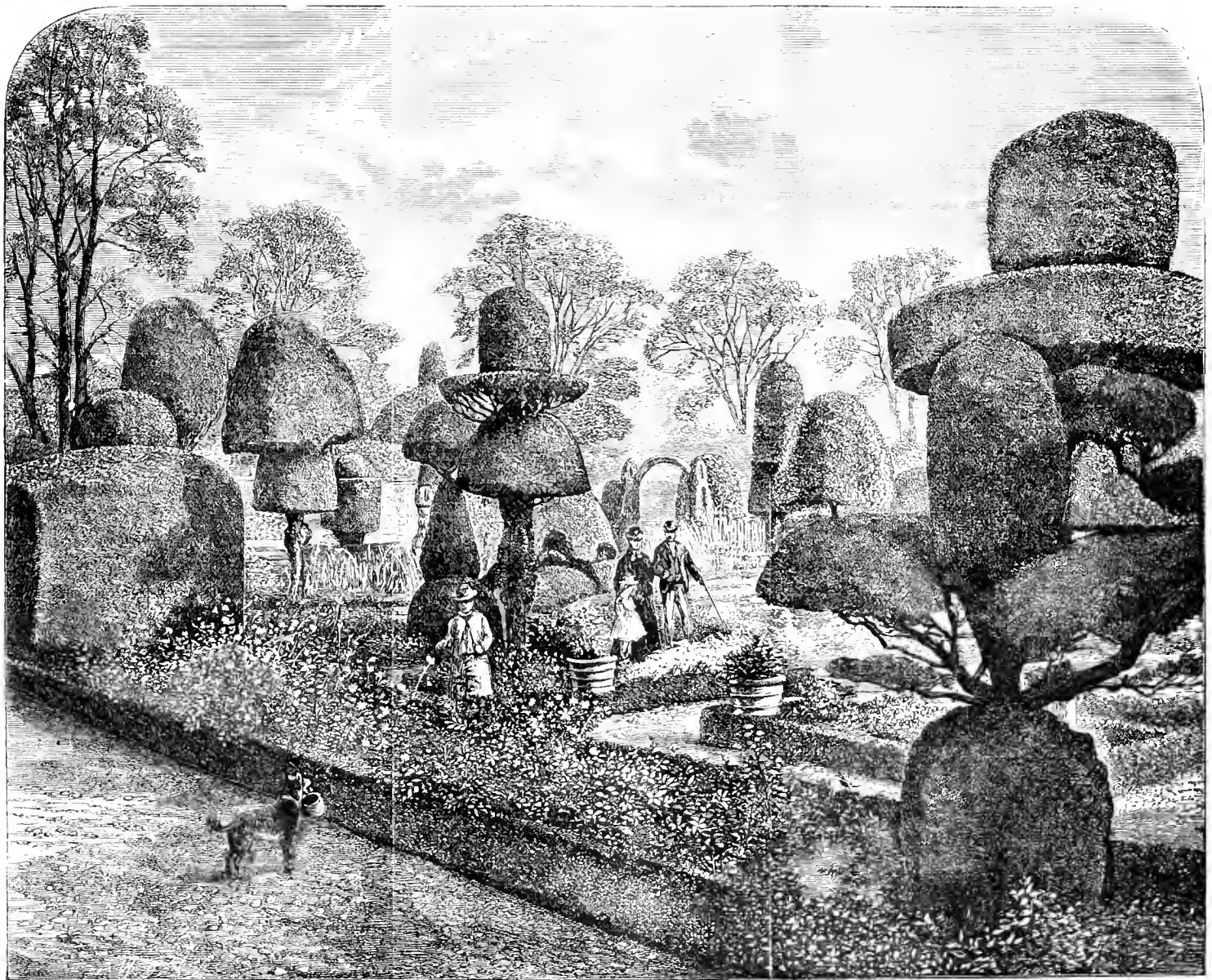


FIG. 97.—VIEW IN THE TOPIARY GARDENS, LEVENS, WESTMORELAND. (SEE P. 671)

Pitcher & Manda, and named *L. Arnoldiana*. Its spikes are more slender than those of the typical *L. autumnalis*, and bear from three to seven flowers each. The flowers are rather smaller than those of the *L. autumnalis* generally seen in cultivation, and vary from white tinted with rose colour to bright rosylilac. It is evidently a most profuse bloomer, and the countless spikes of it arranged with other Orchids, as here seen, make a very fine display. With them are some good forms of *Lycaste Skinneri*, many of *Lælia anceps* in bud, *L. autumnalis*, and a plant of *Lælia autumnalis* Forstermanni, another

plants, the pure white compact-growing perpetual Carnation *Lizzie McGowan* is a grand thing, and seems to possess all the qualities which the most exacting florist could demand.

THE POTATO - DISEASE QUESTION.

It is now fairly established, I think—at least, it is in my mind—that a remedy has been found for this pest, which has been so destructive since 1845. There is conclusive evidence arriving

to agricultural purposes that has been discovered for many years."

As to the value of the Bordeaux Mixture, that may, I think, as I have said, be taken for granted. But from the evidence of some of the experimentalists in our own country, certain practical suggestions have occurred which are worthy of attention at once, that we may be duly prepared for applying the dressings with effect during the Potato-growing season of next year. One of these is, to my mind, of immediate consequence.

I refer to the selection or reservation of suitable

Potatoes for planting next spring. If this is not done, a grower of several kinds may sell the stock he ought to plant, and keep the kind that will produce a crop which will be unsuitable for dressing with Bordeaux Mixture. The quantity, according to soil and other conditions, will henceforth depend on the efficient manner in which the crop will admit of the Mixture being applied to its leaves and stems. There have been many crops this year where it was impossible to satisfactorily dress the whole of the fields. It will be the same in years to come where Potatoes are required to yield a heavy weight, and thereby leave a profit over labour and fixed expenses; 4 or 5 tons to the acre will not do this, therefore it is necessary to highly manure the land that double that quantity, or more, to the acre may be produced.

This is where the danger comes in with some sorts, either because they will not suit some districts, or because they will grow long stems and heavy foliage almost anywhere when highly manured. The aim, henceforth, must be to plant kinds, the habit of which is to produce stout stems with the length of them as short as possible. These points were not of much importance in the past if the crop remained healthy. But when the disease appeared it almost invariably occurred that the crops which promised just previously to be most prolific were the ones that were nearly or totally destroyed.

The object in future, therefore, must not be to grow excessively heavy crops and thereby court or invite the disease, but to grow a fairly heavy crop in which the disease may be prevented or speedily cured on making its appearance. Look at some of the facts we have already before us. The losses from diseased tubers on undressed plants have varied according to their kind, and the conditions of the soil on which they grew, from 30 or 40 to 80 per cent. The heavier losses, I am informed, were in fields, or on patches where the stems were excessive in length, and lay across the furrows. In these cases, too, where much trouble was taken to dress them as well as possible by the operator with a hand-machine, picking his way along, there were mostly many diseased tubers. But this should not be, if every plant gets a thorough dressing. If, say, the disease can be prevented in fifteen plants out of twenty, it is quite clear that the other five might have been saved, had they received the same efficient dressing as did their fifteen neighbours.

Quality, of course, should be the chief consideration in Potato growing; but equally important now is the habit of growth of their stems. The future object must be to grow sorts which will admit of machines passing through them that will cover four or five rows at a time as long, or as late, as there is any danger of an attack or renewal of disease. In Great Britain and Ireland last year, there were upwards of 1,000,000 acres of Potatoes. To dress this vast area over twice or thrice in the limited time when it would be successful, would require all the soldiers in the kingdom, in addition to a large number of the farm labourers, who at the time will be urgently required for other work.

This choice or reserve of suitable stocks for soils and districts can only be made by Potato growers who have had experience in each district. For example, Scotch-grown sets may be planted for a main crop the first year on the Wolds of Lincolnshire and Yorkshire, and other high ground, without fear of their growing stems so long and leaves so heavy as to smother themselves. But in Kent, Surrey, and other southern counties, the same sets would produce excessive tops and no marketable tubers, technically called "ware." As I have intimated, the quality and weight of crops, where Potatoes may be grown in wide areas or large fields, will depend on the facility and completeness with which they can be dressed by some form of machinery that will go over $1\frac{1}{2}$ or 2 acres an hour. But excessively long stems cannot possibly be divided and raised so that they will not be greatly injured in the attempt, and in the way they will be crushed by the wheels of the machine, by the feet of the animal drawing it, and of the man and boy in attendance. From this it would seem that

instead of planting sets of any stocks that were grown in a more northern or colder climate, it may be advisable to take sets from southern to northern districts. Anyway, the greatest possible care must be exercised for the purpose of producing such stems and foliage as will admit of the disease being completely prevented or cured by a uniform application of the Bordeaux Mixture at the right times. Thus, it will be better to aim at growing eight tons an acre, with the certainty of being able to keep them free from disease, than to attempt to grow ten or twelve tons an acre, with the risk of a large proportion of them being diseased, from it being impossible to thoroughly apply the great modern discovery in question.

Taking these views, I think Potato growers in a large way will see it is advisable for them to fall back on their experience of different kinds, and reserve for planting next year such varieties as produce stout short stems. *W. W. G.*

CONTINENTAL NOVELTY.

CALAMPÉLIS SCABRA VAR. ROSEUS (ECCREMOCARPUS).

The orange-red flowered variety of this pretty climber is very suitable for covering low fences and small arbours, as well as for forming living garlands. During the past year I have seen in Messrs. C. Platz & Son's nurseries at Erfurt, a plant whose flowers had changed from the usual colour to a beautiful salmon-pink. This variety has proved to be thoroughly constant in colour, and the above-named firm intend to offer it to the trade next season. The culture of Calampélis is easy; the plant growing almost in any soil if the position be a sunny one, flowering abundantly the whole summer and late into the autumn. *Johs. Mahling, Erfurt, Germany.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

BEAUTIFYING CARRIAGE DRIVES.—There are many nooks and open spaces in close proximity to carriage-drives which, by planting thereon alternate clumps of good varieties of Rhododendrons, evergreen and flowering trees and shrubs, would be considerably improved. Where there is a good expanse of turf on either side, such beds or belts should be made of a good size, irregular, and at fairly wide distances apart. Among the flowering shrubs, the Weigelas should be included, also plant due quantities of Scarlet Oak, Japanese Maples (see p. 615), and other subjects, which are noted for the beauty of their autumnal tints. The ground should be prepared in the manner indicated in the Calendar for November 14, p. 582, and the trees and shrubs put pretty closely together for immediate effect, subsequently thinning out and transplanting them elsewhere before they get much crowded.

BRIARS FOR BUDDING ROSES.—The present is a good time to collect Briars as stocks on which to bud Roses next July. Those with clean stems, about three-quarters of an inch in diameter, and from 3 to 4 feet high, should be selected. Having trimmed the roots of each Briar, plant them in rows 4 feet apart, and at 6 inches apart in the row; tread the soil firmly about the roots in planting, and then lay on a surface-dressing of short-dung or leaf-mould as a protection from frost. Cuttings of the Manetti and Bourault stocks should also be prepared, and planted in rows from 2 to 3 feet apart, and at 6 inches in the row, for working up a stock of dwarf Roses.

ROSE CUTTINGS.—Cuttings taken off with a heel may now, if not already done, be put in, in rows about 9 inches apart, and at 2 inches in the row on a north or east border, where the soil is light and sandy. The cuttings, about 9 inches long, may be inserted 5 or 6 inches deep, pressing the soil firmly. Cuttings may also be inserted in pots or boxes filled with sandy soil, watered, and placed in a cold pit or frame, putting them in heat in the spring, and potting off singly into 3-inch pots as soon as they are well-rooted.

PRUNING DECIDUOUS TREES AND SHRUBS.—Any deciduous trees and shrubs that require their shoots thinned out and shortened back, should be seen to forthwith.

CLOTHING TRUNKS OF OLD TREES.—There are to be found in most places, half-dead, gnarled trees, whose trunks and branches might be rendered

attractive by planting the undermentioned climbers at their base, and training their rambling shoots loosely over them, namely:—*Clematis Jackmanni*, *C. flammula*, *C. vitalba*, *Anemopsis hederacea* (Virginia Creeper), *A. Veitchii*, *Lonicera brachypoda*, and *L. sempervirens* (Evergreen Honeysuckles), *Wistaria sinensis*, *Passiflora corulea* (in southern counties), *Jasminum nudiflorum* (yellow), *J. officinale* (white), *J. revolutum* (yellow), *Vitis heterophylla*, and such Roses as *Banksiaeflora*, *Adelaide d'Oléans*, *Donna Maria*, *Félicité-Perpétue*, *Jules Margottin*, *General Jacqueminot*, *Achille Gouud*, and *Celine Forestier*. *H. W. Ward, Longford Castle, Salisbury.*

THE ORCHID HOUSES.

THE CATTLEYA HOUSE.—The earliest flowering plants of *C. Trianae* are pushing up their flowers in the sheaths, and care must be taken not to water over the plants, or the flowers will be spoiled by rotting inside the sheaths, or they will open imperfectly. Too much water at the root, or sharp variations of temperature, bring about the same evil result. It may happen that the sudden changes of the weather may deceive the man on duty, and the house get too warm or too cold; in these cases the man is little to blame.

What a change has come over Cattleya-houses at this season by the advent of the autumn-flowering species! A year or two ago, *C. labiata* was rarely seen in flower, and when it was, it was something to be noted; but now they seem to be coming into cultivation plentifully, and are more to be valued than *C. Mossia*, seeing that they bloom at a time when other Orchids are scarce. *Oncidium sarcodes* is a beautiful plant when in flower, and a comparatively good grower. Our plants are sending up their flower-spikes, and I would warn amateurs against leaving the spikes in their entirety. *O. sarcodes* usually has under cultivation a spike too large for the strength of the plant; if the whole of it remain, it will quickly debilitate the plant. The same thing occurs with some other *Oncids*, especially *O. crispum*, *Marshallianum*, *curtum*, and *varicosum*, almost the pick of the genus, and far better is it to have smaller flower-spikes and keep the plants strong and healthy, than allow them to get weak and dwindle away.

Oncidium cheiroporum, plants of which are now in flower, always are an attraction for those who like fragrant flowers. It was a favourite with the late Mr. Spyers when he was at Burford; and I remember with what pride he showed me the first really well-grown plant. It does best during the winter in the Cattleya-house, as the bulbs are liable to decay in a cool-house; but during the season of growth the plant is at home in the *Odontoglossum*-house, if stood close to the glass where the ventilation is good. *Oncidium macrothum* is on the whole the best *Oncidium* grown, succeeding in the coolest part of the cool Orchid-house, and possessing charming flowers. I have seen this plant growing grandly quite close to the door of an Orchid-house which was thrown wide open when the temperature outside was at freezing-point. All the *Oncids* grow well in a compost consisting of fibrous peat and sphagnum moss. The list of temperatures given in my last Calendar will still hold good. *A. G. Catt, Parkfield, Hallow.*

THE KITCHEN GARDEN.

CAULIFLOWERS IN FRAMES AND HANDLIGHTS should be exposed to the weather day and night, so long as there is no actual frost, the aim of the gardener being the securing sturdy plants fit to stand winter hardships. Sometimes it is advisable to pot-up plants from the beds of the latest-sown Cauliflowers, using 3-inch pots, and putting these into a cold frame without much ventilation till rooted, but afterwards treating them like the others. In early spring, before they become pot-bound, these potted plants may be repotted in a mixture of stiff loam and well-rotted manure in equal proportions, the potting being done firmly. Treated in this way, strong subjects for early planting may be obtained that may be trusted to bring good heads. Where only a few are required, this is a very good method of securing them for spring planting.

CABBAGES have made rapid growth, and any that may still remain in the seed-beds should be pricked out, the removal giving them a beneficial check, which tends to sturdiness. All land under Cabbage should be hoed in dry weather, and the plants gradually earthed-up, all withered leaves being removed, and powdered quick-lime and soot strewed over them if slugs are troublesome.

SALADS.—Lettuces and Endives in frames, in a fit state for use, will require much attention, and air should be afforded them on all mild days and nights, but exclude the rain, and keep the soil moderately dry. Cos Lettuce should be tied up one week or more before it is required for use; and Endive, to be thoroughly blanched, tender, and free from bitterness, should be tied up for a fortnight, but before it is covered or tied, the leaves should have got as dry as possible. Any frames which have been cleared may be refilled with plants from out-of-doors, or the thinnings from store-frames.

MUSTARD AND CRESS is best sown at this season in shallow boxes of light soil. Make the surface of the soil firm before sowing the seed, and keep it moist and shaded till germination takes place.

RADISHES.—Late-sown Radishes outside, and in cold frames, should still be available for salads; and for succession sow seed in a gentle hot-bed, covered with 6 to 8 inches in depth of light soil, and afford but little light and air till the first leaf appears.

CARROTS.—A hot-bed should be made up for an early supply of these, and it may consist of stable litter and tree leaves, which should have been prepared. [These hot-beds are best made in holes dug out in the ground, and not stood on the level of the ground to lose half their heat from thus exposing them. The hole should be large enough to admit of a lining being given when the heat declines. Meanwhile, any kind of litter may be packed round the bed to conserve its warmth. Eo.] When the 3-inch layer of sandy soil placed on the bed has become warm, the seeds may be sown in shallow drills 6 to 8 inches apart, and 2 or 3 inches apart in patches of 3 or 4 seeds, or broad-cast sowing may be adopted, Radish seeds being thinly sown after the Carrot drills, &c., are covered. The soil being moderately moist, little or no water will be required at the time of sowing. Cover the glass at night, and maintain a temperature at the top of 60°, and in the bed itself of 75° to 80°. *C. J. Waite, Glenhurst, Esher.*

FRUITS UNDER GLASS.

EARLY PEACH-HOUSES.—In a previous Calendar I advised the preparation of this house, but its starting will depend on the time when ripe fruit is required. If that be early in May, the trees in this house should now be moving gently with swelling buds, and a slight increase in warmth may safely be afforded on dull days, keeping it at 55°, and 10° more by sunheat; but at night it should not exceed 45° to 50°, and this is easily maintained by allowing a little extra warmth in the pipes during the day, with a small air inlet at the top of the house, and closing early and checking the heat by shutting the valves in the pipes; the warmth of the water will keep the house, by these means, sufficiently warm in mild weather. A dry heat in the Peach-houses is undesirable, and I, therefore, cannot advise the opening the ventilators for the sake of lowering the temperature of the house, but would rather keep them closed, and use less artificial heat. Employ the syringe freely, and do not omit to damp the floors and the stems in bright weather, even when the trees are in bloom. Always let the wood get dry by nightfall, and do not damp-down in the evening when the trees are in bloom; but during the day, when plenty of air can be given, there is no need to fear a too-humid atmosphere. The roots should be in a growing condition, indeed it is the best plan, when starting a Peach-house, to give the borders a thorough watering with tepid water, and once again before the flowers are fully expanded over all parts of the trees; this is the more necessary if doubt exists as to their state, or they are shallow. Shallow borders, or those made with very porous loams, should be well supplied with water at about 85°, as often as they appear to need it. If the interior border is covered with a layer of leaves, or leaves and stable dung, their warmth will excite growth, and at the same time avert the quick drying of the soil. When the flowers have opened, assist their fertilisation by brushing the pollen about with a feather brush, camel-hair pencil, or hare's tail—a very essential operation at this season.

A succession Peach-house should be started during the month at a temperature of 50° by day and 43° to 45° by night; it will depend on the kind of weather experienced whether fire heat be necessary or not at the start. The various directions given for the earliest house are equally proper for the next one started. Late Peaches will now be in good condition for pruning and cleaning, and to do this properly, the

trees should be unfastened from the trellis. If they are infested with scale in any degree, the old wood must be washed with warm water and soft soap, to be followed with a dressing of Gishurst's Compound Soap. Every part of the interior of the house should also be thoroughly cleaned, the Peach trees being bundled up, and fastened to stakes driven into the borders meanwhile. Limewash the walls before the trees are replaced on the trellis. Lay in the shoots thinly, or small fruit will result. Afford the trees all the light and air possible during mild weather, do not let the roots lack moisture, and generally proceed according to previous instructions. *G. Wythes, Syon House, Brentford.*

THE HARDY FRUIT GARDEN.

HORIZONTALLY - TRAINED AND CORDON PEARS.—These trees should be relieved each year of some of their long fruit-spurs, cutting these back to within half an inch of the base, from which point other fruit-buds will eventually develop. Prune to two buds all overright shoots, and shorten back the leaders to within 15 inches of the previous year's wood. Trees which are intended for training as espaliera or wall trees should have their leading stem shortened back to a point where the next pair of branches should spring, and by following this method of pruning the stem-leader each year the tree will be well furnished with fruitful branches. Where the saw is used in heavy pruning, the wounds made with it should have their edges pared smooth to facilitate the healing process. Of varieties to plant, Marie Louise, Doyenné du Comice, Pitmaston Duchess, Burré Superfin, Conseiller de la Cour, William's Bon Chrétien, Madame Treyve, Louise Bonne of Jersey, Fondante d'Automne, Winter Nelis, Josephine de Malines, Triomphe de Vienne, and Glou Morceau are all of first-rate quality, while Catillac is still hard to beat as a stewing Pear. When pruning, save good shoots for grafting purposes, but leaving them on the trees for the present. Take them in January and lay them in under a north wall till grafting time arrives.

THE WORK IN THE ORCHARD.—Now that the leaves are down, and the weather mild, the necessary pruning of the trees should be performed, and the soil over the roots top-dressed with manure and soil. Never let the orchard trees become thickets of barren shoots and branches, but strive to keep the crowns thin, and the interior accessible to direct sunlight, for with sunlight and the play of the air through the branches, the better will be the fruits. Do not, however, be too severe with the pruning if the trees have been previously much neglected, but afford them at first only a moderate amount of thinning; and when the trees, in a season or two, have been put in good order, a little timely pruning done yearly will keep them right.

Top-dressing should never be neglected if the trees have become barren, and in the case of large orchards under turf, there is no better way of doing this than by pasturing sheep or horned stock in them. Sewage and farmyard liquid, if applied in winter, will be found beneficial to orchard trees, on turf or under crop. Cow-manure and loam form a good top-dressing. Trees on Paradise stock should have a layer of loam and manure put over the roots. Do not use a spade in digging amongst these trees.

For the destruction of lichens and moss, thoroughly dust the trees with quicklime and soot, the main branches being first scraped with a bit of hoop-iron, and afterwards limewashed. Petroleum and soapy-water, kept well-stirred while using, will be found an excellent remedy for American blight, &c., and should be thrown on the trees with the syringe in mild weather. The proper proportion is 1 gill of petroleum to 1 gallon of water. Protect the stems of young trees against the ravages of rabbits by means of wire-netting, or a dressing of petroleum, soot, and clay, with enough water added to make it workable; two dressings during the winter, in most cases, will be sufficient. See that all the stakes are made good, and old pads and ties renewed. The current season's shoots on young trees may be pruned to 12 or 18 inches in length, always reserving the best placed of these to form the base of the future crown. *H. Markham, Mereworth Castle, Maidstone.*

PLANTS AND THEIR CULTURE.

HARD-WOODED PLANTS.—Boronias, Erioste-mons, Epacris, Correas, &c., will now require careful watering at the roots; and rather err on the dry side than afford them too much water, but avoid allowing them to become too dry. Always use soft or rain-

water, which is much the better for this class of plants. Give air on all favourable occasions, and let the night temperature be kept from 45° to 50°.

CHRYSANTHEMUMS.—Chrysanthemums will now be past their best, and steps should be taken to remove all unsightly plants. Plants which have been grown for specimen blooms are sending out a quantity of side-shoots, and these will be found most useful at a later date for furnishing cut flowers, if the plants are placed in a vinery or late Peach-house.

BOUVARDIAS.—Introduce the earliest plants of Bouvardia. These are invaluable at this season both for cutting and decorative purposes, and if grown in batches, they will afford a succession of blooms all through the winter.

PRIMULAS.—The double and single varieties of Primulas will also be doing good service now, and manure-water should be given the earliest-sown plants, which will strengthen the bloom.

HYBRID RHODODENDRONS.—These will now be found very useful, in providing a quantity of their bloom. Keep the plants in a warm greenhouse temperature, and any pruning or cutting-back which is required should be left over till the plants have done blooming.

SOLANUM CAPSICASTRUM.—Plants of these which have been grown on in pots during the summer will now be found very useful. Before bringing the plants in, see that they are thoroughly clear of green-fly, &c.

DAPHNE INDICA ALBA.—This is a very useful subject at this season of the year, and is a plant easily grown, if care is taken in not over-potting or giving it too much water at the roots. When making its growth give it a genial temperature, and any unduly strong growths should be pinched back, so as to form dwarf bushy plants. *R. Milner, Penrice Castle, Swansea.*

THE APIARY.

PACKING SECTIONS, ETC.—Unglazed sections that are intended to be despatched in quantity by rail, will require careful management in the matter of packing, or they are sure to get much damaged on transit, and cause dissatisfaction to the purchaser. It is important not to pack too many in one box, as a package containing a gross of sections is more likely to be subjected to rougher usage than one containing, say, half that number, or less, which can be more easily lifted. Hay is about the best and cleanest material to use for the packing, but the sections should first of all be tied up in brown paper in half-dozens, and they will then be in good order when taken out through not having been in contact with the hay. A handle on each side of the box should be provided to lift it by, and the nature of the contents plainly marked on the address label, or on the outside of the package, such as the words, "Honey in the comb. This side up, with care." Sections in half-dozens or dozens travel very well in boxes lined throughout with corrugated paper, only they must be packed so that they cannot move about. Messrs. Neighbour sell a wooden case which may be had in the fat, and folds up to take a single section. This answers well for sending through the post, and is inexpensive. Nothing is better for sending extracted honey away in bulk than the tins sold for the purpose by appliance dealers. They can be procured to hold almost any required weight, and are cheap. If bottles are required, they should be wrapped singly in paper, and then packed in hay or straw, taking care to have a thick layer at top and bottom; or they will travel well in the corrugated paper before mentioned.

MOVING HIVES.—Any changes that are desired to be made in the arrangement of the apiary may soon be taken in hand. Bees that have been confined to the hives by cold weather for two or three weeks can be moved safely, without any loss, but they should not be jarred or shaken in any way to cause disturbance. If they are to be moved any considerable distance, a sort of hand-barrow should be improvised so that two persons can carry them comfortably. In choosing a new location for an apiary, select a spot that is sheltered from north and easterly winds, if possible, and on low ground. Colonies placed under trees are warmer in winter than if out in the open, and an advantage is gained in summer from the shade, which counteracts swarming. A clear flight, however, must be provided for the bees in front of the hives, and plenty of head-room is required for the bee-keeper. *Exprt.*

EDITORIAL NOTICES.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages of gardens or of remarkable plants, flowers, trees &c., are solicited.

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

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, DEC. 8. { Royal Horticultural Society: Lecture on Hellebores; and all Committees meet.

WEDNESDAY, DEC. 9. { National Rose Society: Annual Meeting and Dinner.

SHOW.

WEDNESDAY, DEC. 9. { National Chrysanthemum Society (two days).

SALES.

MONDAY, DEC. 7. { Dutch Bulbs at Protheroe & Morris' Rooms
Dutch Bulbs at Stevens' Rooms.

TUESDAY, DEC. 8. { 12,000 *Lilium auratum* and other Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 9. { Sale of Plants and Bulbs, &c., at Protheroe & Morris' Rooms.
Fruit trees at Stevens' Rooms.

THURSDAY, DEC. 10. { Important sale of Nursery Stock at Le's Nursery, Feltham, by Protheroe & Morris (two days).
Sale of Dutch Bulbs at Protheroe & Morris' Rooms.
Roses at Stevens' Rooms.

FRIDAY, DEC. 11. { Established and Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, DEC. 12. { Dutch Bulbs, at Protheroe & Morris' Rooms.
Liliums, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°.

THE antagonism between the Garden Craft architect and the landscape gardener seems as if it would never cease. The designer of the mansion wants his way, the landscape gardener is no less tenacious in the advocacy of his rights. There result endless discussions as to the functions of art in the garden—whether there should be any art at all in the garden, or, seeing that in some shape or another it is inevitable, it should not be that art whose primary function it is to conceal itself. These and other cognate questions are raised in a recently-published volume,* the work of a distinguished architect who has lately passed away. Indeed the book is a posthumous publication, and in places shows the want of that revision to which it would probably have been subjected had the author lived. Thus within twenty pages he repeats the following passage from Addison:—“I think there are as many kinds of gardening as of poetry. Your makers of parterres and flower-gardens are epigrammatists and sonneteers in this art; contrivers of bowers and grottoes, treillages and cascades, are romance writers.” Thus in the following passage, wherein the author is alluding to terrace gardens he inveighs against a dogmatism from which he is himself not altogether free:—“If,” says Mr. SEDDING, “one is to promulgate opinions that shall run counter to the wisdom of the whole civilised world, it is, of course, well that they should be pronounced with the air of a Moses freshly come down from the Mount, with the tables of the law in his hands. . . . There is no code of taste resting on any solid foundation which proves that garden

or park should have any extensive stonework or geometrical arrangement. . . . Let us use as few oilcloth or carpet patterns and as little stonework as possible in our gardens.” Mr. SEDDING does not approve of that passage, and many people will be of the same opinion; but while he thus quizzes the dogmatic assertions of other people, he is by no means free from arrogant self-assertiveness himself. Thus he speaks of the present race of landscape gardeners, including, be it remembered, such an artist as MARNOCK: “Their intentions are admirable beyond telling, but their work exhibits in the grossest forms the very vices they condemn in the contrary school, for the expression of their ideas is self-conscious, strained and pointless.” And, again: “It is indeed wonderful to what heights the British fancy can rise when put to the push, if only it have a congenial field. So here we have flower-beds shaped as crescents and kidneys, beds like flying bats or bubbling tadpoles, commingled butterflies and leeches, stars and sausages, hearts and commas, monograms and maggots, a motley assortment to be sure—but the modern mind is motley, and the pretty flower-beds smile a sickly smile out of their comic beds as though Paradise itself could provide them with no fairer lodgings; and yet, if I dare speak my mind, ‘sike fancies weren foolerie,’ and it were hard to find a good word to say for them from any point of view whatever. Their wobbly shapes are not elegant; they have not the sanction of precedent, even of epochs the most barbarous; and, though they make pretence of being a species of Art, their mock formality has not that geometric precision which shall bind them to the formal lines of the house, or to the general bearings of the site. Not only do they contribute nothing to the artistic effect of the general design, but they even mar the appearance of the grass that accommodates them. Design they have, but not design of that quality which alone justifies its intrusion. No wonder ‘Nature abhors lines,’ if this base, a spurious imitation of the old formality that CHARLES LAMB gloats over, is all that the landscape-garden can offer in the way of idealisation.”

We have cited this passage, not only on account of its manifest truth from the author's standpoint, but also to show that he is every bit as dogmatic as the landscape gardener at whom he girds.

Beauty of fitness is, after all, the highest form of beauty, so that whilst the architect is fully justified in creating terraces, and the gardener in decorating them in a style that harmonises with and is the due complement with the style of the adjacent mansion, either of them would be deplorably in error if they designed a similar garden in the midst of the park. Something, too, must be allowed for individual taste. Mr. SEDDING's taste was clearly in the direction of artificiality in gardening. He expresses his admiration for that curious survival of Levens, Westmoreland, of which we give an illustration, fig. 97, p. 671.

It would be vandalism, indeed, to destroy so fine an example of a style no longer fashionable; but it would be grotesque folly to copy it in any modern garden. On one point we cannot agree in any degree with Mr. SEDDING, and that is in his appreciation of shrubs clipped and tortured into the semblance of birds or beasts, or any of the quaint conceits of the old practitioners of the topiary art; we cannot conceive that this practice is defensible on any score whatever—as well make a cannon of glass or a statue in soap as carve out of foliage forms utterly un-

suitable for the purpose. Contrast is allowable, and often agreeable in a garden, but deliberate incongruity is mere childishness.

Another point in which Mr. SEDDING, like most of his fellow architects, is deficient, is in his knowledge of and sympathy for plants. Architects too often look on plants as so many bricks, or, at best, as so many pieces of decoration, to be considered only from an ornamental point of view. Landscape gardeners themselves are too often imperfectly acquainted with the resources at their command, but, at least, they have far more sympathy with plants, creations instinct with life, responsive to every varying phase of soil or climate, of sun or shadow, possessed of a history full of interest for those who have eyes to see, full of promise for those whose imagination enables them to picture forth the future. But is there no common ground where the garden architects and the landscape gardeners may meet in unison? There is truth in the contentions of both parties. Is it not possible to let each have his way under appropriate circumstances, and where it is possible to secure a compromise in which the best features of either shall be combined for the common good? Undoubtedly it is; and the author whose book has suggested these remarks recognised this, and in his last chapter drops his invective against the modern landscape gardener, and allows us to put down his book with a genial glow of satisfaction, instead of a feeling of antagonism such as some other chapters are calculated to induce. “Here one may well leave the matter without further labouring, content to have proved by the example of a four square sane genius [WORDSWORTH], that those instincts of ours which seem to pull contrary ways—Art-wards or Nature-wards—and to drive our lop-sided selves to the falsehood of extremes are, after all, not incompatible. The field, the waste, the moor, the mountain, the trim garden with its parterres and terraces, are one Nature. These things breathe one breath, they sing one music, they share one heart between them; the difference between the dressed and the undressed is only superficial. The art of gardening is not intended to supersede Nature, but only to assist Nature in moving these affections of those who have the deepest perceptions of the beauties of Nature, who have the most valuable feelings . . . the most ennobling with Nature and human life.” And so we take leave of a book, the literary style of which renders it as pleasant as a flower garden of an amateur, whilst the substance is, in its way, as full of interest as the garden of the connoisseur. We need say nothing further to recommend it to the notice of our readers, who will find much amply worth their attention, but to which the limits of our space preclude more than the bare mention.

OUR ALMANAC.—Secretaries of Societies and others are earnestly requested to forward shortly, the dates of show fixtures, and meetings of horticultural societies of any kind for 1892, for insertion in the Almanac to be published in our issue for January 2.

ROYAL HORTICULTURAL SOCIETY.—On Tuesday, December 8, the above Society will hold, in the Drill Hall, James Street, Westminster, a show of Christmas Roses and other flowers, also fruits and vegetables. A lecture on Hellebores will be given at 3 P.M., by the Rev. Canon ELLACOMBE.

LINNEAN SOCIETY.—At a meeting held on November 19, Professor STEWART, President, in the chair, Mr. W. L. BROWN was admitted a fellow of the society. Mr. S. JENNINGS exhibited a collection of

* *Garden Craft, Old and New*, by the late JOHN D. SEDDING. Sixteen illustrations. RIGBY PAUL, TRENCH, TRUBNER & Co.

wild flowers made by him during a recent tour through the Rocky Mountains, California, and Mexico. Mr. E. F. COOPER exhibited specimens of a new variety of *Potamogeton* from Loughborough, lately described and figured by Mr. ALFRED FRYER (*Journ. Bot.*, Oct., 1891). Mr. A. W. BENNETT exhibited and made remarks upon some specimens of *Hydrodictyon utriculatum*, Roth. (*H. reticulatum*, De Toni), and some drawings of anomalous *Cypridium* and *Disa*. Mr. W. CARRUTHERS, F.R.S., gave a graphic account of a recent visit to Sweden in search of original portraits of LINNÆUS, and detailed the result of his enquiries. His remarks were illus-

trated by an exhibition of engravings and photographs. A paper was then read by Mr. THOMAS HICK "On a new Fossil plant from the lower Coal Measures." An interesting discussion followed, in which Mr. CARRUTHERS, Mr. G. MURRAY, Professor F. O. BOWER, Professor MARSHALL WARD, and others took part.

GARDENERS' ORPHAN FUND.—The committee met at the Horticultural Club, Hotel Windsor, on the 27th ult., WILLIAM MARSHALL, Esq., in the chair.

of the Fund, the committee came to the conclusion that they would be justified in placing at the next election an eleven additional children upon the Fund, bringing the number up to fifty, and the Secretary was instructed to issue the necessary notices to that effect. Already twelve applications on behalf of orphan children have been sent in to the committee. It was resolved that applications be sent in by December 15, and that the next annual meeting and election should take place on Tuesday, February 3, at the Cannon Street Hotel. The date of the annual dinner, at which Alderman Sir JAMES WHITEHEAD, Bart., is to preside, will be fixed later on.

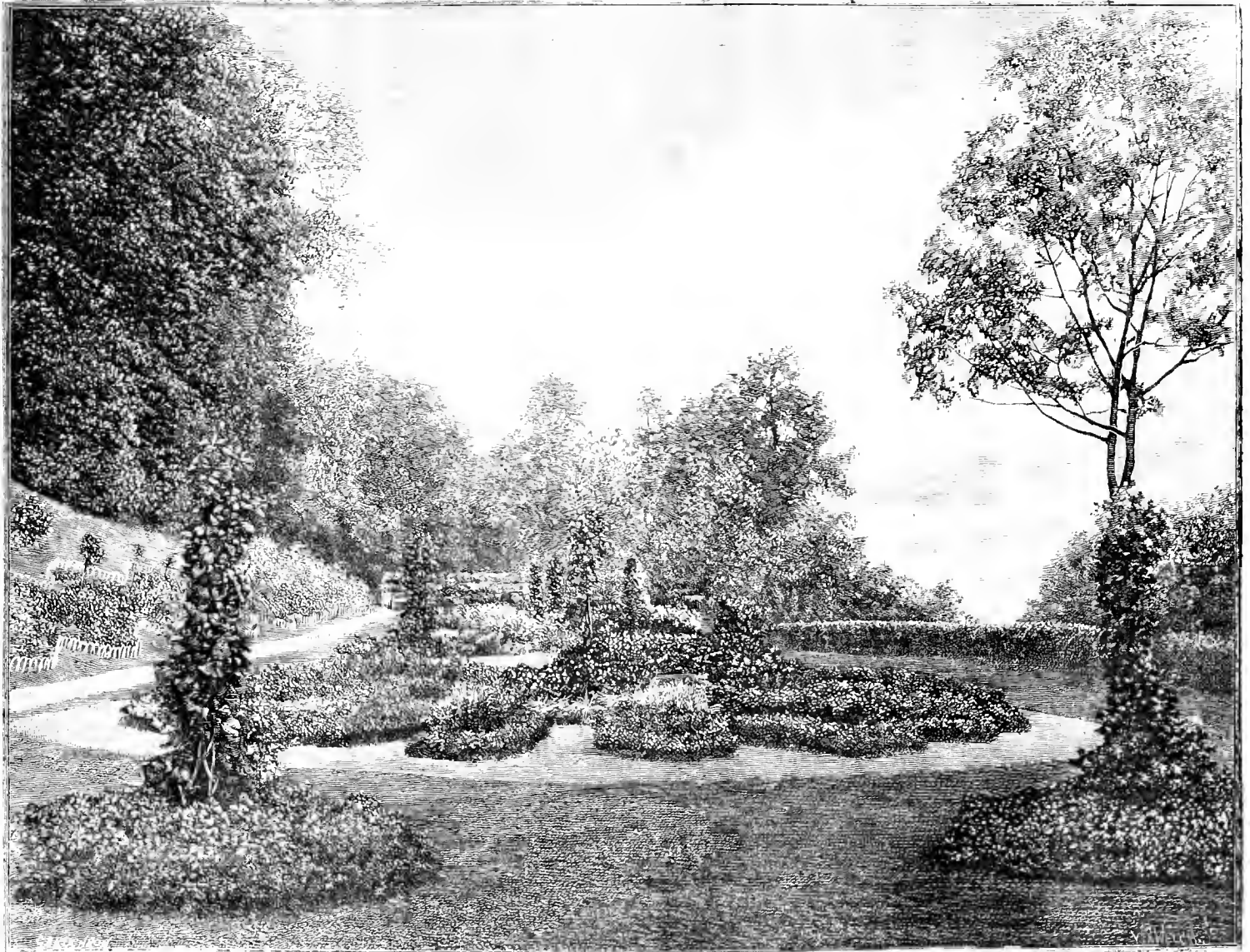


FIG. 98.—VIEW IN MRS. GENERAL WILMOT'S GARDEN, ROSE BANK, MALVERN. (SEE P. 677.)

The Secretary, Mr. A. F. BARRON, read a list of special awards, as follows:—Mr. Matthew Todd, sale of fruit from his decorated dessert-table at the recent Edinburgh Chrysanthemum show, £2 7s.; Mr. W. Bates, Twickenham, collecting box at Twickenham Chrysanthemum Show, £1 5s.; Mr. William Bryant, Rugby, sale of flowers at Rugby Chrysanthemum Show, £6 4s.; Mr. W. H. Divers, the gardener, Ketton Hall, box at Chrysanthemum Show in the gardens, £1 12s 4d; Mr. F. Miller, North-down, Margate, collecting-box, 5s. 10d; and Woolton Gardeners' Society, £10 2s, per Mr. J. Rothwell, secretary, arising from the sale of flowers at the show, &c. On consideration of the financial position

NATIONAL ROSE SOCIETY.—The annual general meeting of the National Rose Society will be held, by kind permission of the Horticultural Club, at their Rooms, Hotel Windsor, Victoria Street, Westminster, on Wednesday, December 9, at 3 P.M., to receive the report of the general committee; to

FRUIT AT WINTER AGRICULTURAL SHOWS.—The Monmouthshire County Council, with the view of promoting the better cultivation of hardy fruits, especially Apples, in the county of Monmouth, obtained permission from Lord TREDEGAR to arrange for an exhibit of Apples and Pears at his lordship's very popular and important agricultural show held at Newport last week, when Messrs. BUNYARD & Co., of Maidstone put up a very fine and interesting collection of Apples, and Mr. JOHN WATKINS, Pomona Farm, Withington, Hereford, staged a large and varied collection of both Apples and Pears; this latter collection contained a lot of really magnificent fruit, and attracted a good deal of

attention. Mr. W. J. GRANT, Principal of the Department of Agriculture and Horticulture, and Organising Secretary for the County Council, prepared a pamphlet containing, "Notes on Fruits for Monmouthshire," on the same lines as a pamphlet recently issued by the Royal Horticultural Society for the occasion, and which was distributed amongst agriculturists and others who visited the show, and proved to be an excellent means of diffusing information in a reliable and convenient form. We consider that much good might be accomplished by the addition of classes for English-grown Apples at such important agricultural gatherings as Lord TREDEGAR'S. At Birmingham, and the Smithfield Club at Birmingham, certainly, there were classes for Apples for the first time; but the terms of competition are prohibitive, and the provisions generally inadequate for such an important exhibition, which is visited by thousands of agriculturists, who hail from the length and breadth of the kingdom; while the fruit exhibition compares most unfavourably with that shown, not for competition, by Mr. JOHN WATKINS and the English Fruit and Rose Company, both of whom had stands of Apples, which were examined with much interest and advantage by many owners and occupiers of land, who never think of visiting a horticultural show, and who consequently have, comparatively speaking, little opportunity of seeing what can be done in the way of producing Apples, of the highest possible excellence, in our own country.

AMERICAN FLORA AT THE WORLD'S FAIR.—The native flora of each state and territory of America will be shown at the Exposition, Chicago, under the direction of Mr. J. THORPE, who has enlisted the lady managers to undertake the collection of specimens.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—A meeting of this society, as we learn from the *Newcastle Daily Chronicle*, Saturday, November 21, was held at the Literary and Philo-sophical Institute, Newcastle, last evening, Mr. B. COWAN in the chair. In the absence of Mr. ELLIOTT, who was to have read a paper on "Plant Construction," Mr. J. HOOD, jun., read a paper on "Chrysanthemums." A discussion followed, in which Messrs. W. R. ARMSTRONG, LARKE, MURRAY, the chairman, and others took part.

WILD PLANTS.—The native flora of Belgium, as of Britain, is almost or quite worked out, so far as the identification of species is concerned. The botanists propose to devote themselves next to the habits of plants, that is to say, with the life-history of each species, the relation between it and its surroundings, its struggles with competing rivals and with animal foes, and their relationship to other plants. This line of study has been proposed by the President of the Société Royale de Botanique de Belgique, Professor A. GRAVIS.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—On the 23rd ult., Mr. R. DEAN, Ealing, read at the usual fortnightly meeting of the above, a paper on "Aromatic Garden Herbs—their History, Uses, and Culture." The subject was treated in a popular manner, and it was generally felt that the herb garden is a department of the kitchen garden not now so much appreciated by gardeners generally as was formerly the case.

MUSHROOMS AT THE CHICAGO EXHIBITION.—The Agricultural Department of the Government will make an exhibit of facsimile casts of all of the 200 varieties of edible Mushrooms which grow in the U.S.A., at the Chicago Exhibition. It is believed that the exhibit will be productive of great benefit in educating the people respecting this valuable article of food, which is abundant, but now little utilised.

POPULAR NAMES. M. L. FERRERA, Professor of Botany at the Brussels University, in a letter

inserted in the *Bulletin de la Société Royale de Botanique de Belgique*, strongly recommends botanists to call plants by their Latin names, which are understood by the savants of the whole world. This plan should be adopted by both horticultural and botanical writers, who would thereby render their contributions intelligible to almost all readers, and immediately available for scientific purposes.

"**THE FRUIT-GROWER'S GUIDE.**"—Under this title a work is projected to be written by Mr. JOHN WRIGHT, F.R.H.S., and illustrated with coloured illustrations, by Miss MAY RIVERS. *The Fruit-Grower's Guide* will be serviceable to all persons who have an interest in the production of fruit, and to all growers of fruit either for home use or commercial purposes. The work will be embellished with forty-three coloured plates and three vignettes, in which upwards of one hundred of the choicest and most useful varieties of fruit of various kinds will be faithfully and artistically portrayed by Miss MAY RIVERS. The work will further contain about two hundred diagram illustrations by Mr. WORTHINGTON G. SMITH and Mr. GEORGE SHAYLER, representing: (a) The structure of roots, leaves, flowers, and fruit; (b) The draining of land and formation of borders; (c) Plans of fruit gardens and orchards; (d) methods of raising trees by cuttings, layers, budding, and grafting; (e) planting, protecting, and supporting trees; (f) pruning, summer and winter, root and branch; (g) training and shaping trees; (h) plans of various glass structures, showing approved methods of heating and ventilation; (i) fruit rooms and stores; (j) thinning, preserving, and packing fruit; (k) the insect and fungoid enemies of trees and fruit; and all other essential details for enabling the important subject of fruit culture and distribution to be understood even by the inexperienced. Particulars will be given on the soil—its preparation and improvement; manures—their uses and application, including surface dressings, liquid manure, and mulching; climatic conditions in respect to frost, dew, light, temperatures, ventilating, syringing, &c.; sites and shelter for gardens and orchards, with instructions for their formation; also the renovation of old gardens and orchards; descriptive particulars of planting, shaping, and training from the maiden to the fruiting tree; protecting buds, blossom, and fruit, also its thinning, gathering, and storing; selections of fruits for various soils and districts, with the forcing of all kinds of fruit, so as to maintain an unbroken succession for home use, or for meeting the ever-growing demands of the great centres of population. The work will be completed in twenty-two and a half parts, 4to, at 2s. each, or in six divisions, cloth, gilt edges, at 10s. 6d. each, or in three volumes, at 21s. each. Each part will contain forty-eight pages of letterpress and two coloured illustrations. Each 10s. 6d. division, one hundred and seventy-six pages and eight coloured illustrations. Each volume, three hundred and sixty pages and fifteen coloured illustrations. The issue is confined to subscribers, and supplied by J. S. VIRTUE & Co., Limited, Publishers, 294, City Road, London.

CORK PINE AT CHICAGO.—HUGH PRICE, one of the Wisconsin Commissioners, has made arrangements for securing for the World's Fair, at Chicago, a mammoth Cork Pine (*Squoa*?), a tree which is growing rare in his State. It is 24 feet in length, and will scale 2500 feet. One plank is 16 feet long, 3 inches thick, and 11 inches wide, without a knot or blemish.

SALT BLAST.—The gale which brought about the stranding of the *Terrene* at Sandgate, and the ultimate rescue of the crew, after many hours of suspense, must be still familiar to the reader. It is curious to observe the different effects of the gale on the various shrubs exposed to its influence. At Folkestone, for instance, the Japanese *Euonymus*, as a rule, subject to some exceptions, is unhurt; but Laurestine, standing in immediate proximity, has been well nigh killed. Aucubas look as if they had

been boiled, Hydrangeas are in not much better plight, Evergreen Oaks and Tamarisks look miserable on the exposed side, Privets are stripped of their leaves, Clematis and Brambles are in the same case, and even the tips of the leaves of *Iris foetidissima* look as if burnt. Austrian Pines have withstood the blast with a little browning of the foliage, or with no injury at all; the Pinaster, on the other hand, has suffered considerably. *Pittosporum Tobira* and *Eucalyptus globulus*, which survived for several years in the locality, succumbed to the frost of last winter.

"**THE AGRICULTURAL REVOLUTION.**"—Under this title, M. EMILE GAUTHIER, of the *Figaro*, has published for popular use a history of M. GEORGES VILLE'S experiments on the manuring of plants, accompanied by illustrations which are much more telling than columns of figures. M. VILLE, as is well known, is the earnest advocate for the use, in proper proportion, of chemical manures, appropriate to the particular crop. In principle, M. VILLE has proved his point; it is only on matters of detail that any difference of opinion is likely to occur—such, for instance, as the cost of the manures, and the use of farmyard manure, either alone, or with some fertiliser mixed with it.

CASUARINAS.—A few of these elegant Australian shrubs are grown in our conservatories, and some even form part of the repertory of the table-decorator. Their chief interest, however, is botanical. M. TREUB, the eminent director of the Botanic Garden at Buitenzorg, shows that the pollen-tube, instead of entering the nucellus through the micropyle, as is customary, makes its way through the chutaza. On this account Dr. TREUB has divided flowering plants into two divisions, viz., Porogams, including the Monocots and Dicots, and Chalazogams, comprising the Casuarinas only. The pollen-tube in some cases branches at the end, and the whole course of development of the female flower is different from that of ordinary flowering plants.

"**MONATSSCHRIFT FÜR KAKTEENKUNDE.**"—Dr. PAUL ARENDT is publishing in Berlin a monthly journal relating to Cacti, which may be had from BODO GRUNDMANN, Berlin, W. 57, or from WILLIAMS & NORGATE, Henrietta Street, Covent Garden. It is illustrated with reproductions by photography. Not only the botany of the order is attended to, but also the cultivation. We hardly think a monthly journal devoted to Cacti would pay on this side of the German Ocean; but it is worth consideration whether we may not look on recent publications in Germany and the United States as pioneers of a turn in the wheel of fashion.

GLASGOW BOTANIC GARDEN.—We are glad to learn that this fine establishment is now under the control of the Corporation of Glasgow, and that the Curator, Mr. BULLEN, is commencing with vigour the work of renovation which the long-continued period of difficulties has rendered necessary. We congratulate the residents of Glasgow on the termination of the misfortunes of their garden, and on the prospects of its success in the future under the guidance of so capable an administrator as Mr. BULLEN.

CABBAGE-CATERPILLARS.—In the treatment of Cabbage-caterpillars, says Mr. FLEISCHER, in his address to the Association of Economic Entomologists, Pyrethrum (Dust-powder), mixed with four times its weight of common flour, and then kept tightly closed for twenty-four hours, leaves nothing to be desired, and thousands of dollars are yearly saved to small growers, who most need the assistance.

GERMAN CUSTOMS DUTIES.—A collection of butterflies, destined for a German entomologist, was charged with duty on the ground that, as the insects had wings, they must be classed as poultry, and pay the same duty.

CHISWICK.—The new span-roofed plant house in the Royal Horticultural Society's gardens at Chiswick is now finished, and is worth inspecting. It was

built by Messrs. J. WEEKS & Co., of Chelsea, to whom the Council of the Society have accorded a special vote of thanks for "economy and excellence."

M. CRÉPIN.—The celebrations in honour of M. CRÉPIN, the Director of the Brussels Botanic Garden, to which we have already referred, will culminate on the 6th inst. with a banquet, at which the Minister of Agriculture and Public Works will be present.

M. AUGUSTE FRANÇOIS HARDY.—We greatly regret to hear of the decease of this gentleman on the 24th ult. M. HARDY was not only an active member of the governing body of the National Horticultural Society of France, but he was director of the National School of Horticulture of Versailles, an institution which he raised to a high state of efficiency. A portrait of M. HARDY was given recently in our columns.

NATURAL HISTORY SOCIETY OF ABERDEEN.—The first meeting for the winter session, of the above society took place at the Marischal College, Aberdeen, on Wednesday, November 25. The principal feature of the evening was the reading of a paper on "The Influence of Horticulture on the Taste and Manners of the People," by Mr. HARPER, head gardener, Duthie Public Park, Aberdeen. The essay was of an instructive and interesting character, and, during the course of his remarks, Mr. HARPER maintained that gardens and gardening were decidedly conducive to the welfare of the public generally.

PUBLICATIONS RECEIVED.—*Proceedings of the Academy of Natural Sciences.* Part II. Philadelphia. — *Agricultural Science.* Indiana, U.S.A. — *Garden Scholarships.* Missouri Botanical Garden. — *The Amateur's Guide to Vegetable Growing,* by A. Watkins, London. — *La Rose,* by J. Bel, France. — *La Teratologie Végétale,* by M. D. Clos. — *Frukthuset med Dertill Horande Kultur,* by M. P. Andersen, Jonkoping. — *The Botanical Gazette,* Indiana, U.S.A. — *Bulletin II,* Department of Agriculture, Brisbane. — *Report on the Progress and Condition of the Government Botanical Gardens, Saharanpur and Mussooree* — *Murray's Magazine.* John Murray, Albemarle Street. — *Curtis's Botanical Magazine.* L. Reeve & Co., Henrietta Street, W.C. — *The Book Worm.* Elliot Stock, Paternoster Row, E.C. — *Dr. L. Rabenhorst's Kryptogamen—Die Natürlichen Pflanzenfamilien.* — *Die Hypogaeen Deutschlands.* — *Dictionnaire de Botanique.* Williams & Norgate, Henrietta Street, W.C. — *Jasmin,* by S. Smiles. John Murray, Albemarle Street. — *Report of the Knowledge of the Zoology and Botany of the West India Islands.*

ROSE BANK, MALVERN.

At a considerable elevation, and on the south-east of the Malvern Hills, stands this charming residence of Mrs. General Wilmot, well-sheltered by belts of evergreens and trees, planted so as to allow of views being obtained at various points of the lovely country around, and the more distant landscape. It is, however, the gorgeous summer bedding of the place which claims attention on this occasion, for nowhere else have I ever seen the tuberous-rooted Begonias employed in such profusion, or more floriferous or luxuriant as at Rose Bank. Begonias of every shade and colour abound everywhere—the perfection of all summer bedding plants. Whether it be the character of the soil in which they grow, which is the detritus of mountain limestone, or whether the salubrity of the surroundings cause them to flourish, I do not opine; and undoubtedly the gardener, Mr. Mason, gives them his especial attention. At this elevation the plants last in good flowering condition much longer than in gardens at a lower level. Mr. Mason was one of the first to take the tuberous Begonia in hand for massing, and he also has been very successful in raising a very distinct strain of erect-flowering varieties, pure selfs, of various colours,

and of regular and dwarf habit, well adapted for bedding purposes.

The flower gardens are laid out in a series of long and broad terraces of turf, with appropriately designed beds, arranged with skill. Each terrace is connected by means of sloping walks of easy gradients, well-concealed and arranged.

At the end of the principal terrace (see fig. 28, p. 675), flanked by tall evergreens, is situated a gallery, consisting of several tiers, each about 40 feet in breadth, which in the season is filled with several hundred plants of *Pelargonium Bonfire*, that flowered splendidly. Such a large mass of scarlet colour, with its setting of greenery, in the form of shrubs and trees and turf, is dazzling in the extreme, and in such a situation the brilliancy is not inharmonious.

To describe these terrace-gardens in detail would occupy much space. There are some beds of Begonias, self-coloured, canary-yellow, bronze, and orange-scarlet, which never fail to arrest the eye of the beholder on glancing over these pleasing combinations of colour. Some borders, designed to look like a chain, and the design filled in with Begonias, edged with Golden Feather, were very effective on a sloping parterre, as seen from the windows of the house.

Magnolia, Ceanothus, Fuchsia, and other half-hardy subjects flourish at this altitude, and their presence add greatly to the interest of the garden, the general keeping of which reflects great credit on Mrs. Wilmot's head gardener.

The saving of seeds from Begonia flowers, which have been selected for some especial feature, and artificially fertilised, is carried on year by year, and thus Mr. Mason is enabled to weed out the inferior varieties. In confirmation of this fact, I was shown a batch of seedlings possessing great vigour, and which were of exceptional merit, affording a great contrast to some other Begonia seedlings alongside, which were the produce of seeds obtained from abroad. W. C.

THE ROCK GARDEN.

I MUST beg to be permitted to say a few words in answer to the remarks of "W. A. C." in your impression of November 14. I notice at once that there is strong internal evidence to show reason why he is so partial to rockeries, and that he looks at them through coloured spectacles of his own; but let that pass—I will meet what he says word by word, and I traverse the whole of it. I suppose that the deepest sin which I commit in his eyes is that, as he thinks, I coddle my plants, and this is the worst he can say of me. But is it quite so certain, as "W. A. C." takes it to be? Has he ever given himself the trouble to consider for five minutes what coddling really is? The word can be used in a good sense, and it can be used in a bad one. According to one usage, it stands for little more than an affectionate regard, and then I plead guilty to the charge of coddling at once. "W. A. C." goes in for being natural beyond everything else; but does Nature never coddle her favourites? Ask the little *Gentianella*, which sleeps so tranquilly beneath the superincumbent snow, if it is not so? Little heeds it of the elemental strife which rages over its head, or of the devastating *bise* which could very soon have destroyed all the vitality it possesses. Enquire what the Violet says, as it lies buried in the forest under ten thousand leaves, and remains warm and snugly covered up when all around is icebound and stiffened with the cold. Look at that little point we call a bud, as it is wrapped around with fold upon fold by the deffest tenderest fingers, and is then, as in the case of the Horse Chestnut, varnished over so as to be impervious to wet. Admire the chrysalis as it lies in its silken shroud, and then let "W. A. C." say—if he can—that Nature avoids coddling, and is not greatly inclined to it. Why his very eyelash coddles his eye, and is a protector which softens and mitigates the too great glare of light—his moustache

and his beard, in all probability, coddle his mouth and throat, and keep in order those delicately-woven tubes, which are so sensitive to cold. The truth is, there is coddling in this sense everywhere all around, and safeguards, and protections, and mitigations are supplied by a loving hand in the most prodigal manner.

But I know quite well, "W. A. C." will say that all this is sheer nonsense, and not at all what he meant. He referred—of course he did—only to practices which have a very effeminate look about them (that is the word he would use), they are the outcome of folly—the evidences of a third-rate mind which has been at work—they are unnecessary and irritating to any person with common sense. Now let me ask "W. A. C." to look at this matter rather closely with me—it affects every gardener and garden in the kingdom—let us grapple with it if we can. I will give him three notes or marks of what coddling in a bad sense really is; if he can prove them against me he upsets everything I have done—if he fails in this, then his strictures on my alpinery come to nothing. The first note or mark which I offer is, that the efforts which are put forth should be largely in excess of what the requirements call for; the next is, that there should be a mis-direction in the aim; and the last is, that failure should ensue.

You would hardly blame a man who is engaged in a difficult enterprise if he takes rather too much care about it, provided only that he comes out successfully at the end. At any rate, it would not be called coddling in a bad sense, the result would plead in extenuation of his zeal; neither, on the other hand, could you label anything in a failure as coddling if you see no signs about it of over-much trouble. There would be misadventure or disappointment there. But given only fussy, irritating care, ill-judged effort, and disaster coming with a certainty on its heels, and I should contend with no one who says away with coddling when it only comes to this—let us all breathe freely again.

Now, I will give "W. A. C." an instance of what I believe coddling in a wrong sense really to be, and I will also give him an instance of what I am sure it is not, if only a right view be taken of the affair. The other day, one of my little girls dug up a Rose-bush from her garden, put it into a pot, located it in the hottest part of my greenhouse, hugged it (I saw it in her arms), very likely kissed it—though I am not so sure about that—watered it over-much, and nearly did it to death by her unremitting care. The Rose-bush was as nearly as possible sacrificed to her love. Now, I call that a typical instance of real genuine coddling in a bad sense, about which there can be no doubt at all. The zeal was excessive, the measures taken were wrong, and the result was deplorable. But I defy "W. A. C." or anyone else to say that there was coddling in a bad sense in what follows, and this will have the strongest bearing on the treatment of my alpine plants.

At the beginning of the year our well-known Snowdrop specialist, Mr. Allen, was in great difficulty about his splendid collection of Snowdrops—some Somersetshire trouble was afflicting them in a very sad manner. Snowdrop fungus had appeared to a great extent, and he did me the honour of asking me if I would take them under my wing, and do the best I could with them. At any rate, I had a large part of these Snowdrops to look after, and Mr. Boyd, of Melrose, had the remainder.

Very little time was given me to think about it, and, though I always should be glad to do anything in the world for Mr. Allen, I inwardly quaked very much at the thought of having such a very precious possession under my charge, and in such a shaky condition. So strongly had the Snowdrop fungus got hold of them, that Mr. Allen advised me not to take the bulbs into my garden near the house, lest others should be infected by them, but to grow them in a kitchen garden, which he knew I had a short way off. This, however, I would not think of for a moment. I determined to treat them under my own eyes, and to do what I could for them. No one can do any more than his best; and now what is the

result of all this on November 16, 1891? At least two thirds of these Snowdrops are above ground already. They are as strong and healthy as could be, and, as it is so very early in the season for Snowdrops to appear, I believe all the rest will follow suit, and this fine collection will be saved. I have not told Mr. Allen yet anything about it, and if he reads these lines when he is cracking his egg at breakfast—and the *Gardeners' Chronicle* comes into his hands on Saturday morning—he may take my word for it that his favourites are all right, and he may have a happy surprise.

But how were they saved? The answer is by what "W. A. C." calls coddling, and I should not call coddling at all; at any rate, not in a bad sense, or one to be deprecated in the least. I am certain that if "W. A. C." had walked round my garden any time during the summer months, and had come to that Snowdrop bed, he would have said to himself, or perhaps openly, "Coddling, coddling, it is all coddling in this garden, from the beginning to the end." Let it be so if he thinks it is, but if the means taken were in the right direction, as they manifestly were—if they were not overdone—and if the result is right it matters not to me what names are used—I shall coddle as long as I live. And this relates in the most direct manner to my rockery, or alpiery as perhaps it is called. What are my bits of glass and precautions against the sun, and woven or wooden screens, &c., but expedients which do their work, as the eyelash does for the eye? How are the means unfitted to the end? It is about as wise to leave some plants undefended to stand the rigours of an English winter, or, still worse, sometimes in the Isle of Wight the severity of an English summer, as it would be for one's self to go with linen breeches to the North Pole, or to stand on the Equator under a midday sun without any thatch on your head. Common prudence dictates some ordinary precaution, and in many cases they are as useful for plants as for men.

I entirely deny that "W. A. C." has given such a wonderful list of survivals as to prove that a happy-go-lucky way is the best. *Lithospermum prostratum* and *L. Gastoni* are both very hardy indeed, and there is no need to do anything for them; I never put them in the alpiery at all. *Hypericum reptans* gives no trouble, and though I cannot say I possess the three or four things which "W. A. C." has lately purchased from Messrs. Backhouse, I have their congeners, and I get on very easily with them. *Saponaria ocymoides* is also not difficult at all. Let "W. A. C." try *Pulmonaria daburica*, *Lewisia rediviva*, *Primula suffrutescens*, or *Edraianthus serpyllifolius*; or let him put in an *Opuntia* or two—or *Myosotidum nobile*, and many other things that might be named, and I will give up if his free-and-easy method carries with it any success in a marked and definite degree.

There are just two or three other points in his letter which I should like to notice, if you will give me leave to do so. When he writes, "If 'H. E.' goes in for quantity, he had better grow his plants in pots, and elevate them in accordance with his views," I can only say I do not know what he means, it is an unintelligible sentence to me. But when he goes on to say, that my "pockets are not large enough to admit soil to keep the plants alive," I join issue with him at once, and I declare it is not so; and besides this, I suspect there is more reason for what I do on this head than perhaps he has dreamt of. Of course, we all know that many alpine plants have very long roots, and they run back a great distance into the earth, but all this is fully provided for, and there is not, I am sure, a single instance of a plant suffering on my alpiery in the way that "W. A. C." has supposed. I wish, however to catechise my questioner about the point he has raised.

Does he know that too much soil is absolutely prejudicial to a great many alpine plants? I admit that it is a very difficult thing indeed to apportion the right amount, but a caveat should frequently be entered against supplying them with too much quite as carefully as it should be entered against

supplying them with too little. This applies in a very marked degree to the genus *Primulaceæ*. Herr Max Kolb gives as one of the reasons why they often blossom so scantily in our hands, that they have been fed too much. His words are these on p. 230 of his work on alpine plants, after loud lamentations over the disappointments he has met with: "But one has to blame oneself, they have been put into too big beds, or they have had too much nourishment," and he insists on this over and over again. On p. 234 he writes about *Primula calycina*: "It likes very little nourishment." On p. 237 he says that "*P. commutata* is apt to die off if it has too great nourishment." Little nourishment he prescribes on p. 240 for *P. Facchini*. "*P. hirsuta* is to be put into small clefts or holes," and so on in many other instances. He seems to think that there is quite as much danger of overdoing as there is of underdoing this business, and he warns his readers with emphasis against a common mistake which he frequently meets with. The truth is, according to him, that you might as well give a man a tremendous dinner and then ask him to sing a song, as supply some *Primulas* with too much nourishment and then expect them to blossom. I very much fear that if he saw some of the Monte Rosas and Matterhorns of modern days, and the *Primulas* that often look so unhappily upon them, he would use the words of commiseration which he has given us in his book, and his verdict about the disappointment of their constructor would run in precisely the same groove as that with which we are already familiar—"It is his own fault—there is too much earth." He might add to it this: "He has coddled in a bad way after all." Also, he is quite wrong in asserting that a plant cannot develop in a pocket, be it large or small. It does develop, and runs over the sides with the greatest possible ease. Also, it is a mere travesty to assert that ladies must ascend a ladder to look at the plants. It is no such thing at all. The alpiery is commanded by the eye in every part with the greatest facility. A small ladder, as I have said, is of use for the gardener to work on when he looks after the two highest tiers; but this would have been saved if I could have found space to make my construction wider.

A much wiser man than "W. A. C." appears to me to be, was visiting my garden the other day—he is an F.R.S., a professor of botany, &c.; and when he saw how well the things were doing, and took occasion especially to note the "hideous slabs," he gave it as a possible explanation of the general well-being he beheld, that heat is given off in the night from these limestone slabs, and that thus the temperature of day and night is equalised in a very marked degree, which alpine plants love so much. If opinion is to be set against opinion, I think at present, that those who know the most about plants have the most declared themselves in favour of my plan; and here, therefore, so far as I go, the matter may rest. I am accustomed to the tombstone jokes, and the allusion to a cemetery; they are stale and worn out, but if it pleases any one to renew them, let him renew them. For me, it is enough to know that life, not death, presides over my little spot. *Hic floret* instead of *hic jacet* runs on the tombstones as a rule, and strange to say, as surely as the spring comes round, there is a grand annual resurrection, and thousands of little lives are renewed. On terms of this sort, I am willing to be called the keeper of a cemetery, if "W. A. C." desires to have it so—it matters little to me. *Henry Ewbank.*

SCOTLAND.

SCOTTISH HORTICULTURAL ASSOCIATION'S CHRYSANTHEMUM SHOW.

This show was opened in the Waverley Market, Edinburgh, on Thursday, November 19. Last year the number of competitors was 151; this year there were 157. Last year there were 792 entries; this year

they number 871. The advance which is apparent from those figures was also maintained in the leading exhibits, which were, in quality, in advance of any that have yet been shown.

The great feature of the show was, of course, the exhibition of *Chrysanthemums*. It is probable that there were on view not far short of 200 varieties of *Chrysanthemum*, every one of which presented some special feature of form or colour, and ranged through all the shades of yellow and bronze, and brown and pink, and purple to purest white, and blooms of hardest form to those of filmiest petal. The great prize of the show, for which there were about a dozen competitors, is the City of Edinburgh Cup, valued at £20, offered for the best forty-eight blooms, Japanese *Chrysanthemums*, of not less than thirty-six varieties. This was secured by Mr. J. W. M'Hattie, of Newbattle Abbey Gardens. His blooms were all well grown, and shown in perfect condition, some of them measuring as much as 6 inches across; they included most of the well-known varieties. The 2nd prize lot, which was exhibited by Mr. Parker, Imprey, Droitwich, also contained some very choice blooms, but they lacked the evenness of quality of Mr. M'Hattie's.

The next most coveted honour at the show was the Scottish Challenge Cup, presented by the Association for the best twenty-four blooms of incurved *Chrysanthemums*, and open to Scottish gardeners and amateurs only. It was won by Mr. Alexander Watt, Blackhouse, Skelmorlie, with an exhibit of very even merit.

In the competition for the best twenty-four *Chrysanthemums*, Japanese and incurved, Mr. Richard Parker showed some blooms which were hardly surpassed in the show for delicacy of colour and excellent condition.

The smaller competitions all brought out their quota of splendid specimens, and the exhibition of single varieties constituted a feature in their corner of the market.

The Government of Nova Scotia, through Dr. George Lawson, Secretary for Agriculture to the colony, sent a collection of about eighty varieties of Apples, all fine samples of their kind; large, full, and richly coloured. It comprised most of the fine varieties for the production of which the colony is famed, notable amongst them being splendid samples of *Blenheim Pippin*, *Ribston Pippin*, *Gravenstein*, *King of the Pippins*, *Golden Pippin*, *Ohio Nonpareil*, *Seek-no-Further*, *Grimes' Golden*, *Cabasba*, *King of Tompkins County*, *Ben Davis*, *Fallwater*, *Baldwin*, *Vandevere*, and many others which have appeared in former collections exhibited from Nova Scotia. Among those not previously seen at Edinburgh, *Red Jewel* bears a considerable resemblance to a large and well-grown *Cox's Orange Pippin*; *Eton Spy*, an improved *Northern Spy*; *Haas*, a very handsome, roundish, bright red Apple; and *Nod-head*, a large, round, green, red-cheeked, useful-looking fruit. *Wellington* was also in the collection for the first time, but although full-sized and clean grown, it was less-briskly flavoured than home-grown samples, a drawback peculiar to most, if not, all culinary Apples grown in America. Dr. Lawson also sent a whole barrel of splendid *Gravenstein* Apples, to show the method of packing for exportation, which was a point of much interest to the growers of fruit; but with the general crowd the beautiful, rich, juicy Apples proved more attractive than the method of packing, and it was impossible to keep the barrel intact to the end of the show. The collection received a well-merited award of a Special Gold Medal.

The same award, a Special Gold Medal, was made to Messrs. Dicksons & Co., nurserymen, Edinburgh, for a grand collection of upwards of 150 varieties of Apples and Pears, the enumeration of which would include all the popular varieties of the day. Among them *Mère de Méauge* and *Peasgood's Nonsuch* Apples were conspicuous from their great size and fine colour; and among Pears *Calabasse Grosse* was the weightiest, although many other better varieties followed closely. Fine samples were exhibited of

THE CONFERENCE PEAR (RIVERS).

the two new Apples, James Grieve and Bailie Neilson, for the latter of which they received a First-class Certificate, the former being previously certificated. Both are handsome fruit, and useful types of Apples, of which more will be heard in future, when they become better known.

Mr. William Ingram sent a very interesting collection of thirteen varieties of Pears from the gardens at Belvoir Castle, Leicestershire, which were very highly commended by the judges for their fine size and excellent qualities. Besides grand samples of such well-known varieties as Doyenné du Comice, Beurré Superfin, Easter Beurré, Winter Nelis, Josephine de Malines, Glou Morceau, and Beurré Rance, the collection included Louise Cappe, Beurré du Bouisson, Conseiller de la Cour, Huyshe's Bergamot,

This variety of Pear is a seedling raised by Mr. Rivers, of Sawbridgeworth, and submitted to the committee of the National Pear Conference in 1885, the name of Conference being given to it as a memorial of the gathering, it being the only English seedling Pear certificated there. Fruit, large and pyriform; skin, bright yellow, for about one inch below the stalk, beyond which it is yellow covered with bright russet; stalk, 1 inch long, inserted without depression; eye, open; sepals, erect, placed in a shallow basin; flesh, salmon-coloured, by which the Pear may be readily distinguished; rich, melting, very juicy, and buttery.

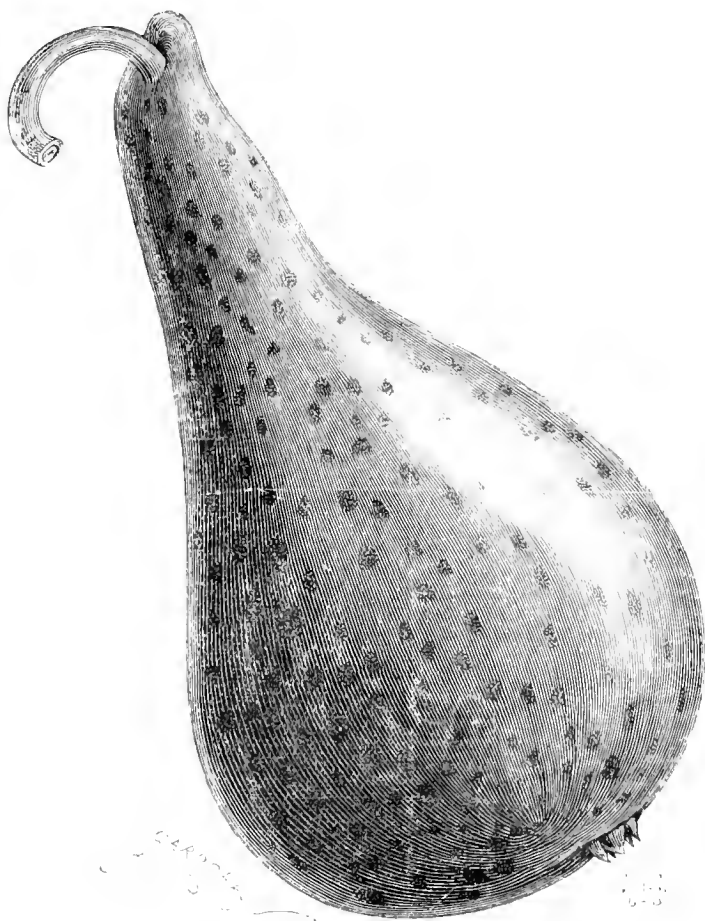


FIG. 99.—THE CONFERENCE PEAR.

extra fine; Marie Louise d'Uccle, and Prince Consort, the last a very fine sample.

For a table of home and foreign fruit, Mr. More, fruiterer, Queen Street, Edinburgh, was the only competitor, and deservedly secured the Association's Gold Medal for an excellent display of a great variety of fruits.

Great regret was felt that the exhibit of fruit from the United States Government did not reach Edinburgh before the show was closed, owing to stress of weather in the Atlantic; but the Association was to exhibit it at the first monthly meeting on Tuesday, December 1.

The display of vegetables was, as is usual at Edinburgh winter shows, large in numbers, and of high excellence all round.

This is a dessert Pear of first-rate quality, equally vigorous on the Pear and Quince stocks; on the Pear stock it begins to bear fruit three years from the graft, and is therefore well adapted for orchard and garden culture. It is a vigorous grower, and an abundant and regular bearer, and likely to take rank as a standard Pear in England. It is rather singular that a Pear of this quality should have been raised from a baking Pear. The drawing from which our figure was taken was by Miss Rivers.

HOME CORRESPONDENCE.

CLIMBING NIPHETOS ROSE—I have read with some interest the several notes that have appeared in recent numbers of the *Gardeners' Chronicle* anent

the above Rose. Without wishing to enter into a discussion, or to differ from any views already expressed, I beg to state that the plant as seen at Messrs. Keynes, Williams & Co.'s nurseries, is both climbing and free-flowering. On passing through the houses of the above firm some two or three years ago, I noticed that one of the Roses had made within four months 22 feet of growth. Although this shoot was the longest, there were many others nearly as long. With regard to the flowering propensity of this Rose, some difference of opinion at one time existed, but as seen in the above nurseries, it is positively free-flowering. I happened to call at the nurseries in the spring of the following year, in which reference is made to the 22 feet growth, and on that very plant I counted nearly one hundred flowers then in a bud state fit to cut, without noticing any that were small, or referring to those that had been cut. More recently, I have seen instances of this Rose rambling in the freest manner over the roofs of houses, and also observed the same plants blooming equally free. *C. Warden, Clarendon Park, Wilts.*

CEDRUS DEODARA FRUITING.—There seems to be much interest manifested this year with regard to the fruiting of the *Cedrus Deodara*, strengthened, no doubt, by the very excellent figure given of it in your issue of October 10, p. 423, and referred to again by a correspondent the next week. One is almost tempted to ask if it is a very unusual thing for the Deodar to fruit in this country, it so, it may be of interest to mention the following. I have in the gardens here, amongst others, a young tree of *Cedrus Deodara*, 20 feet in height, which has borne female cones every year for five years in succession, and has at the present time about forty very fine cones upon it. I have raised some young plants from it twice, thus proving that some, at least, of the seed was capable of vegetating. The tree is in good health, and grows in a very light soil, consisting chiefly of leaf-mould, with a great number of stones in it. *T. Sharman, Rozel Bay, Jersey.*

— From amongst a collection of some forty trees of *Cedrus Deodara*, planted about twenty-eight years ago at this place, we have one tree which has seven cones, quite as good as the Dropmore tree, figured in the *Gardeners' Chronicle* on October 10. In the last week in the month of October the scales of these cones began to open from the base upwards to about three-fourths of their height, and remained open for about ten days, when they closed up tightly as before, and have so remained ever since. Is this a usual thing for them to do? *J. Willis, Bishopsteignton, Trignmouth.*

BOCCONIA CORDATA.—Having observed some remarks in the last issue of the *Gardeners' Chronicle* respecting *Bocconia cordata*, I should like to say that there are two plants in the gardens at Shopwyke House, and one of them in an exposed bed of herbaceous plants; the other in the foreground of a belt of shrubs, and neither have had any protection in winter. Both made stems this last season between 3 and 4 feet high. This is the first place in which I have met with the plant, but I fully agree with Mr. Earley's remarks, that it is a grand solitary plant on the lawn, where we intend to have one next year. *A. Godden, Shopwyke House, Chichester.*

PITMASTON DUCHESS PEAR.—Your correspondent asks if his Pears (Pitmaston Duchess) are not unusually large. I exhibited eight fruits of this variety at the Bath Chrysanthemum Show on November 11, which weighed 10½ lb., the largest weighing 26 oz. The tree, which is ten years grafted, brought to maturity four dozen fruits, and but half-a-dozen of them were less than 1 lb. apiece. *J. Gibson, Draycot Gardens, Chippenham.*

FRUITING OF CHIMONANTHUS FRAGRANS.—On visiting Normanton Park garden lately, I observed a tree of *Chimonanthus fragrans* bearing seed vessels of which I gathered a few to send for your inspection. The fruit is much smaller now that it is ripe, than it was early in the summer, when it was almost twice its present size. The tree is trained to a south wall, and is aged. I have never before seen this species in fruit. *W. H. Divers.* [The fruiting of this plant is not uncommon. Ed.]

NOTES FROM OAKWOOD.—On October 20 we finished putting the grease bands on our fruit trees to protect them against the female of the winter moth. This made its first appearance on November 4, on the 12th, moths came in quantity—we found eight on one tree, there seems to be something in the

garden at Oakwood attractive to moths, perhaps our wood or water. In the gardens here and at our cottage near, so few were caught last year (while we had many at Oakwood), that we have not banded the trees. I should doubt if the quantity of grease which finds its way through the Willesden brown canvas of which the bands are made, being enough to injure the bark; but to make sure, we have this year put a band of Willesden thick brown paper under the greased band. I shall be obliged if any of your readers who grow hardy Cyclamens successfully, would state whether they find sun or shade best for them. I know a splendid bed in Cheshire in complete shade where they bloom well and have beautiful leaves, but I still think that full sun is best for them. In our experience the corms grow larger in sun than in shade, and there are more flowers; but we find that, unlike many other alpine, the roots keep so near the surface that occasional watering is needful. There seem to be curious changes in the horticultural world, while members of the trade go on the Council of the Royal Horticultural Society, which used to consist of amateurs only, amateurs have begun to sell plants. I have to-day received some good plants sold by a clergyman in the country. *George F. Wilson.*

FRUIT-DRYING APPARATUS.—After seeing the recommendation in the *Gardeners' Chronicle* last July respecting fruit evaporators, I advised my employer, F. Ricardo, Esq., of Bromsberrow Place, to try one of the American Evaporators (Dr. Ryder's patent). I think it would be of interest to many of your readers if I were to give a little of my experience with this apparatus. In the first place, I can thoroughly confirm what the makers and introducers say respecting it. It is simple in construction, not liable to get out of order, and it may be worked with the greatest exactness as to temperature, and, with ordinary care and intelligence, anyone may use it; and although the machine works at a great heat, i.e., 167° F. up to 300° F., there is no danger from it catching fire, though the principal part is of wood, unless through carelessness or excessive firing. In drying any article, a rapid circulation of air is as necessary as heat, the degree of which must vary with the article to be dried and its condition. I have used the evaporator constantly this season, and have no hesitation in saying that it can be used for almost any kind of fruit or vegetable—in fact, for anything that requires to be dried to preserve it. It is the right thing in the right place; the consumption of fuel is very small—about 40 lb. a day for a No. 2 machine, and the price is very moderate, considering its great powers. At the Gloucester show this year, I exhibited sixteen samples of dried fruits, which were highly spoken of, both as to their appearance and quality. It is a thing which I venture to think ought to be more introduced into this country, where it would be the means of saving quantities of wholesome fruit in a season like the last. *W. A. Trotter.*

— We append the following remarks on the exhibition of dried fruits at Gloucester on November 9 and 10 which appeared in the *Worcestershire Echo*:— "I think one of the most interesting exhibits in connection with fruit culture was seen at the above show on Monday and Tuesday last, an exhibit which reflects great credit upon the enterprise of Mr. F. Ricardo, of Bromsberrow Place, Ledbury. The exhibit consisted of a variety of fruits, Plums, Pears, and Apples, grown at Bromsberrow, and dried at Bromsberrow by the process known in America as fruit evaporating. The samples shown were in point of appearance quite on a par with any samples imported from foreign countries, and in flavour evidently superior. The subject of profitable fruit-culture is at the present time a matter of great interest, and it has been proved conclusively that the best varieties of British-grown Apples will fetch considerably more money than the best varieties of American Apples; one grower in Herefordshire this year having realised 3s per cwt. for his Peasegood Non-ouch, when the best American Bilston Pippins were realising 19s. 3d. per cwt. Yet we are paying over eight millions of money yearly in the importation of foreign fruit. But still, though the best varieties will command good prices, there remains the question, what is to be done with the quantity of inferior fruits? The mode practised by our cousins across the Atlantic has been to select the best-grown fruits for the fresh fruit markets, and utilising the other by the evaporation process, and thus supplying us with the Apple ringlets and other fruits which we see exposed for sale in our grocers' and fruiterers' shops. Mr. F. Ricardo has been the first to illustrate to the landowners, farmers, and fruit-growers of this

neighbourhood the utility of this process in a practical manner; and the thanks, not only of the fruit-growing community, but of the general public, are certainly due to him for his enterprise, for he has proved that when a glut occurs in one kind of fruit, like there has been this year in egg Plums, instead of the grower having to part with them at an unremunerative price, he can preserve them and get a good price for them in the winter, when fruit is fetching prices almost prohibitive, or, at least, quite so to the working classes. Not only will this process save the destruction of enormous quantities of health-giving fruit in times of superabundance, or when the markets are overcrowded, but should other landowners, farmers, and fruit growers adopt the method, it must of a necessity be the means of improving our rural districts, as it would add a new industry to our almost depopulated villages. *J. G. Wilson.*"

HARDINESS OF PHLOXES.—Quite recently a lady related to me the following incident, anent some Phloxes of the decussata section. She had promised some roots to another lady friend, and told her gardener, who only tended her garden occasionally, to take off some pieces as he was digging the borders. This the gardener did, and he laid them for the moment in the path to add others of different kinds as he came to them. This was done, and the border duly finished, but it happened to be done just as the severe winter of twelve months ago set in, the result being, that the bits remained exposed to frost during the greater part of that memorable winter. But, singularly enough, the Phloxes appeared none the worse for the exposure; and what has been puzzling the giver is, that those pieces, after all the exposure, produced far finer heads than the original plants from which they were taken. Most probably, however, these latter were getting old, and the pieces taken from them would, by their being outside, be the youngest and most vigorous, which, coupled with a change of soil, would bring about the superior heads of bloom, in which item there is an obvious lesson. *J.*

FROST IN SOUTH WALES.—We had our first frost of the season on November 23, when the thermometer registered 5°, cutting down all the Dahlias, Beans, and other tender plants, which up to that time were looking fresh and green. *R. Milner, Penrice Castle, Swansea.*

BEGONIAS JOHN HEAL AND WINTER GEM.—Few more grateful or easier-managed subjects than these are grown to brighten the plant-houses during the dull winter months, as witness their cheerful effect in one of the structures at Messrs. Jax, Veiten & Sons, Chelsea, where they were both raised. Without considering the wonderful succession of flower which these neat growing plants give, the duration of each spray of their carmine-crimson blooms is very remarkable. Mr. Heal is still working on them, and further novelties equally desirable may be expected. Already, too, some fine double-flowered forms of this winter-flowering strain of Begonias are beginning to appear among the new batches flowered at Chelsea. They are useful for cutting, good for indoor decoration, and for any other purpose for which an easily-grown plant may be used. *J. O'B.*

THE CLASSIFICATION OF ROSE GROWERS AND OTHER EXHIBITORS.—I should like to make a few remarks in reference to your leading article signed "Rosa," pp. 639, 640. Not knowing who "Rosa" may be, I am unable to form any idea as to his practical knowledge. He, evidently, is retained on the side of the big growers, and he apparently thinks that a small grower can compete with advantage, rather than otherwise, against men who grow say, to quote his figures, 500,000! The absurdity of this must be obvious to any practical rosarian; a man who grows even 10,000 must have a large space to grow his Roses in, and he will also, in all probability, grow his 100 or so of varieties in 50's or more of each kind, whereas a small grower could, at the outside grow them in lots of five. This at once would put the small grower out of court in competing with his big neighbours. As every practical rosarian knows, that, given equal soils and ordinary conditions, a man who has a large number of plants, will on most occasions in the Rose-showing season, have several good exhibition Roses of each variety; a small man, on the other hand may possibly have one or two of them—in one case it is almost an absolute certainty, in the other a mere chance—his quality, of course, may be equally good. "Rosa" then harks back to the

same cry which has been repeated by others on this subject—"And who is to count them?" To judge from the way that Mr. Pemberton, Mr. D'Ombraun, and other leading rosarians write on this one point, readers of the gardening papers who are not rosarians, must consider us a very mean, and in fact, dishonest set of men as exhibitors—may no trust be placed in our statements? "Rosa" accentuates his poor opinion of us by broadly hinting that many of us who are local secretaries take advantage of our special knowledge to arrange our exhibits according to the entries of others. Now I am only personally acquainted with the shows at Croydon, Reigate, Sutton, and the Crystal Palace, and I will answer for the fact, that at none of these places is such advantage taken. At Sutton, I consider the local secretary shows in too many classes; but he can only take three prizes, and what he does is for the advantage of his local society, as he frequently clears off all the first prizes; and although it may annoy exhibitors who come from afar, he does nothing unfair in thus exhibiting. The only point on which I thoroughly agree with "Rosa" is, in his criticism on the division of classes into gentlemen's, gardeners', amateurs, and so on. Mr. Pemberton suggested some such division for the National Rose Society's shows; but whatever decision may be arrived at by the General Committee, or by those who may be present at the next annual meeting, I am certain that there would be endless unpleasantness if such an arrangement be adopted. I am sorry that your powerful journal should be throwing its weight on the side of the big growers, as I think any sympathy in the question should be on the side of the small rosarian, of whom I acknowledge I am one. *Charles T. Grahame, Croydon.* [We can scarcely be accused of taking sides with the big growers, seeing that our columns are open to both big and little alike, so long as they do not transgress the limits of fair criticism; and it is only by allowing each party to state his case, that there is any chance of our readers arriving at a fair estimate of any matter as a whole. Ed.]

TOMATOS AND CUCUMBERS FOR MARKET.—I should strongly recommend "N H C.," who enquired about the above in the *Gardeners' Chronicle*, p. 651 to grow Ham Green Favourite Tomato. I have grown it for three years, and found it to be a first-class fruit and an abundant cropper and free setter. The fruits are large, handsome, and fine-flavoured; and I can also recommend Hackwood Park Prolific, which is an excellent variety of Tomato when true. The best Cucumber, in my opinion, is Lockie's Perfection, a very prolific and handsome black spine, of a bright green colour, and of superior flavour, keeping without loss of flavour after being cut; and I should think it is one that would find ready sale. *W. Smythe, Basing Park.*

THE WORD "DAHURICUS."—I suppose Mr. C. Wolley Dod is correct in his explanation in the applied form of the word. Its meaning has perplexed me. Supposing it to be geographical, I searched indices, maps, and atlases, and tried the schoolmaster, but without avail—all resulted in failure. I sent to the Geographical Society, and they informed me, as Mr. C. W. Dod points out, "East of Lake Bukal," Siberia. I had seen a *Primula* catalogued as *P. dahurica*. The word is given in various forms to species of plants, such as *dahurian*, *dahuricus*, *daurica*, and *daurica*. I have been informed that *Daurica* is interesting in its flora, and that Fischer's *Primrose*, *P. nivalis*, grows there—I do not mean the *nivalis* of the *viscosa* species; there is one given in the *New Synopsis* as *P. nivalis*, Pallas, which, I think, may be the same. Mr. W. Dod is an authority on *Primulacæ*, and I wonder if he would kindly inform me whether it is in any English collection, or correct me if I am in error. *W. Withers, Brasted.*

JUBÆA SPECTABILIS ETC.—The two fine *Jubæa spectabilis* (*Cocos chilensis*) belonging to the firm Louis van Houtte, of Ghent, measure nearly 10 feet high by over 11 feet across. The trunk, covered with large shining scales, and in one case, it branches in an unusual way at a height of 1½ feet, and circumference of 6½ feet; and one of the branches bears twenty-eight large leaves, the other thirty. Two other specimens of lesser dimensions are nevertheless very interesting. This cool-house Palm is most effective when seen in summer in the middle of a large grass-plot. In the same establishment, the new *Bertolonia* of 1890 are in full leaf:—Baronne Adolphe de Rothschild,

with large leaves, and red veins; Madame Alfred Bleu, marbled and spotted with white; Madame Léon Say, more white than the last-named; and Baron A. de Rothschild, very handsome. *Alsophila australis robusta* is a very promising novelty. *A. B.*

A NEW ANGULOA.—We have received, through the kindness of M. L. LINDEN, L'Horticulture Internationale, Brussels, a flower of an Anguloa, said to be new, but which bears a very strong resemblance to *Anguloa uniflora*, an old inhabitant of our orchid-houses. A full inspection of pseudobulb and leaf is necessary before arriving at any decision as to the absolute identity of the new comer with *A. uniflora*.

SOCIETIES.

EYNSFORD COTTAGE GARDENERS.

NOVEMBER 16.—The members of the Eynsford Cottage Gardeners' Mutual Improvement Society, and several friends, were entertained at supper at the "Five Bells" Inn, by the generosity of Messrs. Cannell & Son, of the Swanley and Eynsford Nurseries. An invitation had been circulated to the members of the society to bring with them a dish of cooked Potatoes, and the first business of the meeting consisted of "sampling" some twenty-five dishes of Potatoes, and deciding on their various merits. After a careful test the palm was awarded to a new variety, raised by Mr. Robert Cannell, and known as Our Seedling; the next in merit being Cannell's Victory, followed by White Beauty, Snowdrop, and American Rose, in the order named.

After the supper was finished, Mr. Cannell, sen., took the chair, and Mr. J. D. Abbott, gr. to Sir W. Hart-Dyke, the vice-chair.

In the course of the evening the chairman said that he had decided to offer £6 in the form of prizes at the society's show next year, and it was for those present to decide the terms of the competition; it was eventually decided that the competition should take the form of a collection of eight varieties of vegetables, selected from exhibits of the Eynsford Society on the day of the show, matched against a similar collection of eight varieties, exhibited by any other similar society in Kent. The prizes to be divided as follows:—1st prize, £3; 2nd prize, £2; and 3rd prize, £1, with the proviso that no one society should take more than one prize.

BANBURY CHRYSANTHEMUM.

NOVEMBER 18—This took place in the Exchange Hall, and was in most respects an improvement upon that held last year. Groups of Chrysanthemums arranged for effect were a fine feature, and for the fourth time Mr. Baskett, gr. to W. Mewburn, Esq., Banbury, was awarded the 1st prize, with admirably-grown and bloomed plants, the flowers fresh, and of fine quality; Mr. Cummings, gr. to Jonathan Gillett, Esq., was a close 2nd.

Tables of foliage and flowering plants are always a good feature here; they are raised about 2 feet from the ground, and, facing each way, were very effective. The best came from Mr. Doherty, gr. to Lord North, Wroxton Abbey—a light and graceful arrangement; Mr. P. J. Perry, nurseryman, Banbury, was 2nd, with a nicely-arranged lot of plants, with the exception that they were too much packed.

Specimen plants of Chrysanthemums were shown in several classes, the Japanese varieties being preferred by growers. *Iliver Fleuri Mdle. Lacroix*, and Peter the Great, made the best specimens; in not a few cases the foliage was poor. Mr. Wingrove, gr. to G. H. Nelson, Esq., Rousham Park, and Mr. J. Green, Old Headington, Oxford, were the principal prize-winners.

In the cut flower classes, Mr. John Walker, nurseryman, Thame, was one of the principal prize winners. He was placed 1st with twenty-four varieties, twelve incurved and twelve Japanese. Mr. Neal, gr. to P. Southby, Esq., Bampton, was 2nd. With eighteen incurved varieties, Mr. Wingrove was 1st. These were set up with 8 inches or so of stem and foliage, and gained thereby in effectiveness. Mr. Neal was placed 2nd. Mr. Walker had the best twelve incurved, Mr. J. Green was 2nd.

The best eighteen Japanese came from Mr. F. J. Myers, who had a fine lot of blooms, fresh, and bright in colour. Mr. Wingrove was a good 2nd, also with fine blooms.

Mr. C. Green had the best twelve varieties; 2nd, Mr. McIntyre, gr. to Viscount Valentia, Bletchington Park, his stand containing a very fine deep-coloured incurved bloom of Mrs. W. E. Clarke.

Reflexed blooms were well shown by Mr. Baskett. Mr. Wingrove was a close 2nd. Anemone-flowered varieties were also good, Mr. Wingrove having the best twelve; Mr. McIntyre being 2nd.

Pompons and Pompon-Anemones made very pretty stands. Mr. A. E. Kirtland had the best stand of twelve bunches of the latter, Mr. Cummings was 2nd; with the former Mr. Wingrove was 1st, and Mr. McIntyre 2nd.

There was a class for twelve blooms of large-flowered Chrysanthemums, some with 9 inches of stem above the board; and here Mr. Baskett was 1st with a mixture of Japanese and incurved varieties in fine character, Mr. F. J. Myers being 2nd.

Chinese Primulas, double and single, were numerous and good.

Epergues, bouquets, and baskets of Chrysanthemums, arranged by ladies, were a pretty feature, and attracted much attention. A tendency to overcrowd was traceable in most of them.

Fruit.—The best eight dishes of Apples came from Mr. Wingrove, who had fine fruits of Cox's Pomona, Peasgood's Nonsuch, Blenheim Orange, Cox's Orange Pippin, Court Pendu Plat, &c.; Mr. Doherty was 2nd. Mr. Doherty had the best six dishes of Pears. Grapes were represented by finely finished Ailcante from Mr. W. C. Cartwright; and by Gros Colmar from Mr. Doherty; and White Muscats from Major Norman and Mr. A. V. Cross.

Potatoes were shown in collections of nine dishes and six dishes; in the one case, Mr. E. S. Wills, The Gardens, Edgecote Park, was 1st, and in the other Major Norman. Onions were not so fine as usual, but Mr. Pope, gr. to the Earl of Carnarvon, Highclere, was 1st, with Deverill's Anglo-Spanish, fully finished; Major Norman was 2nd, with Deverill's Ailsa Craig.

Mr. Perry, Banbury, and Mr. J. Clow, seedsman, Banbury, had some pretty floral decorations, not for competition, both of which were highly commended.

HAREFIELD HORTICULTURAL.

The Chrysanthemum show which was held recently at the Memorial Hall, under the auspices of the above society, was quite a success, there being a good display of cut-blooms and pot plants.

The cut flowers exhibited by Mr. J. C. Mundell, gr. to Lord Ebury, Moor Park, were very fine, as also were those staged by A. H. Tarleton, Esq., Breakspears (gr., Mr. H. J. Bull), and Mr. Hearo, gr. to Mrs. Goodlake, Deaham Fishery.

The group of pot plants exhibited by Mr. W. Batchelor, gr. to Colonel Vernon, Harefield Park, attracted much attention, and the groups staged by Messrs. Bennett, Bull, and Milton were highly meritorious.

Mr. Bennett, manager to Mr. G. Webster, Harefield Grove, staged a capital lot of Apples, Grapes, Tomatoes, Cucumbers, and Mushrooms; and Mr. Mundell showed Apples, Pears, and Grapes in good condition.

Obituary.

MR. FRANZ KRAMER.—We regret to inform our readers of the death, on November 22, of Mr. Franz Kramer, head gardener to Herr Legationsrath Rucker-Jenisch, of Flottbeck, Hamburg. Mr. Kramer had, for about thirty years, charge of one of the most renowned continental Orchid collections, that of the late Senator Jenisch. He was well known in English horticultural circles, and generally esteemed both for his character and his abilities as a gardener. The situation having been held by his family for several generations, it is likely that it will be filled by his eldest son.

ROBERT COWAN.—The numerous friends of Mr. Robert Cowan, formerly partner in the firm of Messrs. Kennedy & Co., nurserymen and seedsman, Dumfries, will regret to learn of his death, which took place suddenly, from heart disease, on the 23rd ult., at his residence, Birkhill, Dumfries. In partnership with the late Mr. Newbigging, Mr. Cowan conducted the important business of the firm named since 1856, till, on the death of his partner, about six years ago, he retired from business. In his earlier years, Mr. Cowan served in the establish-

ment of Messrs. Peter Drummond & Sons, Stirling, and also in that of the firm of Drummonds, of Dublin. Mr. Cowan was a keen horticulturist, and a warm supporter of every progressive movement in horticultural matters.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

REPORT OF THE APPLE CONGRESS, 1883.—Will any reader of the *Gardeners' Chronicle* possessing clean copies of the above, kindly communicate with the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, S.W.

PLANTING AN AVENUE WITH ELMS.—"J. M." intends to plant one side of an avenue with Elm trees, and desires to introduce as many varieties as possible at the same time wishing the trees to harmonise one with another when they are old. He would be obliged if any of our readers would, through the medium of our columns, give him a list of varieties that would be suitable for this purpose. The sub-soil is clay and gravel.

THE "CONCORD TREE."—Can any of our readers furnish "R. P." with the botanical name of the plant which is known in New Zealand as the "Concord Tree," the seeds of which are very large, and the foliage pinnatifid?

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.				10ths In.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 4, 1891.	
	Above (+) or below (-) the Mean for the week ending November 25.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.					Below 42° difference from Mean since Jan. 4, 1891.
1	4	0	45	+ 192 + 121	5	215	46.0	14	27
2	5	0	54	— 78 + 169	5	165	27.0	27	30
3	1	0	39	— 106 + 116	3	162	22.0	18	29
4	4	0	41	— 80 + 125	2	174	23.8	18	33
5	4	0	42	— 116 + 117	1	171	27.1	26	31
6	4	6	37	— 118 + 150	2	166	29.7	36	36
7	5	2	41	+ 75 + 76	2	179	40.9	20	32
8	4	0	34	+ 15 + 50	1	163	32.1	18	29
9	4	13	33	— 152 + 130	3	175	38.7	43	37
10	4	4	30	+ 3 + 74	1	198	30.2	20	31
11	5	12	37	— 64 + 74	0	179	34.1	44	34
12	2	28	5	— 56 + 44	2	175	32.1	44	47

The districts indicated by number in the first column are the following:—

- 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 28, is furnished from the Meteorological Office:—

"The weather during this period varied considerably in different parts of the Kingdom, but was as a whole rather fairer than that experienced previously, especially over England and the east of Scotland.

"The temperature was below the mean in all districts, the deficit varying from 2° in the 'Channel Islands,' to 4° in most other districts, and to 5° in

'Scotland, E. and W.' and 'Ireland, S.' The highest of the maxima, which were registered in most instances on the 28th, ranged from 53° in the 'Channel Islands,' 'England, S.W.,' and 'Ireland, S.,' to 46° in 'England, N.E.,' and the 'Midland Counties.' The lowest of the minima were recorded during the middle part of the period, when the shaded thermometer fell to 16° in 'Scotland, E.' (at Braemar), to between 20° and 25° in most other districts, but to only 35° in the 'Channel.'

"The rainfall slightly exceeded the mean value in 'England, N.W.,' and equalled it in 'Ireland, S.' In all other districts there was a deficit, and in 'Scotland, N. and E.," this deficit amounted to 5-10ths of an inch.

"The bright sunshine shows a considerable increase on that recorded last week, and has exceeded the mean for the time of year in nearly all districts. The percentage of the possible duration ranged from 14 in 'Scotland, N.,' and 18 over 'England, N. and E.,' to 36 in 'England, S.,' 43 'England, S.W.,' and 44 in the 'Channel Islands' and 'Ireland, S.'"

MARKETS.

COVENT GARDEN, December 3.

BUSINESS quiet. Prices unaltered. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s.d. s.d.		s.d. s.d.	
Apples, Canadian and Nova Scotian, per barrel ...	12 0-18 0	Kent Cobs, 100 lb. ...	30 0-35 0
Apples, ½-sieve ...	1 0-4 0	Lemons, per case ...	15 0-30 0
Grapes ...	0 6-2 6	Pine-apples, St. Michael, each ...	2 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s.d. s.d.		s.d. s.d.	
Acacia or Mimosa, French, per bunch ...	1 3-1 6	Marguerites, per doz. bunches ...	3 0-4 0
Azalea, p. doz. sprays ...	1 0-1 6	Narcissus, paper-white, Fr., p. bun. ...	4 0-8 0
Camellias, white, doz. ...	3 0-4 0	Orchids:—	
— red, per doz. ...	1 0-1 6	Cattleya, 12 bims. ...	6 0-12 0
Carrots, 12 bims. ...	2 0-2 6	Odontoglossum crispum, 12 bims. ...	3 0-6 0
Chrysanthemums, 12 blooms ...	1 0-5 0	Pelargonium, scarlet, per 12 bu. ...	4 0-6 0
— 12 bunches ...	3 0-12 0	— 12 sprays ...	0 6-1 0
Cloves, per dozen blooms ...	2 0-2 6	Roses, Tea, per dozen ...	1 0-3 0
Eucharis, per dozen ...	5 0-7 0	— coloured, dozen ...	2 0-4 0
Gardenia, per dozen ...	4 0-6 0	— yellow (Maréchal), per doz. ...	4 0-6 0
Heliotrope, 12 sprays ...	0 6-0 9	— red, per dozen ...	1 6-2 0
Hyacinths, 12 sprays ...	0 6-1 0	Tuberose, 12 bims. ...	0 4-0 9
Lilac, white (French), per bunch ...	6 0-8 0	Violets, Parme, per bunch ...	3 6-4 0
Lilium Harrisii, doz. ...	4 0-6 0	— Czar, per bunch ...	2 0-2 6
Maiden Hair Fern, 12 bunches ...	4 0-9 0	— English, 12 buns. ...	1 0-1 6
Mignonette, doz. bun. ...	1 6-2 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s.d. s.d.		s.d. s.d.	
Adiantums, per doz. ...	4 0-12 0	Erica hyemalis, per dozen ...	12 0-18 0
Aralias, per doz. ...	6 0-12 0	Ferax, various, doz. ...	4 0-9 0
Aspidistra, per doz. ...	18 0-63 0	— small, per 100 ...	8 0-15 0
Begonias, per doz. ...	4 0-6 0	Ficus, each ...	1 6-7 6
Bouvardia, per doz. pots ...	9 0	Scarlet Pelargonium, per doz. ...	4 0-6 0
Chrysanthemums, per dozen ...	6 0-9 0	Heliotrope, per doz. ...	4 0-6 0
— large, each ...	2 0-3 6	Marguerites, per doz. ...	4 0-12 0
Coleus, per dozen ...	3 0-6 0	Palms, various, each ...	2 0-21 0
Cyclamens, per doz. ...	9 0-18 0	— specimens, each ...	10 6-84 0
Cyperus, per dozen ...	4 0-10 0	Roman Hyacinth, p. doz. pots ...	12 0
Dracaenas, each ...	1 0 5 0	Solanums, per dozen ...	9 0 12 0
Epiphyllums, p. doz. pots ...	9 0	Tulips, per doz. pots ...	9 0
Erica gracilis doz. ...	8 0-12 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

s.d. s.d.		s.d. s.d.	
Artichokes, Globe, each ...	0 4-0 6	Lettuces, per doz. ...	1 0-1 6
Beans, French, lb. ...	0 6 1 0	Mushrooms, punnet ...	2 0-...
Beet, red, per dozen ...	2 0-3 0	Mustard and Cress, punnet ...	0 4-...
Carrots, per bunch ...	0 4-0 6	Parsley, per bunch ...	0 3-0 6
Cauliflowers, each ...	0 3-0 6	Shallots, per lb. ...	0 6-...
Celery, per bundle ...	1 0-3 0	Spinach, per bushel ...	3 6-...
Cucumbers, each ...	0 6-0 9	Tomatos, per lb. ...	0 9-1 3
Endive, per dozen ...	2 0-3 0	Turnips, per bunch ...	0 4-0 6
Herbs, per bunch ...	0 9-1 0		

POTATOS.

Heavy arrivals and mild weather have had the effect of lowering prices for all kinds. There is an indication to put prices still lower for next week. Stocks increasing. J. B. Thomas.

SEEDS.

LONDON, Dec. 2.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., report a American Red Clover seed dearer. Rather more doing in Trefoil. Alsike still scarce; white held for full prices. Ryegrasses, owing to continued heavy export demand, exceedingly firm. Blue Peas strong, but with somewhat less excitement; higher quotations are confidently anticipated later on. Haricots still hardening. Canary and Hempseed both extremely steady. Millet unchanged. Linseed dull.

FRUITS AND VEGETABLES.

SPITALFIELDS: Dec. 1.—Quotations:—English Apples, 2s. to 5s. per bushel; American do., 10s. to 16s. per barrel; Pears, 1s. 6d. to 3s. per half-sieve; English Tomatos, 1s. 6d. to 6s. 6d. per peck; foreign do., 1s. to 1s. 6d. per box; Sea-kale, 1s. to 1s. 6d. per punnet; Cabbages, 1s. to 1s. 9d. per tally; Savoys, 2s. to 2s. 6d. do.; Cauliflowers, 5s. 6d. to 8s. do.; Greens, 1s. to 1s. 6d. per dozen bunches; Turnips, 1s. 6d. to 2s. do.; Carrots, 1s. to 2s. 3d. do.; Parsley, 1s. 6d. to 2s. do.; Spinach, 1s. 6d. to 1s. 9d. per bushel; Brussels Sprouts, 1s. 6d. to 1s. 9d. per half-sieve; Parsnips, 4d. to 9d. per score; Endive, 6d. to 1s. per dozen; Leeks, 1s. 6d. to 2s. do.; Cabbage Lettuce, 4d. to 8d. do.; Mustard and Cress 1s. 6d. to 2s. per dozen baskets; English Onions, 5s. to 5s. 6d. per cwt.; Bordeaux, 4s. to 4s. 9d. per case; Belgian do., 3s. to 4s. 6d. per bag of 110 lb.; Dutch do., 3s. 3d. to 4s. 6d. do.; Celery, 6d. to 1s. per bundle; Horse-radish, 1s. to 1s. 1d. do.

BOROUGH: Dec. 1.—Quotations:—Cabbages, 2s. to 3s.; Savoys, 2s. 6d. to 3s.; Broccoli, 5s. to 8s. per tally; Spinach, 2s. to 3s. per bushel; Turnips, 1s. to 1s. 6d.; Carrots, 1s. to 1s. 9d. per dozen bunches; English Onions, 4s. 6d. to 5s. per cwt.; do. Apples, 2s. to 6s.; Pears, 2s. 6d. to 7s. per bushel; Canadian Apples, 12s. to 25s.; Newtown Pippins, 18s. to 45s. per barrel.

STRATFORD: Dec. 1.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Cabbages, 2s. to 3s. per tally; Savoys, 3s. to 5s. do.; Greens, 1s. 3d. to 1s. 6d. per dozen bunches; Cauliflowers, 9d. to 1s. 6d. per dozen; do., 4s. to 7s. per tally; Turnips, 1s. 9d. to 2s. 3d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 36s. to 45s. do.; do., cattle-feeding, 25s. to 32s. do.; Parsnips, 60s. to 70s. per ton; Mangels, 14s. to 18s. do.; Swedes, 18s. to 25s. do.; Onions, English, 90s. to 125s. do.; do., Dutch, 4s. to 4s. 9d. per bag; do., Bordeaux, 5s. 3d. to 6s. per case; do., Oporto, 7s. 6d. to 8s. do.; Apples, English, 2s. to 6s. per bushel; American, 12s. to 20s. per barrel; Celery, 6d. to 1s. per roll; Brussels Sprouts, 1s. 3d. to 1s. 6d. per half-sieve; do., 2s. to 2s. 6d. per sieve.

POTATOS.

SPITALFIELDS: Dec. 1.—Quotations:—Magnums, 55s. to 70s.; Regents, 55s. to 65s.; Imperators, 60s. to 75s.; Hebrons, 60s. to 70s.; Snowdrops, 55s. to 75s. per ton.

BOROUGH: Dec. 1.—Quotations:—Hebrons and Elephants, 70s. to 90s.; Imperators, 60s. to 85s.; Bruces and Magnums, 70s. to 90s. per ton.

STRATFORD: Dec. 2.—Quotations:—Magnums, 60s. to 85s.; Elephants, 65s. to 85s.; Hebrons, 65s. to 80s.; Imperators, 65s. to 90s. per ton.

NOTICES TO CORRESPONDENTS.

ARTIFICIAL MANURE, NITRATE OF SODA, &c. A. P. Apply these when the crops are growing, or just before growth begins. Two or three applications may be made during the season of growth at intervals of a month or six weeks, and in showery weather. If there is much Clover in the grass, the use of nitrate will cause very rapid growth, and much of the grass would be smothered out of existence, probably. Which is the most valuable to you? Potash would be a better manure.

BOOKS: J. H. B., *Havre de pas*. Get *Select Ferns and Lycopods*, by the late B. S. Williams, Paradise & Victoria Nurseries, Holloway, London, N., where also it may be purchased, price about 5s.—BUTTER MAKING: A. Y. Z. *Dairy Farming, and Management of Cows*. By A. Roland. Chapman & Hall (Limited), London.

CANNOTS: D. G. Some of the stumpy thick Carrots, of recent introduction, are, as you say, deficient in thickness of outer layer of flesh, whilst the core is very large in proportion. We do not regard this as any improvement, but the reverse. If your soil is deep and good, grow Altringham, which is almost coreless; Long Surrey, and Coreless Long Red, which resembles the early Nantea variety, but is longer, and therefore more productive.

CHRYSANTHEMUMS: *Constant Reader*. The stems being of annual growth and duration, cannot be preserved to serve as a base for a future plant.—W. L. Send it to a nurseryman who makes the cultivation of these flowers a specialty.

CORRECTIONS: *Yeovil Chrysanthemum Show*. Mr. B. R. Davis, Nurseryman, of Yeovil, was credited with showing "12 dishes of fruits," whereas he showed 76, of which number 72 were Apples and Pears.—*Librarian and Assistant Secretary, Linnean Society*. We gave in Answers to Correspondents in our issue for November 28, the name of Dr. Murie, when it should have been J. E. Harting, Esq.

CUCUMBERS: T. H. The roots are infested by eel-worms, which are the cause of the death of the plants. There is no known cure. Clear out all

plants and soil, and make a fresh start with other kinds of soil and plants from a distance.

CYCLAMEN: *Constant Reader*. One of the garden forms of *C. persicum*.

DOUBLE-BLOSSOMING CHERRY: A. P. Either by budding or grafting; preferably the former in late summer.

EUCCHARIS AMAZONICA: W. A. S. The Eucharis Mite has attacked the bulbs. We know of no means of ridding the bulbs of these insects. Isolate the bulbs that are doing badly from the rest of the stock, or burn them.

FORESTRY JOURNAL IN LONDON: A. Mitchell. There is no weekly journal on forestry published in London; but a periodical appearing monthly, and called *Forestry*, is published by Anderson, 145, Queen Victoria Street, London, E.C. Price 1s. Forestry subjects are also pretty fully discussed in these columns. We do not know the address of the Secretary of the Society.

HOLLIES AND PAMPAS-GRASS: G. A. S. An excellent mode of planting the former is on raised beds or mounds. If the first-named plan be adopted, the bed should not be less than 20 to 25 feet in diameter, and it may be constructed in two terraces or levels, the larger plants, golden or green, being planted wide apart on the top one, and golden Euonymus, or small golden variegated Conifers, mixed Gold and Silver Hollies, Privet, &c., on the lower one. The retaining sides of the terraces should be formed of stout tarves, and should be given a "batter" sufficient to prevent their slipping down. This mode of making a Holly-bed is fit only for geometrically-formed parterres, the central object in a carriage-sweep, or a position but slightly removed from some architectural object. A more natural way is to plant on a gentle eminence (artificial or otherwise), planting the Hollies 8 to 10 feet asunder, and turfing the ground to within 3 feet of the stems. The Pampas-grass looks best in a group consisting of 5 to 9 plants, with sufficient space between them to prevent crowding for many years to come. The spot should be a sunny one, and the land in good heart, and very efficiently drained, as to have large plants in a short time liquid-manure in large quantities should be afforded them in the summer.

LIME AND FARM-YARD DUNG: A. P. Mix lime with the dung, if you want rapid decomposition. But this is best done in the compost-heap. Do not apply fresh lime to your lawn or grass-land.

MUSCAT VINE: *Hortus*. If the proposed stock for the Muscat is vigorous, inarch one or two Muscat Vines on it in the summer, using half-ripened shoots on stock and graft. The edges of the two surfaces must coincide exactly. The older wood may also be inarched when the Vine has made a few leaves in the spring.

NAMES OF FRUITS: *Full*. 1, Brownlee's Russet; 2, Golden Russet; 3, Schoolmaster; 4, French Crab; 5, Claygate Pearmain; 6, Alexandre Lambre; 7, not recognised; 8, Washington.—W. Parker, 1, decayed; 2, Josephine de Malines; 3, Winter Crassane; 4, not recognised; 5, Bishop's Thumb; 6, Lord Grosvenor; 7, Tom Putt; 8, New Rock Pippin.—A. F. 3, Jolly Beggar; 4, Tower of Glamis; 6, Waltham Abbey Seedling; 7, not known.—C. P. Lee, 1, Mère de Ménage; 2, Kentish Codlin; 3, Braddick's Nonpareil; Pear Uvedale's St. Germain.—James Young, 1, Kirke's Lord Nelson; 2, Tom Putt.—W. Austin, 1, Beurré d'Aremberg; 2, Winter Nelis; 3, Winter Crassane.—D. C., Hereford, 1, Rymer; 2, Golden Reinette; 3, not recognised; 4, Minchall Crab; 5, Gravenstein; 6, Grange's Pearmain.—B. Middleton, 1, Beurré Boac; 2, Vicar of Winkfield; 3, Bergamotte d'Espere; 4, Eyewood; 5, Triomphe de Jodoigne; 6, Duchesse d'Angoulême.—A. Woodgate, 1, Beachamwell; 2, Pigénette; 3, Franklin's Golden Pippin; 4, Fearn's Pippin.—W. Guy, 1, Besspool; 2, Pine Golden Pippin; 3, Dutch Mignonne; 4, London Pippin.—*Quintin Read*. The number you have sent far exceeds our utmost limits: 1, 2, Cox's Pomona; 3, Frogmore Prolific; 4, 9, 15, 23, Dumelow's Seedling; 5, 6, Hawthornden; 7, 10, 12, 16, Claygate Pearmain; 11, 12, Cox's Orange Pippin; 8, Sturmer Pippin; 17, 20, Court Pendu Plat; 14, Minchall Crab; 24, Red Quarrenden.

NAMES OF PLANTS: J. Robinson. *Adiantum cuneatum mundulum*, *Nephrodium molle* (not British).—L. C., Rugby, 1, *Cattleya superba*; 2, *Cattleya luteola*; 3, *Oncidium Phalaenopsis*.—A. A. Epiden-

drum pnsillum, new species. See p. 669.—*Oxon.*
Epidendrum ciliare, *Dendrobium palpebrae*.—*H. J. R.* 1, *Laelia pumila*; 2, *Laelia pumila* Day-
 ana; 3, *Cattleya Walkeriana*, if not of dwarf
 growth; if dwarf, aend specimen of growth; 4,
Miltonia Russelliana; 5, *Oncidium aurosum* (ex-
 cavatum); 6, *Cypripedium longifolium*.

PALM LEAVES DISEASED: *H. D. H.* The leaves are
 attacked by a destructive fungus, *Pestalozzia*
phoenicea; see *Gardeners' Chronicle*, October 4,
 1884, p. 429. Cut off and burn all affected parts.

PANCRATIUM ILLYRICUM NOT GROWING: *Hortus.* No
 effort should be made by using heat to force out
 roots; better results would follow keeping the
 bulbs cool and moderately moist; and if it keep
 sound, roots will form. Slightly scoop out the
 base of the bulb, or make two transverse slits
 in it.

PRIMULAS: *W. Dean.* The varieties sent are very
 robust in growth, flowers large, and colours
 pleasing.

QUINCES IN THE PLEASURE-GROUNDS: *P. A.* They
 are beautiful bushes when in bloom, and the fruit is
 always in demand. We wonder why people seldom
 think of planting them in their pleasure-grounds
 and gardens. The Quince likes a warm, open spot,
 in well-drained land. Do not be satisfied with
 one specimen only.

RATING MARKET GARDENS: *T. C.* See *Gardeners*
Chronicle, vol. i., 1877, pp. 422 and 650 (Purser
 v. Worthing Local Government Board); and
 Purser's Appeal, p. 676, same vol.

RHODODENDRON MADDENI GRAFTING: *A. P.* The
 stocks—common *R. ponticum* or *R. catawbiense*—
 should have been at least one year in pots. The
 mode of grafting: side, crown, or tongue. Time:
 the spring, in a cool-house, with scions of the
 previous year's growth; or late in the summer.
 Leave most of the leaves on the scion, and a leaf
 or two at the top of the stock; cover the point
 of union with grafting-wax, and keep the worked
 stocks in a close handlight or frame. Dew them
 over occasionally; see that the stocks do not want
 for water at the root, and shade from bright
 sunshine.

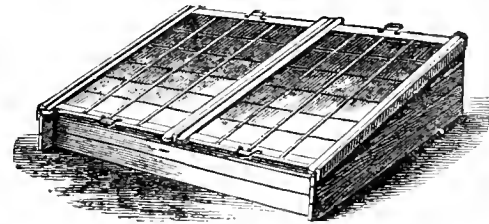
TENANT LEAVING NURSERY: *Seedsman.* Saleable
 nursery stock may be removed; and usually a
 year or more time is allowed for its removal. Old
 fruiting, and generally permanent trees and shrubs,
 must be left in the ground. The landlord is not
 obliged to pay you for them. You must also leave
 the greenhouse, if it be fixed with bolts or screws
 to the brickwork; but the heating apparatus is a
 trade fixture, and removable by the tenant.

TO MAKE A TUD OF URINE ODOURLESS: *Dido.* We
 do not think that you can do anything to remove
 the smell, unless you mix the urine with a large quantity
 of dry clayey loam, which will make in the dry
 state a good top-dressing for plants or turf. The
 kind of soil mentioned will absorb urine five or six
 times, if it be dried after each addition of the
 same. It is then a strong manure, and needs
 caution in its use.

WEEVILS AND MARGUERITES: *Brutus.* Both the
 grubs and the perfect insect are destructive to
 plants, the former living in the soil and gnawing
 the roots and underground parts of the stem, and
 the latter feeding at night on the leaves, tender
 shoots, and buds. The grubs are most difficult to
 rid soil of when it is planted; but gas-lime, soot,
 and salt dug into it after the crop is off, well
 exposing it to the air by after-forking over, so that
 the birds can destroy the grubs, is as good a
 remedy as any. In the case of the beetles, you
 must search for them at night with a light; a dark
 lantern is best. Spread a white cloth or piece of
 paper under the plants, and then turn on the light.
 The weevils will drop suddenly on to the cloth,
 and try to escape. You must be quick, and catch
 as many as you can. Repeat this nightly, and you
 will considerably thin their numbers. Scalding
 water thrown into chinks, cranies, and under
 stones and clods, where the weevils hide, will kill
 many more.

COMMUNICATIONS RECEIVED.—*W. Treseder.*—Messrs. Webb &
 Sons.—Messrs. Proctor & Ryland.—*T. W. H.*—*E. J.*—*E. S.*
Gunn.—*Cassells & Co.*—The *Queen*.—Constant Reader.—
H. Damman, Jr.—*Americans.*—*W. J. G.*—*C. R.*—*J. J. W.*
J. F. H.—*T. L.*—*W. P. B.*—*J. Howard.*—*G. M.*—*L. C.*—
J. G.—*A. P.*—*R. A. R.*—*W. E. D.*—*A. D.*—*W. P. Andersen.*
Jonkoping.—*J. H.*—*J. W. G.*—*Paul.*—*W. Sutherland.*—
C. Wissenbach.—*Cassel.*—*G. W. D'Arcy.*—*Bernard Cowan* (too
 late for this issue).—*I. Mahling.*—*E. C.*—*T. N.*—*J. Brown.*
William Herne.—*E. Gilman.*—*A. G. G.*—*Bourne & Son.*

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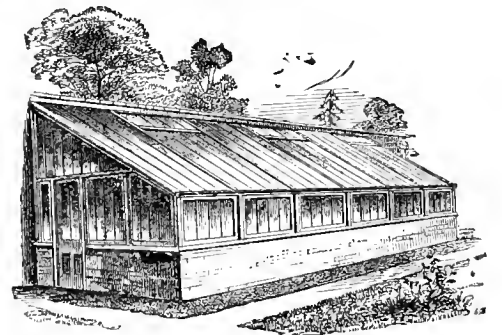
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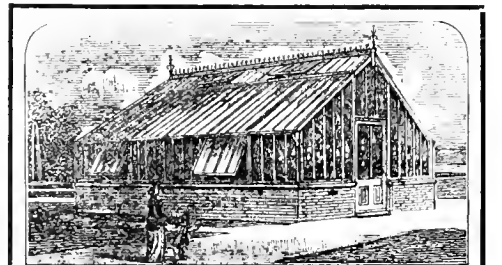
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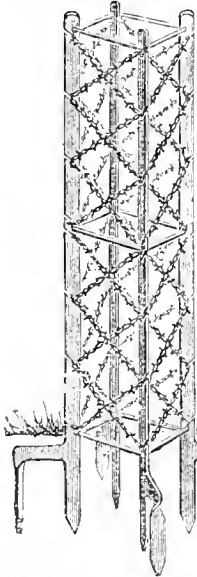
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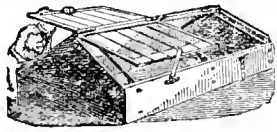
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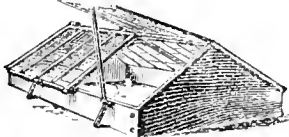
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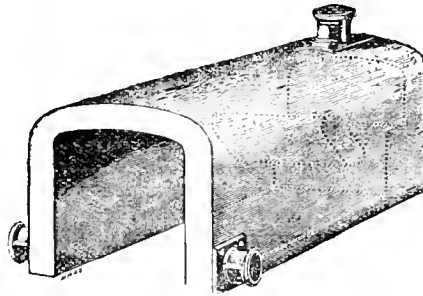
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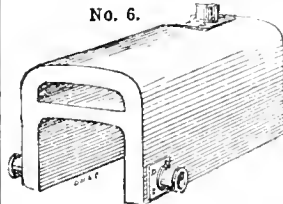
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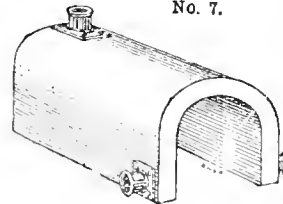
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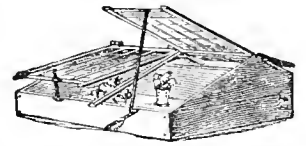
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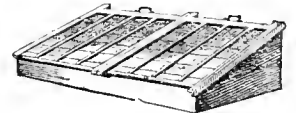
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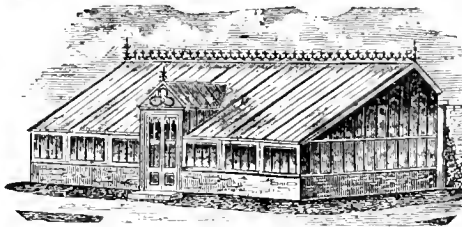
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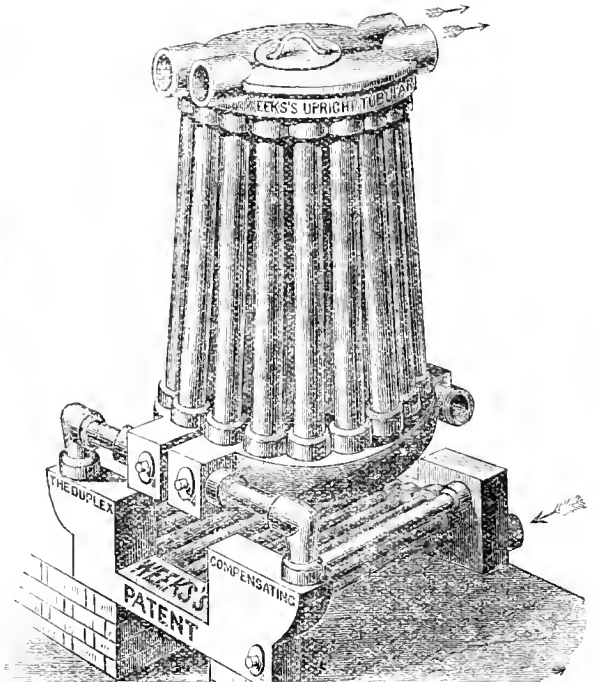
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PALMS.—For CHRISTMAS.—PALMS.—Silver's Special Offer for Christmas, Church, and Room Decorations: 12 **Latania borbonica** (the Fan Palm), beautiful plants, 1½ to 2 feet high, for 10s.; 2 (or 2½ feet high, 15s. Package and packing free for Cash with Order. **J. W. SILVER,** Streatham and Norbury Nurseries, S.W.

POT ROSES.—A Bargain; room wanted.—Several thousand **Niphetos, Catherine Mermet, Perle des Jardins, Isabella Sprunt, Madame Falcot, Safrano, Souvenir d'un Ami, and Marie Van Houtte.** Splendid stuff. Established in 8 and 11-inch pots. Inspection invited. Price 45 and 46 per 100. **GUYVER BROS. AND LAWSON,** Durant's Nursery, Ponder's End, Middlesex.

J. WEEKS AND CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the **Duplex Upright Tubular Boilers.** King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—**Mr. GEORGE,** 10, Victoria Road, Putney. **WM. THOMSON AND SONS,** Clovefords, Galashiels, N.B.

SALES BY AUCTION.

Wednesday and Saturday Next. 1,000 choice-named Standard and Dwarf ROSES, 500 FRUIT TREES, 500 AZALEA MOLLIS from Ghent; a fine collection of BORDER PLANTS, collections of STOVE and GREENHOUSE PLANTS, LILIUM AURATUM from Japan, L. CANDIDUM, L. HARRISI, LILY OF THE VALLEY Crowns, SPIRÆA, GLADIOLI, AMARYLLIS, TUBEROSES, Ornamental LAURELS, CONIFERS, EVERGREENS, and a large quantity of DUTCH BULBS.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY and SATURDAY NEXT, December 16 and 19, at half-past 12 o'clock precisely each day. On view mornings of Sale, and Catalogues had.

Thursday Next. SPECIAL SALE OF DUTCH BULBS, LILIUMS, TUBEROSES, and VARIOUS ROOTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 17, at half-past 12 o'clock precisely, 600 lots of HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS; 29,000 TUBEROSES from America, 25,000 TUBEROSES and AMARYLLIS from South Africa, 10,000 SPIRÆA JAPONICA, 5,000 LILY OF THE VALLEY, 5,000 LILIUM CANDIDUM, LILIUM AURATUM from Japan, IRIS KEMPFERI, choice NARCISSUS, DAFFODILS, home-grown LILIUMS, GLADIOLI, BEGONIAS, FRESIAS, and RAUCARIA EXCELSA, BORDER PLANTS, &c. On view morning of Sale, and Catalogues had.

Tuesday Next. 14,850 LILIUM AURATUM, being the whole consignment of 200 cases, just to hand, and including 450 unusually large roots;

3,000 LILIUM HARRISI, fine bulbs; 2,500 double African TUBEROSES, together with a splendid collection of hardy LILIES embracing all the principal and most popular varieties in cultivation; a large number of Cactus, Single and Pompon DAHLIAS, of the best-named kinds; CARNATIONS, PICOEAS, PEONIES, EURETHYMS, IRIS, double HOLLYHOCKS, Berlin Crowns LILY OF THE VALLEY, PERENNIALS, in great variety; HELLEBORUS, thousands of HARDY BULBS, DAFFODILS, ANEMONES, BEGONIAS, GLOXINIANS, and 100 lots of HYACINTHS, TULIPS, and other DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 15, at half-past 11 o'clock. On view morning of Sale, and Catalogues had.

Charlton Nursery, near Shepperton. One mile from the Shepperton Station, L. & S. W. Railway. IMPORTANT CLEARANCE SALE. To Gentlemen, Fruit Growers, and others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Bristow, who is relinquishing the Business, to SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY NEXT, Dec. 15 and 16, at 12 o'clock each day, without reserve, the whole of the valuable NURSERY STOCK, consisting of about 15,000 choice Evergreen and Coniferous Shrubs, 600 Privet, 5000 Standard and Dwarf Roses, in great variety, including the finest kinds in cultivation; a good assortment of Ornamental Trees, and 10,000 Fruit Trees, including quantities of the best Market kinds of Apples, Pears, and Plums, and a large number of Gooseberries, Currants, Peaches, and Apricots, of special attraction to Fruit Growers.

Also, the LEASEHOLD NURSERY and FRUIT FARM, of about 37 Acres, with Cottage, Buildings, and Greenhouse, held for 15 years unexpired, at a Low Rental.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Dutch Bulbs.—Sales Next Week.

MESSRS. PROTHEROE AND MORRIS beg to draw attention to their large SALES of DUTCH BULBS for next week, to take place as follows, at half-past 11 o'clock each day, including thousands of HYACINTHS, TULIPS, CROCUS, NARCISSUS, &c., arranged in Lots to suit large and small Buyers. The whole to be sold absolutely without reserve.

- MONDAY, December 14, 800 lots.
TUESDAY, .. 15, 100 lots.
WEDNESDAY .. 16, 300 lots.
SATURDAY .. 19, 400 lots.

On view morning of Sale, and Catalogues had, Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

Wednesday Next. 100 CAMELLIAS, 200 AZALEA INDICA, and 100 A. MOLLIS from Belgium, 40 lots of choice greenhouse and stove FERNS, PALMS in variety; fine plants of LAPAGERIA RUBRA and MACULATA; a splendid collection of double and single BEGONIAS, English-grown roots; 300 standard and dwarf ROSES, LILIUM HARRISI, English-grown LILIES in variety, LILY OF THE VALLEY; 300 lots of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS; 100,000 KENTIA SEEDS, and 67,000 COCOS SEEDS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 16, at half past 11 o'clock. On view morning of Sale, and Catalogues had.

Wednesday Next. IMPORTANT CONSIGNMENT OF PALM SEEDS. 50,000 KENTIA FORSTERIANA. 50,000 BELMORANA. 67,000 COCOS WEDDELLIANA.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, December 16. On view morning of Sale, and Catalogues had.

East Dulwich, S.E.—Wednesday Next, December 16. (Close to East Dulwich Railway Station.)

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Orchid Nurseries, East Dulwich, London, S.E., on WEDNESDAY, December 16, at half-past 12 o'clock, by order of Messrs. Seeger & Tropp, a fine lot of ESTABLISHED HEALTHY ORCHIDS, among which will be included many exceedingly well-grown specimens and half-specimens, also choice new, and rare species and varieties; a specially large number of Orchids in bud or flower; a great quantity of semi-established Orchids most useful for cut flower purposes, and a collection of VANDAS, numbering about 65 plants, embraced in which are unique specimens and special varieties, such as TRICOLOR ROLLESSIONI, T. DALKETH VARIETY, T. PANIUBATA, T. PATERSONI, T. CINNAMOMEA, T. NIVEA, T. TIGRINA, SUAVIS VEITCHI, BATEMANNI, STORIEI, KIMBALLIANA ANESTIANA, CATHCARTI, GIGANTEA, COCCINEA, TERES, PARISHI, CHERULESCENS, STANGIANA, and many plants of TRICOLOR and SUAVIS that have not yet flowered in Europe, as to which it may be relied on that no two will be alike. These already flowered have proved to be each different, and one of them entirely yellow. Any Gentleman about forming a collection of Vandas will find this an exceptional opportunity to acquire a great variety of really excellent plants for immediate effect, and a special visit to the Nurseries (which are distant only 12 minutes by train from London Bridge Station, L. B. & S. C. Ry.), is invited, to inspect this marvellous group, if for that purpose only. It can be asserted with confidence that never before has such a perfectly grown and healthy lot of Vandas been submitted for public competition. In the event of the lot as catalogued failing to find a purchaser, the plants will be sold individually.

Plants will be on view the morning of sale. Catalogues had on the premises and of the auctioneers, 67 and 68, Cheapside, London, E.C.

The Orchid Nurseries are within five minutes walk of East Dulwich railway station, L. B. and S. C. Railway.

Should frost prevail on the day of sale, the plants purchased may remain in the care of Messrs. Seeger and Tropp until the weather is favourable for their despatch.

Balham.—Clearance Sale. Close to Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Balford Hill Nursery, Larch Road, Balham, on THURSDAY NEXT, Dec. 17, at 1 o'clock, without reserve, 7 Span-roof GREENHOUSES, 1300 feet of 4-inch Hot-water PIPING, BOILER, BRICK-WORK; also the stock of GREENHOUSE PLANTS, including a fine lot of specimen White Azaleas and Camellias, Flower Pots, &c.

On view two days prior to the Sale. Catalogues had on the Premises; of Messrs. MARCHANT and BENWELL, Solicitors, Broadway, Deptford, and 2, George Yard, Lombard Street, E.C., and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—THE FREEHOLD NURSERY is to be SOLD for building purposes.—Particulars of the Auctioneers.

Friday Next. GREAT SALE OF ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 18, at half-past 12 o'clock.

Another Importation of Lindley's OLD LABIATA, from far beyond Swainson's hunting-grounds, and from a much higher elevation. Also

The OLD LABIATA, established and semi-established. The OLD LABIATA, in sheath.

GARDNER'S LABIATA, Semi-established, unflowered, grand plants.

Every plant will be offered, collected by the late W. Dujance fifteen days before his death from yellow fever. This is an early autumn-flowering labiata, very free, very beautiful, and not surpassed by any member of the family.

It must not be confounded with any other labiata. Also a grand lot of CYPRIPEDIUMS, many being fine Specimen Plants, and many new hybrids.

- New and rare MASDEVALLIAS,
New and rare DENDROBIUMS,
New and rare EPIPEDIUMS,
new CATTLEYAS, new PHAJUS, new SPATHOGLOTTIS,
New and rare CYMBIDIUMS, from the Himalayas.
Cool ORCHIDS, in bud and bloom.
Warm ORCHIDS, in bud and bloom.

On view morning of Sale, and Catalogues had.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE on FRIDAY NEXT, December 18,

A magnificent lot of splendidly-grown CYPRIPEDIUMS, the property of a gentleman giving up the cultivation of these plants.

Amongst them are grand specimens of the following:—

Table with 2 columns: Cypridium Boxallii and Cypridium Morganii. Lists various species like caricinum, cardinale, concolor, Dautherrii, Ibris, Elliotianum, Harrisianum, hir-sutum, Haynaldianum, miridissimum, Rothschildianum, Schlimi, Schomburgkianum, Sedoni porphyreum, Spicerianum, superbiens, villosum, Weidlichianum.

And many fine plants of other choice and rare varieties. On view morning of Sale, and Catalogues had.

Friday Next.—Orchid Sale.

MESSRS. PROTHEROE AND MORRIS will also include in above SALE, a fine lot of GLORIOSA SUPERBA and IPSEA SPECIOSA, which will be Sold, without reserve.

Friday, January 8, 1892. PRELIMINARY ANNOUNCEMENT.

LINDEN'S GRANDEST DISCOVERY: CATTLEYA REX, JAMES O'BRIEN.

THE MOST FAMOUS ORCHID EVER INTRODUCED. J. LINDEN, the discoverer and first introducer of nearly all the finest Cattleyas in cultivation, viz., CATTLEYA AUREA, AMETHYSTOGLOSSA, GIGAS, ELDOBRADO, TRIANÆ, WAROCQUEANA (LABIATA AUTUMNALIS), &c., confidently recommends—

CATTLEYA REX as the FINEST OF THE GENUS.

CATTLEYA REX FLOWERS IN DECEMBER and JANUARY. Some amateurs have stated CATTLEYA REX to be a grand form of Cattleya aurea, with white sepals and petals, but it is a QUITE NEW TYPE.

CATTLEYA REX is described by JAMES O'BRIEN in the Gardeners' Chronicle, December 13, 1890.

Sepals and petals are creamy-white. The labellum is of the richest crimson, of various shades—from the rosy hue to the purple tint—veined in a beautiful manner with golden-yellow, all worked in to form a richly-colouring marbling. "It is a Wonderful Piece of Colouring."

Mr. R. JOHNSON, Stund Hall Gardens, Whitefield, Manchester, writes to Messrs. LINDEN:—

"The CATTLEYA REX has flowered with us, and a grand thing it is. We have had some of the principal importers of Orchids here to see it; they think your plate in Lindena (English edition, Part I., 1891) a true representation of the flower, but the lip of our flower is FINER than your Plate."

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Messrs. LINDEN, L'Horticulture Internationale, Brussels, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY January 8, 1892, at half-past 12 o'clock, the whole of the above importation, just to hand in capital condition.

The plants have been collected by Messrs. Linden's intrepid collector, M. C. Ellner, with the greatest difficulties, who has searched with hundreds of natives for two years after this grandest Cattleya, and only succeeded in discovering those offered.

He states that "it is impossible to find any more." A portrait made from a plant flowered in Monsieur Warocque's collection will be on view on the day of Sale.

On view morning of Sale, and Catalogues had.

Orchids in Flower for Christmas Decoration.

THOMAS B. JAMES (many years with Protheroe & Morris) will SELL by AUCTION at his Commodious Sale Rooms, Bull Ring, Birmingham, on TUESDAY, December 22, at half-past 12 o'clock, 300 lots of ORCHIDS (every plant being in flower or bud) for Christmas decoration. Growers desirous of including are requested to send list per return.

T. B. JAMES holds SALES every WEDNESDAY and FRIDAY, at half-past 4 o'clock P.M., of CHOICE CUT FLOWERS. Further consignments of good bloom solicited. Good market empties and labels found. HOLLY, MISTLETO, and CHRISTMAS TREES wanted in the course of a few days.

T. B. JAMES holds SALES at his ROOMS every TUESDAY and THURSDAY, at half-past 11 o'clock A.M., of BULBS, STOVE and GREENHOUSE PLANTS, PLANTS from BELGIUM, GENERAL NURSERY STOCK, &c. Bankers, London and Midland, Birmingham.

To Market Gardeners. TO BE LET, 50 Acres of good LAND, Small House, and suitable Buildings.—Apply by letter, to D. C. THOMPSON, Esq., Squirrel Heath, near Romford, Essex.

TO BE LET, 14 miles from London, on the Bath Road, HEATHROW FARM, Harmondsworth, Middlesex, from Michaelmas next; contains 438 acres of good Arable and 44 of Meadow Land. Let as a whole, or divided into three or four Market Gardens. The House and Buildings are 3 miles from West Drayton and Hayes Stations (G. W. R.), also Feltham and Ashford Stations (S. W. R.). No Agents need apply.

For particulars, apply to WALTER C. RICHMOND, Wrotham Park Estate Office, Burnet, Herts.

TO BE LET, A FRUIT FARM, at Orpington, Kent, with IMMEDIATE POSSESSION, comprising 72½ acres, of which 18 acres are Gooseberries and Currants, in full maturity; 8½ acres Hops, and the remainder Meadow and Arable Land.

Full particulars of Messrs. HUMBERT, SON, and FLINT, 11, Serle Street, Lincoln's Inn, W.C.

KENT.—TO BE SOLD, an excellent compact MARKET NURSERY, with between 18,000 and 19,000 feet of modern Glass, well-heated, situated in one of the best districts for growing Plants and Fruit for Market.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

TO BE DISPOSED OF, the long LEASE of a HOUSE and SHOP, in a leading thoroughfare, in one of the principal South Coast Watering places, capital opening for a Florist.

For information as to Rent, Premium, &c., address, ALPHA, Gardeners' Chronicle Office, 11, Wellington St., Strand, W.C.

PICTURESQUE ROCK SCENERY.—Forming Waterfalls, Lakes, and Streams, Ferneries, Winter Gardens, Alpineries, &c., as in hundreds of places about the kingdom, including at Aldenham House, Elstree, so faithfully illustrated in this journal of November 21, executed by PULHAM and SON, 50, Finsbury Square, London, E.C., and Broxbourne, Herts. Photo Illustrated Book sent for inspection on receipt of twelve stamps.

THE GARDENERS' ORPHAN FUND.

THE FOURTH ELECTION of Eleven Children to the Benefit of this Fund, consisting of an allowance of 5s. per week (subject to the Conditions stated in Rule XIII.), will take place on FRIDAY, FEBRUARY 5 next, at the CANNON STREET HOTEL, LONDON, E.C.

All Applications must be made on a proper Printed Form, Copies of which may be had gratis from the Hon. Secretary, or from any of the Local Secretaries. Such Form must be correctly filled up, duly signed, and returned to this Office not later than Monday, January 4, 1892.

A. F. BARRON, Hon. Sec. Royal Horticultural Society's Gardens, Chiswick.

THE TOWER FURNISHING COMPANY (Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.

Myatt's Prolific Kidney Potatoes. W. JOHNSON AND SON, SEED GROWERS and MERCHANTS, Boston, offer the above in quantity. Price on application.

ORCHIDS A SPECIALTY. Please write for New Illustrated Price LIST of well-selected, healthy, and easily-grown plants. W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N. Nursery, Orchard Road.

ARAUCARIA IMBRICATA SEED. Splendid Sample from the fine Specimens of Piltown, about 50 lb., averaging about 150 to the pound. Price, 3s. per pound for cash. D. BOOTH, Piltown, Uckfield.

MR. COOPER, F.R.H.S., of Western Elms, Reading (late of Calcut Gardens), is the Largest Grower of PRIZE COB FILBERT TREES for SALE, in the Kingdom. 20,000 good Trees now ready for distribution. Descriptive Price LISTS, &c., on application.

DOBIE'S CATALOGUE and COMPETITORS' GUIDE for 1892.—25th Annual Edition, 160 pages, illustrated. Described by one of the greatest authorities in England as "the most useful list published in the trade." Will be ready on January 1, and will be sent gratis then to all who apply for it before Christmas, and enclose 3d. to cover postage.—DOBIE AND CO., Seed Growers and Florists, Rothsay, Scotland.

To Noblemen and Gentlemen Planting. FOR IMMEDIATE DISPOSAL, large LAURELS, of sorts, bushy, from 4 ft. high and upwards; SCOTCH FIR, from 2 feet 6 inches to 8 feet; SPRUCE, PINUS AUSTRIACA, PINUS LARICIO, Red-twigged LIMES, CHESTNUTS, OAK, ASH, SYCAMORE, WALNUT, YEW, &c. Fine staff for instant effect. As the ground must be cleared this Autumn, no reasonable offer refused. All goods free on rail. C. F. MILLAR, The Nurseries, London Road, Chippenham.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, Have just Purchased, and are now OFFERING for SALE, the MYTON COLLECTION OF ORCHIDS, WHICH INCLUDES A splendid lot of CYPRIPEDIUMS, A splendid lot of CATTLEYS, A splendid lot of ODONTOCLOSSUMS, A splendid lot of DENDROBIUMS, A splendid lot of LÆLIAS, A splendid lot of ONCIDIUMS, A splendid lot of other ORCHIDS in variety.

All in the very Finest Health and Condition. INSPECTION INVITED. DESCRIPTIVE and PRICED CATALOGUE free, on application to the Company. THE VINEYARD & NURSERIES, GARSTON, near LIVERPOOL.

FOR ORCHIDS, and GARDENERS to Grow Them, apply to SANDERS, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

Chrysanthemums. BOYCE'S CHRYSANTHEMUM GUIDE and CATALOGUE contains Complete Directions upon Cultivation; also, List of the Best Varieties. Price 4d. (returned in first order). Many thousands of Rooted Cuttings ready in February, from 2s. per doz. Orders booked now. W. E. BOYCE, F.N.C.S., Archway Road, Highgate, N.

CURRENT TREES and RASPBERRY CANES. Dutch and Ruby Castle Red CURRANT, strong 2-yr.-old Trees, 10s. per 100; sample dozen, 2s. 6d. RASPBERRY CANES, best varieties, 35s. per 1000; sample 100, 5s., free on Rail. Wisbech P.O.O. with Order to Manager. R. BATH, Fruit Farms, Wisbech.

Trade Offer of Large Palms. W. ICETON has a large Stock of the leading kinds of Decorative PALMS, from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracynas, Bamboos, & Foliage Plants. Lowest Prices quoted on application. W. ICETON, Putney, S.W.

NARCISSUS, Grand Monarque.—Splendid Bulbs, 55s. per 1000, 6s. 6d. per 100; Soleil d'Or, 35s. per 1000, 4s. per 100; Scilly White, very early, 50s. per 1000, 6s. per 100; Poeticus, 6s. per 1000, 9d. per 100; Double Incomparable, 25s. per 1000, 3s. per 100; Double White, pure, 20s. per 1000, 3s. per 100; Single Sweet-Scented Jonquils, fine large bulbs, 20s. per 1000, 2s. 6d. per 100; Double Daffodils, 20s. per 1000, 2s. 6d. per 100; all true, sound stuff. Carriage paid by rail or steamer, in England, on 20s. Orders, Cash, Packing free. PONTEY'S Bulb and Seed Warehouse, 21, Cornwall Street, Plymouth. (Established nearly a Century.)

KENTIA SEEDS.—The following, in splendid condition, just arrived from our Collector:— KENTIA FORSTERIANA, 16s. per 1000. " BELMOREANA, 16s. per 1000. " CANTERBURYANA, 9s. per 1000. SEAFORTHIA ELEGANS, 10s. per 1000. ARECA BAUERI, 10s. per 1000. HOOPER AND CO., LTD., Covent Garden, London, W.C.

New Apple, Chelmsford Wonder. SALT MARSH AND SON, The Nurseries, Chelmsford, are now sending out this splendid NEW KITCHEN APPLE, which, after receiving an Award of Merit in March last, has had an additional award of a First-class Certificate at the meeting of the Fruit Committee of the Royal Horticultural Society on November 10. It is a firm, handsome Apple, of large size, a good keeper, great bearer, and of superior flavour when cooked. It was favoured with a well-executed illustration, together with a faithful description, in the Gardeners' Magazine of April 11, copies of which may be had on application. Strong Maiden Trees are now ready at 5s. each, with the usual discount to the Trade.

Special Cheap Offer to the Trade and large Planters. ISAAC MATTHEWS AND SON have large quantities of the under-mentioned trees to offer cheap:—100,000 RHODODENDRONS, Early, White, Scarlet, Pink, and other varieties, fine plants; and 500,000 Ponticum and Seedling Hybrids, various sizes, from 1 to 1 feet, by the 100 or 1000; 500,000 THORN QUICK, four and six-year old, extra strong; COMMON ASH, 3 to 4 feet and upwards; MOUNTAIN ASH, 6 to 12 feet; BIRCH, 8 to 9, 9 to 10, and 10 to 12 feet; HORSE CHESTNUTS, from 2 to 10 feet; also a large quantity of Horse Chestnuts, 12 to 15 feet, and specimen trees for avenue-planting. ENGLISH YEW, ELMS, and HORNBEAMS, 8 to 10 feet; AUSTRIAN PINES, fine trees, 3 to 8 feet; recently-transplanted POPLARS, varieties, 6 to 12 feet; SPRUCE, for Christmas Trees, also for Forest Planting; ACCUBAS, HOLLIES, BOX, CUPRESSUS, IVIES, LAURELS, &c. CATALOGUES on application. The Nurseries, Milton, Stoke-on-Trent.

R. COLLYER, Cart House Lane Nursery, Woking Station, Surrey, begs to offer the following TREES and SHRUBS:— CUPRESSUS LAWSONIANA, 6 to 7 feet. " ERRECTA VIRIDIS, 4 to 7 feet. THUJA LOBBII, 5 to 7 feet. THUIOPSIS BOREALIS, 4 to 5 feet. THUJA ARBOR-VITÆ, 7 to 8 feet. HOLLY, COMMON, 3 to 7 feet, stout. " Standard and Half-Standard, Waterer's Golden smooth-leaf, with nice round heads (15 to 20 years' growth). ENGLISH YEW, 3 to 5 1/2 feet, well-grown plants. SPRUCE FIRS, 2 to 4 1/2 feet. POPLARS, Canadensis Nova, 14 to 18 feet. LIMES, 12 to 14 feet. SILVER BIRCH, 10 to 14 feet. THORNS, Standard and Pyramid, Paul's Double Scarlet, 7 to 9 feet. APPLES, 1 and 2 years, good sorts. May be seen any time; or, further particulars given on application. Satisfactory references required.

CHRYSANTHEMUMS. OWEN'S Descriptive and Priced CATALOGUE, Giving full Descriptions and Results after Flowering of English Seedlings, carefully selected from thousands; also Sports, American and Continental Novelties, all carefully Selected after Blooming, only the very best in each section described; all inferior varieties discarded. The following Grand Novelties will be distributed (March):— Mrs. Robinson King, new golden yellow sport from Golden Empress, 5s.; Six First-class Certificates, 1891. Noël Pragnell, or Striped Empress of India, 3s. 6d. Prelude, or Striped Alfred Lyne, 3s. 6d. Miss Lillian Cope, or White Etoile de Lyon, 5s. Orders booked for above, and all other Novelties, and dispatched in strict rotation. CATALOGUE free. R. OWEN, Floral Nursery, Maidenhead.

FERNS! FERNS!—Trade Surplus Stock.—Greenhouse and Stove, 25 most saleable sorts, 12s. per 100; out of pots, 10s. Large Adiantum cuneatum, in 48's, bushy, 6s. per doz. Large Ferns, 10 most saleable sorts, Aralia Sebaldii, Primulas, Solanums, superior stuff, all in 48's, 5s. 6d. per doz. Palms, Ficus, Erica byemalis, and Cyclamen, in 48's, 12s. per dozen, for bloom and fine foliage cannot be better. Pteris tremula, and Adiantum cuneatum, selected bushy, for potting on, 12s. per 100. Packed free, Cash with Order. J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

To Florists. FRENCH FLOWERS, direct from the Gardens.—An enormous saving. ROSES, MIMOSA, MIGNONETTE, MARGUERITES, ORANGE BLOSSOM, &c. Sample basket, carriage paid to London, for 10s. Postal Order. The RIVIERA FLORAL SUPPLY, Nice.

ASPARAGUS, of fine quality—for forcing and planting: 2-yr. old, 2s. 3d. per 100; 3-yr. old, good roots, 3s. per 100; ditto, selected, 4s. per 100; 6d. per 100 less for quantities of 1000 and upwards. For forcing, 4-yr. old, 5s. per 100; 5-yr. old, splendid roots, 7s. 6d. per 100; ditto selected, 10s. per 100; 6-yr. old, extra fine, 12s. 6d. per 100. Cash with order. My Asparagus always makes top price at Covent Garden.

Read the following unsolicited testimonial:—"Please send me another 200 of 5-yr. old Asparagus Roots. I may say that the last 200 were the best lot of forcing roots I ever bought, and my employer says the quality is excellent.—C. H. PERKINS, The Gardens, Milton Abbey, Blandford." J. J. CLARK, Market Gardener, Goldstone, Brighton.

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For further particulars, see the *Gardeners' Chronicle*, February 7, 1891, p. 173; the *Gardeners' Magazine*, January 24, 1891, p. 52; February 21, 1891, p. 105; *The Garden*, January 25, 1890, p. 87; December 13, 1890, p. 761; *The Journal of Horticulture*, October 24, 1889, p. 261. Also Special Circular, with leading Grape-grower's opinions, may be had, post-free, on application.

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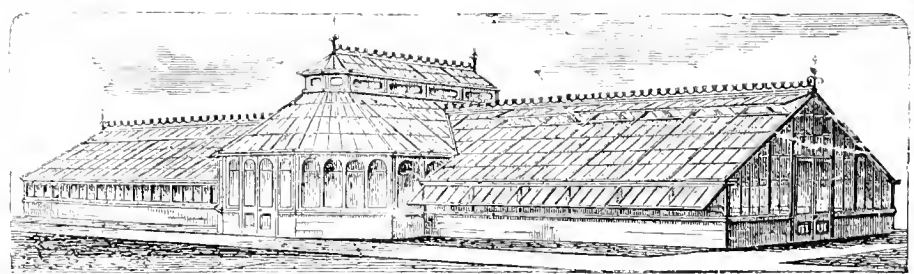
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Largest, Heaviest, Handsomest,

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It produced the Heaviest and Finest-Finished Three Dozen Specimens ever recorded, viz.:—

34 lb., 28½ lb., and 25 lb. respectively.

IN consequence of the late disastrous season for the Ripening and Developing of Onion Seed, my Crops of Pedigree Stocks proved almost an entire failure; especially does this apply to AILSA CRAIG, THE LORD KEEPER, ROYAL JUBILEE, COCOA-NUT, and ADVANCER, of which I have only a Few Hundred Packets to offer, saved from the finest possible Prize Bulbs, which may be obtained genuine in my Sealed Packets, from most of the leading Houses. Those who desire to obtain these Celebrated Stocks, should apply at once to their Seedsman, or direct to my Establishment at Banbury, as last year, when the Seed was more plentiful, I had sold out almost before the Season began.

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DEVERILL'S— IMPROVED WROXTON— 1s. 0d. & 1 6	

A description of the above varieties, as also particulars of the Gold Medal and other valuable Prizes to be awarded at Banbury, in Sept., 1892, will be found in my New SEED CATALOGUE, which will be ready in a few days, and forwarded to all applicants post-free.

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ARE CERTAINLY THE BEST SAVED AND SOLD IN ENGLAND.

Why? All our own growing, therefore true! On the best spot in Europe, and by the most expert hands, and who have an interest in the business. They are consequently cheaper; and many of our strains not touched by any other firm. As an instance—

THE COUNTY GENTLEMAN, *February 14, 1891*, says of our PRIMULAS shown at a meeting of the Royal Horticultural Society:—

"They were so luxurious in their growth and blooming that it was difficult to believe they have relationship with those we are so accustomed to see. They received the highest award."

OUR INVALUABLE GRAND NEW PEA. CANNELL'S ENGLISH WONDER PEA.

Which certainly does away with all other first and second early kinds now in use, and should be sown at once. So surprised and satisfied was one of our most noted growers, that he sowed it early in the autumn, and is now in full growth under glass, and is counting on picking at Christmas or soon after. Many gardeners who have frequently seen this variety growing with us, are of a strong opinion that it will drive nearly if not all other Peas out of the garden. Testimonials from the following surely must go far to convince all of the wonderful prospect of this Pea.

The above now ready for delivery. Per Quart, 3s.

THE GARDEN, *September 19, 1891.*

CANNELL'S "ENGLISH WONDER" PEA.—This is a valuable early dwarf Pea, some 16 inches in height, which has received the above name. The pods are freely borne, are long and narrow, and contain from nine to eleven Peas very closely set, of a dark green colour and of capital quality. I saw it growing at the Eynsford Seed Farm the other day, being tested for late work also, and it answered admirably. These very dwarf Peas are out of character when staked; they should be sown in rows 20 inches apart, when, as in this case, they crop profusely. Frequent gatherings of such Peas as these in September would prove invaluable to gardeners whose vegetable requirements are heavy.

JOURNAL OF HORTICULTURE, *July 30, 1891.*

MR. E. MOLYNEUX.—For some years I have depended upon AMERICAN WONDER for supplying us with the first Green Peas, because of its good quality, though some other varieties are a few days earlier, and earliness is the first consideration with some people. This year I have given CANNELL'S ENGLISH WONDER a trial alongside the old favourite. The result is, I find the new variety superior to the old one in every respect. The growth is similar, but the pods are larger, and the Peas superior in quality. The two sorts were sown February 13, and gathered June 23. They suffered much by a frost on Whit-Monday, or would have been ready a week sooner.

MR. W. BAINES, *South Clifton, Newark.*

ENGLISH WONDER PEAS are in every way a success, abundance of crop, well filled, delicious in flavour. The AMERICAN WONDER cannot put a patch upon them; in a word, they are unrivalled, taking them all round as an early Pea. I have tried them in three different kinds of soil, and they seem at home anywhere—strong clay, strong soil, light sand.

MR. W. E. CORDEN, *W. R. Depot, Wakefield.*

The ENGLISH WONDER PEA I got from you this last spring, I consider it far in advance of AMERICAN WONDER—larger pods, and better filled, and a splendid cropper.

MR. W. A. COOK, *The Gardens, Compton Bassett.*

ENGLISH WONDER PEA is an excellent cropper, very dwarf and early, large pods, and of excellent flavour; it is a long way ahead of AMERICAN WONDER, WILLIAM THE FIRST, &c. It will become a most valuable variety for early work, either in pots or open border. I had a few pots, and was more than satisfied with result.

MR. JAS. DOUGLAS, *Great Gearies Gardens, Ilford.*

Your dwarf Pea ENGLISH WONDER is much superior to its American namesake, and a great rival to CHELSEA GEM. It is quite distinct from either. I gave it a fair trial between the two.

MR. T. PARKER, *Town Bank Road, Ulverstone.*

ENGLISH WONDER PEA I had from you is really a grand Pea—nice short growth, with well-filled pods; a delicious Pea.

MR. G. WYTHES, *Syon Gardens, Brentford.*

ENGLISH WONDER PEA is excellent in every way, and should be grown by all requiring an early Pea and a large cropper. Sown a fortnight later than AMERICAN WONDER, it came in first, and, what is better, it produced double the quantity, bearing longer, with large pods. It is a distinct advance, and should find great favour as a first early, and for gardens where room is valuable it should be largely grown.

OUR NEW CATALOGUE OF SEEDS will be posted free to all customers and applicants next week. It will be found the most practical, consequently, the most invaluable, to all connected with the Garden. As bad as the harvesting has been, and as bad as the Seeds must be this season, ours will be found in lovely condition, and quite justify our Trade Mark—"PERFECT GOLDEN SEEDS."

H. CANNELL & SONS, SWANLEY, KENT.

SANDER'S GREAT SALE OF ORCHIDS. THE LAST AUCTION SALE OF THE YEAR.

On FRIDAY, DECEMBER 18, at

PROTHEROE & MORRIS,
67 & 68, CHEAPSIDE, LONDON, E.C.

Another importation of Lindley's Old Labiata, from far beyond Swainson's hunting-grounds, and from a much higher elevation. Also,

**The Old Labiata, established and semi-established,
The Old Labiata in sheath.**

NEW CATTLEYAS, NEW PHAJUS, NEW SPATHIOGLOTTIS.

GARDNERS' LABIATA,

Semi-established, unflowered, grand plants. Every plant will be offered. Collected by the late Mr. W. DUNCE, fifteen days before his death from yellow fever. This is an early Autumn-flowering Labiata, very free, and second to none in beauty.

NOT TO BE CONFOUNDED WITH ANY OTHER LABIATA.

NEW and RARE MASDEVALLIAS,
NEW and RARE DENDROBIUMS,
NEW and RARE EPIDENDRUMS,
NEW and RARE CYMBIDIUMS.

SPLENDID SPECIMEN CYPRIPEDIUMS,
SPLENDID NEW HYBRID CYPRIPEDIUMS,
SPLENDID and CHOICE CYPRIPEDIUMS,
IN GREAT VARIETY.

**COOL ORCHIDS, in bud and bloom,
WARM ORCHIDS, in bud and bloom.**

MR. F. SANDER will also include in this Sale a magnificent lot of splendidly-grown CYPRIPEDIUMS, the property of a gentleman giving up the cultivation of these plants.

Grand Specimens of the following will be included:—

CYPRIPEDIUM MORGANIE,	CYPRIPEDIUM CARDINALE,
" SEDENI PORPHYREUM,	" SCHLIMM,
" BOXALLII,	" DORIS,
" DAUTHIERII,	" SCHOMBURGKIANUM,
" NITIDISSIMUM,	" ROTHSCHILDIANUM,
" CARICINUM,	" SUPERBIENS,
" ELLIOTIANUM,	" VILLOSUM,
" HARRISIANUM,	" HIRSUTISSIMUM,
" SPICERIANUM,	" HAYNALDIANUM,
" WEIDLICHIANUM,	" CONCOLOR,

And a great many fine Plants of other varieties.

SANDER & CO., ST. ALBANS.



THE Gardeners' Chronicle.

SATURDAY, DECEMBER 12, 1891.

MINLEY MANOR.

[SEE SUPPLEMENTARY ILLUSTRATION AND PLAN.]

NEAR to Farnborough and Aldershot, the one famous for its camp, the other as the residence of the Empress Eugénie, lies the estate of B. W. Currie, Esq. The place-names above-mentioned convey but little information to the gardener or landscape architect, but the mention of Bagshot sand at once conveys to him an idea of the configuration of the land, the nature of the soil, and the characteristics of its natural vegetation. It conjures up a vision of wide-stretching heaths, undulating ground, low rounded hills, plantations of Scotch Pines, which have so thriven that seedlings come up in all directions under the shelter of the heather and the gorse. The botanist knows exactly what plants he is likely to find—the gardener makes significant inquiry as to the depth from the surface of the iron "pan," and as to the difficulty of breaking it up. The only thing that strikes the visitor as peculiar are the fine Beeches, trees which one does not, as a rule, associate with such conditions as those mentioned; but here they are, and their bronzed leaves in early winter contrast finely with the blue-green of the Pines, and assort well with the rich gold of the Birches.

Minley Manor is a modern red-brick mansion with stone dressings, in the French renaissance style, with quaint "tourelles" and steeply-pitched pyramidal roofs, a sort of hybrid between Gothic proper and Jacobean. The main entrance is through a courtyard adorned with a central ornamental tower, which serves to diffuse the beams of the electric light. Ranged around this courtyard, are a number of fine standard Bays in tubs—specimens worthy of Belgium or Italy, but which are rarely seen so fine in this country. In winter they are housed in a fine orangery adjacent. Looking from the courtyard into the grounds, the view includes a long grass avenue, with two stately Douglas Firs as *avant-courriers*, and thereafter Wellingtonias and Limes in alternate sequence all down the line. The Wellingtonias have thriven, and the effect is imposing.

Passing through an archway in the courtyard, the visitor enters a cloister, recalling those attached to so many Italian monasteries, and from here the visitor gets his first glimpse of the sunk winter garden, constructed by Messrs. Veitch, and of which we give a plan (fig. 104). The form is a parallelogram, the dimensions—see scale to plan. The groundwork is formed of dark Yews, edged with white Euonymus

radicans. No fewer than eighty thousand seedling Yews were employed, and their dark foliage serves to set off to advantage the scrolls and devices, which are worked out in gold and silver Retinosporas (*R. plumosa aurea* and *R. squarrosa*). The symmetry of these little shrubs is admirable, so much so, that we were surprised that it is only found necessary to go over the beds once or twice in the year to secure the desired evenness of surface and clearness of outline.

Other portions of the design represent the family coats-of-arms and the monograms of Mr. and Mrs. Currie. Mound-like beds, arranged in panels of Golden Queen Holly, alternating with Hodgen's Holly, lend brightness, without glare, to the scene, even in the dullest winter day, whilst at night they are made to gleam in the rays of the electric light. These beds are constructed entirely of evergreen shrubs, so as to secure a pleasant outlook even in winter. They might be supplemented by similar beds on the terrace of Heaths, Pernettyas, Daphnes, interspersed with bulbs, or alternating with masses of bedding Pansies, *Silene pendula*, *Myosotis*, Wallflower, and other spring-flowering plants.

Some of our readers may throw up their hands at this reversion to a style of gardening which has not only gone out of fashion, but entails vigorously-expressed disapproval on the part of some critics. *De gustibus non est disputandum*. In this case, most visitors would, we think, agree that the work is in thorough harmony with the surroundings, and that the design, usually the feeble part in such undertakings, has been well carried out by Messrs. Veitch. It is not an excrescence from, or even an adjunct to, the house, but it is so contrived as to form, with the terrace garden, an integral part of the general scheme of architectural decoration. As such, it would, we expect, meet the approval of such a critic as the late J. D. Sedding, whose work on garden craft we had lately occasion to notice.

Beyond this scroll-garden, linking it to the wild woodland in the distance, Messrs. Veitch are contriving a garden which will be full of interest at all seasons. It consists of a series of bold beds, separated by grass, and devoted each to one description of herbaceous plant, or of flowering shrub. Clumps of herbaceous plants, interspersed with Daffodils and other bulbs, beds of Roses and double-flowering Brambles, of coral-barked Cornus, of golden-rinded Willow, of *Berberis stenophylla* and *B. Darwinii*, of white Broom and yellow Broom and orange Broom, of purple-leaved *Rhus* and golden-leaved *Weigela*, of *Clematis*, and further off of *Rhododendrons* and *Azaleas*, of—well of any and everything that is choice, beautiful, and fitting. No fear of monotony in such a garden, no meaningless wiggles, waggles and purposeless meanderings, but a system of arrangement similar to that which at one time conferred such a charm on the Oxford Botanic Garden without impairing its efficiency for educational purposes, but which is a thing of the past. Beyond this space, called the Plain, we come to the woods with glorious vistas of the distant country seen through the Pines. Massive Douglas Firs, stately Low's Firs, columnar Libocedrus, glaucous *Nobilis*, and many other of the finer Conifers add majesty and variety to the scenery. The skillfully constructed roads and banks are lined with Heaths and *Gaultherias*, *Berberis*, and *Periwinkles*, whilst on to the grass verges have been successfully transported large specimen plants of various of the more effective of the Conifers.

The kitchen garden bears marks of skilled management, but, at this season, does not offer much for the chronicler to narrate. Two features, however, are unusual, viz., the growth of pyramidal Apples and Pears on broad grass verges, and the separation of the quarters by low hedges of *Ilex crenata*, *Osmanthus*, *Retinosporas*, and other shrubs rarely used for such purposes. The order and keeping of the whole establishment reflects credit on Mr. Profit and Mr. Tubb.

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM × COOKIANUM, *hyb. nat.**

This is the supposed hybrid *Odontoglossum* which was exhibited at the meeting of the Royal Horticultural Society on November 14 last, by M. C. Cook, Esq., of Kingston Hill, and which received an Award of Merit, subject to its being named or verified (*vide Report*, on p. 591 of these columns). It appears quite distinct from anything hitherto described, and therefore the above name is proposed for it. Mr. D. Callimore, the gardener, states that it was received as *O. blandum*, which, however, is very different. I believe it to be a natural hybrid, but feel a little doubtful about its parentage, though its characters suggest *O. triumphans* and *O. Sanderianum*. The influence of the former seems evident in the deep yellow sepals and petals with numerous chestnut blotches, while the lip is very similar to that of *O. Sanderianum* in every respect. It is just possible, however, that *O. blandum*, instead of the latter, may have been one of the parents. It is a very handsome form, the contrast between the colour of the lip and the other segments being very striking. *R. A. Rolfe*.

MORMODES PUNCTATUM, *Rolfe, n. sp.†*

This is a new *Mormodes*, which has recently flowered in the collection of M. Gustave Bral, of Mont St. Amand, Gand, Belgium. Its origin is not certainly known, but it is believed to have been bought at one of the London sale-rooms some seven or eight years ago. The materials to hand are a pseudobulb, leaf, and part of the raceme, with three flowers. The pseudobulb is $\frac{3}{4}$ inches long, but it is said to be the smallest on the plant, and the leaf is $\frac{9}{16}$ inches long by $\frac{1}{2}$ inches wide. The species is allied to *M. Wendlandi*, Rehb. f., but differs especially in its broader densely-spotted segments, and the shorter and less-acuminate lip. It is certainly attractive, and is the third novelty in *Mormodes* which has appeared during the last few months. *R. A. Rolfe, Herbarium, Kew*.

ROCKERIES.

I was much interested in the article signed "W. A. C.," York, published in a recent number of the *Gardeners' Chronicle*, and in which it is suggested that alpine plants may be well grown, and yet so planted as to have an artistic and tasteful effect. I have also perused the series of articles on this subject, written by my friend, Mr. Ewbank, and I am bound to acknowledge that, in several cases which have failed with me at Geneva, he has proved that his method of cultivation is more successful.

I cannot say that the "Alpinum" figured by him, and representing a part of his plantation at Ryde, is the *ne plus ultra* of beauty; for, from an aesthetic point of view, I much prefer the "Mont Blanc" form of rockery condemned by him, and recommended by "W. A. C." I believe that either system is bad if carried to excess. Here, at Geneva, where the dry and hot summer climate kills many of our most

* *Odontoglossum* × *Cookianum*, *hyb. nat.*—Flowers stellate. Sepals lanceolate, acuminate, $\frac{1}{2}$ inch long by 5 lines broad; deep yellow, with numerous smallish blotches of deep chestnut, which pass into lines at the extreme base. Petals similar, but a little shorter. Lip much like *O. Sanderianum* in shape, stalk 4 lines long, yellow, with a few light chestnut spots, blade subimbricate, abruptly and shortly acuminate, 1 inch long by 6 to 7 lines broad, white, with large bright chestnut blotch in front of the crest, and a few small spots near the margin; crest consisting of a pair of diverging acute teeth, each with a second obscure tooth near the base. Column 7 lines long, with a prominent rounded tooth on either margin near the base, wings oblong, $\frac{1}{2}$ line long, apex tridentate or tricuspidate.

† *Mormodes punctatum*, *n. sp.*—Pseudobulbs elongate, subfusiform. Leaves lanceolate, acute. Raceme erect, with several flowers. Bracts ovate-oblong, subobtusate, 4 lines long. Sepals suberect, oblong-lanceolate, acuminate, light yellowish-brown, densely speckled with very dark brown, $\frac{1}{2}$ inch long by 4 lines broad. Petals 6 lines broad, otherwise like sepals. Lip stalked, blade triangular, shortly and abruptly acuminate, sides reflexed or nearly revolute, lateral angles rounded; colour yellow, with numerous small chestnut spots. Column pale yellowish-white, densely and minutely spotted with light purple. Habitat unknown.

beautiful alpine treasures, the point now under discussion is perhaps of even greater importance that it is in England, where the damp atmosphere is so favourable to this flora.

The great rockeries styled "à la Mont Blanc" were recommended by me in my book on alpine plants, and before me by such authorities as Kerner, Bissier, &c. I have made such a construction in the alpine garden here, and I must say the results have not justified my expectations. So large a rockery required more plants to fill it than any other form, and I ended by naming it the cemetery. With the exception of purely saxatile species, which I planted in the cracks of the stones (*Saxifraga longifolia*, *Cotyledon*, *Iberis saxatilis*, *Helianthemum*, *Linaria pallida* and *L. hepaticifolia*, *Omphalodes*, *Lucilia*, *Campanula Elatine*, &c.), I cannot be congratulated on my Mont Blanc. From an artistic point of view—and this is the opinion of M. Ed. André of Paris, whose judgement and advice I value much—this mass of stones is too rocky, not sufficiently covered with verdure, there are too many stones, and the effect is hard. The same remark applies to the rockeries in the Jardin Boissier at Valleyres, at least to the new ones which are not yet well clothed with vegetation. So that this system is good for purely saxatile plants, but bad for others.

Mr. Ewbank's plan, however, answers capitally for most plants from mountain pastures (not alpine) and mountainous regions, and especially for all bulbs. I have never been able to grow bulbs on my large rockery, while it is not suited to plants from high elevations, or to those which are essentially saxatile. "W. A. C." of York is well qualified to judge of such matters, because in that city Messrs. Backhouse have an alpine garden, which seems to be (unfortunately, I have never seen it) managed in the right way, and where it is said that those gentlemen succeed in raising the most delicate alpine. I do not think that "H. E." wished, while condemning the Mont Blanc form of rockeries, to include in that sentence the system pursued in the Backhouse garden, which seems excellent, and exactly what I have been trying to introduce here. I have now some photographs of one of the most beautiful of alpine gardens, that belonging to Mr. Kitson, of Leeds. This garden consists of a series of very natural-looking little irregular terraces, while here and there a trickle of water runs over the turf in and out between the stones, and forms tiny lakes, where semi-aquatic and bog plants succeed admirably. This is the best system, that which imitates Nature, and is one which will, I am certain, be largely adopted in the future. For my part, I have great confidence in the plan of planting on walls, and, as I have already said, I consider this the only means of acclimatising in England the more tender alpine, such as *Androsace pubescens*, *Helvetica*, *Charpentieri imbricata*, *Campanula Raineri*, *Elatine*, *Allionii*, *Cenisia*, &c. For these species I do not consider the "H. E." system good, and I prefer little separate rock-pockets, and above all the wall plan. A certain number of other plants, such as *Dianthus glacialis* and *neglectus*, certain species of *Artemisia*, *Achillea*, *Campanula*, *Phyteumas*, &c., require to be raised above the surface of the ground by small pebbles, which help to maintain moisture around the roots, and keep the delicate foliage from rotting in consequence of contact with the earth. A rockery is necessary for these. There are others which are tufted and sarmatose, *Androsace lanuginosa* and *A. sarmatosa* for instance, or *Gypsophila repens* which require a rockwork in order to display their full beauty. Finally, there is the series of drought-loving or xerophile plants, which must be kept dry, and do not succeed under the conditions of "H. E.'s" system. And, again, from an artistic and naturalistic standpoint the "H. E." system cannot be recommended. Still, the method has something in its favour: it is well adapted for the garden of the collector or connoisseur who especially prides himself on his success with some particular species; and, again, it is especially suitable for the flora of sub-alpine pastures, and those which

are more numerous and even more brilliant, and come from the mountainous regions, such as Siberia, New Zealand, Canada, and the Straits of Magellan. Many of the plants will do well at Ryde—and here I put on one side the species which find in a warmer and more temperate climate than ours the necessary materials for their life and development. These plants should also succeed with us, but hitherto they have not. Clearly, the plan of forming great rockeries in one corner, and pyramids of stones, is defective, while the method which Mr. Ewbank recommends is excellent for the great number of perennial species which cannot, strictly speaking, be called alpine, but which are some of the most beautiful of the plants of the higher elevations. *H. Correvon, Geneva.*

WESTROP HOUSE, HIGH-WORTH, WILTS.

This is the property of Gerard Orby Sloper, Esq., and is situated on high ground in the historically interesting and important town of Highworth, about seven miles from Swindon. Husbandry occupies the attention of the chief part of the population of the district, as it has done for ages, although the marks of the culverin-shot in the masonry of the fine old church, and other indications of strife, show that the work must have been carried on under difficulties at times.

Westrop House is an old-fashioned comfortable building, where the art of gardening has been cared for a great length of time, as the great age of the climbers, with which it is clad, shows, *Bignonia radicans* having stems as thick as a man's arm; the Honey-suckles, yellow Banksian Rose, and Jasmines being proportionately stout. So well do these climbers flower, that the owner is enabled to boast that there is not one day in the year when he cannot find a flower on one or other of them. The gardens, too, are old, and as is usual in old gardens, they have some very uncommon and effective arrangements and combinations which the hand of Time has beautified.

Beside the house is a commodious and ornamental conservatory furnished with Palms, Dracenas, Ferns, Phormiums, &c., and passing out, a broad expanse of smooth lawn unbroken by flower-beds (bedding-out for summer effect is not attempted here) meets the eye, and here there are four Cedars of Lebanon of noble proportions and great age.

In different parts, we find a Rose garden, the children's garden, always a feature that is full of interest in an old place; and several plantations of herbaceous plants, flowering shrubs and bulbs, some of which Mr. Sloper brought from the Rocky Mountains; and some Algerian Lises, which are of special interest. Passing through a curious set of subterranean passages, we come to one of the prettiest features in the garden, called The Grove. This is a shady serpentine walk, artistically arranged and planted many years ago, as may be judged from one of the Laburnums, which has a 7-feet girth of trunk, rendering it a very pleasant and secluded spot, in which along the whole distance but a very short view can be had at any point. After passing the grotto and rockeries, however, the brow of the hill at the end is reached, and here a grand view across the valley, along which the silvery Thames winds, with the whole range of the Cotswold Hills beyond, and the beautiful and varied intervening scenery, comes into view. Here, on the brow of the hill close to the end of The Grove, Mr. Sloper says that whenever earth is removed to any depth, the skeletons of men of unusual stature, all laid one way, and each with a large stone on the breast, are found. It is conjectured that they are those of Danes who fell in some of the earlier wars which, owing to the strategical advantages offered by the ground, have raged so frequently around.

For the rest of the gardens, it may be said that there are two small gardens facing the house in which, under Mrs. Sloper's management, Roses, Iris

Kæmpferi, perennial Asters, Sunflowers, Pæonies, and other showy hardy plants are admirably cultivated, the lesser portion being arranged as a wild garden. There is also a very fine walled-in kitchen garden, in which fruits and vegetables are remarkably well grown.

THE ORCHID HOUSES.

These are of special interest, for although old-fashioned structures, a great number of Orchids, and especially cool Orchids, thrive in them with the greatest luxuriance. Foremost among these may be mentioned the *Cattleya Dowiana*, *C. D. aurea*, and the varieties of the *C. Warscewiczii* (*gigas*) generally, which form the leading feature in the plant-houses at Westrop House, and all of which plants grow rapidly and flower profusely. There are about sixty specimens of *Cattleya aurea*, many of which are still in flower, filling the house with their beauty and fragrance. Among them is a plant of a natural hybrid of the *C. Hardyana* section, but with the sepals and petals beautifully marbled and veined with rose-colour, while the lip is even more exquisitely veined

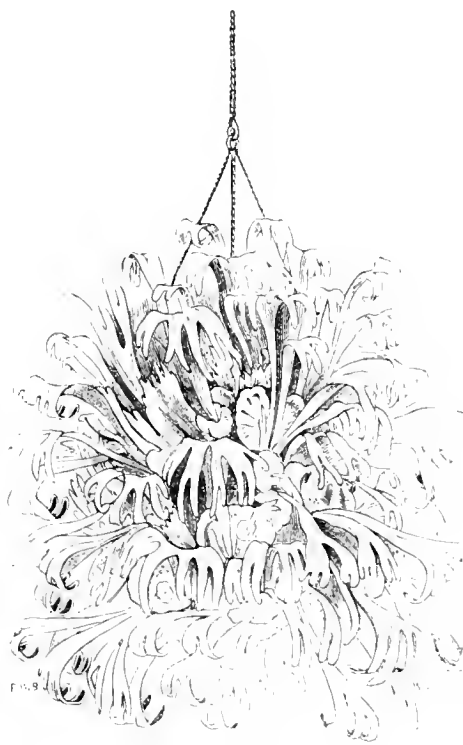


FIG. 100.—PLATYCERIUM ALCORNE.

with gold than is the typical *C. Hardyana*. These plants are grown on a stone shelf, in a lofty, warm, lean-to house, near to the highest point of the roof. Possibly they thrive in such a remarkable degree because they are not meddled with too much. Some of the plants of *C. gigas* have borne from twelve to eighteen flowers each, and must have been grand objects. In the same house on the bed beneath, a lot of *Cœlogyne cristata* is in grand order, and will in due time be covered with flowers, although the temperature is higher than most Orchid growers would like to afford these plants. The *Cypripedium*s also do well here.

In the adjoining lobby are some fine masses of *Lælia autumnalis* covered with buds, and a lot of well-grown *Lælia cinnabarina* and *L. harpophylla*, with some *Vandas* &c., and in a cooler house beyond, in flower, were some pretty scarlet *Sophranitis grandiflora*, *Cymbidium giganteum*, a lot of *Lælia anceps*, in bud; fine *Odontoglossum grande*, *Epidendrum paniculatum*, various *Oncidium*s, among which is the best form of *O. ornithorhynchum superbum* that we have seen.

FRUIT AND PLANT-HOUSES.

Most of these have either undergone or are undergoing renovation, and they comprised a long range divided into many compartments. The first is a Peach-house, with *Chrysanthemums* in it, the second Vines, Azaleas, *Eupatoriums*, &c.; the third, Vines and Camellias; the fourth, a viney, in which cool Orchids are not doing remarkably well; and the fifth, various greenhouse plants, and beyond that a large old Rose-house. Throughout the old garden there is ample evidence that those who manage it must have plenty to do, and that the owner gets much pleasure out of it. *J. O'B.*

BROAD HORN FERNS, OR PLATYCERIUMS.

Of striking appearance, sturdy in growth, and permanently effective, these ought to be represented in one or more forms in all warm greenhouses and stoves. The Elk's-horn species (fig. 100, *Platycerium alcorni*), introduced from New South Wales about the beginning of the nineteenth century, thrives well in the former structure. It is the commonest form and the cheapest, and has all the meritorious characteristics of the genus except size; but the variety named *Platycerium alcorni majus* is so great an improvement on it, as to almost bridge over the great difference existing between *P. alcorni* and the nobler *P. grande* (fig. 101). All the species have a peculiar way of attaching themselves to trees or blocks, protecting their root-stocks by broad sterile fronds, which cling close to the bark on all sides but the upper one, where the somewhat reflexed, imbricated crowns, spread somewhat, so as to prevent water from above finding its way to the roots beneath.

Even the cooler-growing forms are easily grown artificially upon pieces of hanging wood, though they require special treatment and attention to cause them to commence growing, and assume fine masses permanently. A thick, solid piece of wood such as is likely to last for some years, should be chosen for the purpose, as this is far preferable to virgin cork, &c., which so soon falls to decay.

The best way to fix young plants to the block, is as follows:—Prepare a solid piece of wood, in size about 10 inches long by 6 inches wide, and 2 inches thick, placing copper wire, firmly attached to one end, whereby it is ultimately to be hung. The young plant to be grown thereon should be fixed at the centre of the slab, but one inch below the middle. To fix it firmly in place and secure it there indefinitely, a small bolt of wood, an inch square, and 5 inches long, should be nailed across the width of the face to be furnished, 8 inches from the top, against which the base of the peat used can be fixed. Choose, next, two pieces of fibrous peat 5 inches long by 4 in width, and lay one firmly against the wood; place a little leaf-mould and a few lbs of charcoal thereon, and over it fix the other piece; then cut a slit centrally from the top of the latter piece of peat down to its centre only. Insert such roots as the plant has into the leaf-mould through the central slit. Fix the crown of the plant just within the slit, with the sterile fronds lying close against it; press the edges of the slit tightly together, holding the plant firmly in place, and beat the peat firmly together with a flat beater, until it forms a compact unity. Then bid it down as firmly as possible, with three or four cross-overs of copper wire springing from nails driven into the wood at the edges of the peat. When finished, lay the slab on its back in a convenient place, thoroughly soak the compost with water, then syringe it to wash off loose particles; let it lie for a day or two, then hang it up, and do not water it again until the whole has become somewhat dry, by which means all will bind more freely together, and the only future attention required for some years, will be proper watering with occasional syringing. Occasionally also, when such plants are thoroughly established, and during hot, dry summer weather periods, it will be necessary to plunge the whole block and roots

into a tub of water to afford the proper amount of moisture to the roots. All the species may, moreover, be made to grow permanently on artificial rockwork, and in pots, if properly elevated above the soil, and upon blocks or rough stones, &c. As regards the latter, when the plants become established they prosper, owing to the uniform amount of moisture. Though they all require a high, moist temperature when growing, to insure the formation of both sterile and fertile fronds of large, noble dimension, it is necessary to keep them somewhat dry during the midwinter season.

amongst hardy fruit, given, of course, reasonable accommodation, such as a fairly high wall and suitable soil. If the necessary means are at hand to protect the blossom until the fruit is safely set and commencing to swell, then, I think, the cultivator has but himself to blame for a deficiency in the fruit crop. Where failure occurs, neglect may be traced as the primary cause, either by allowing the trees to be overruled with insects, mildew, and such pests to which Peaches are subject, or to neglect in so crowding the shoots, that they are deprived of sunlight and air. Here, in Hampshire, Peaches are

that the same tree has not once missed giving us a full crop of fruit for the last eight years. I would not advocate the planting of early varieties, such as Waterloo, Alexander, or Hale's Early to grow against an east wall, but Grosse Mignonne, Dymond, Violette Hative, or Royal George may with safety be planted. Peach trees exposed to strong easterly winds are sure to be attacked in the spring with blister of the leaves, but of this I take little notice. It is surprising how quickly Peach trees grow out of an attack of blister when the sun gains power in the spring, and warmer nights are ex-

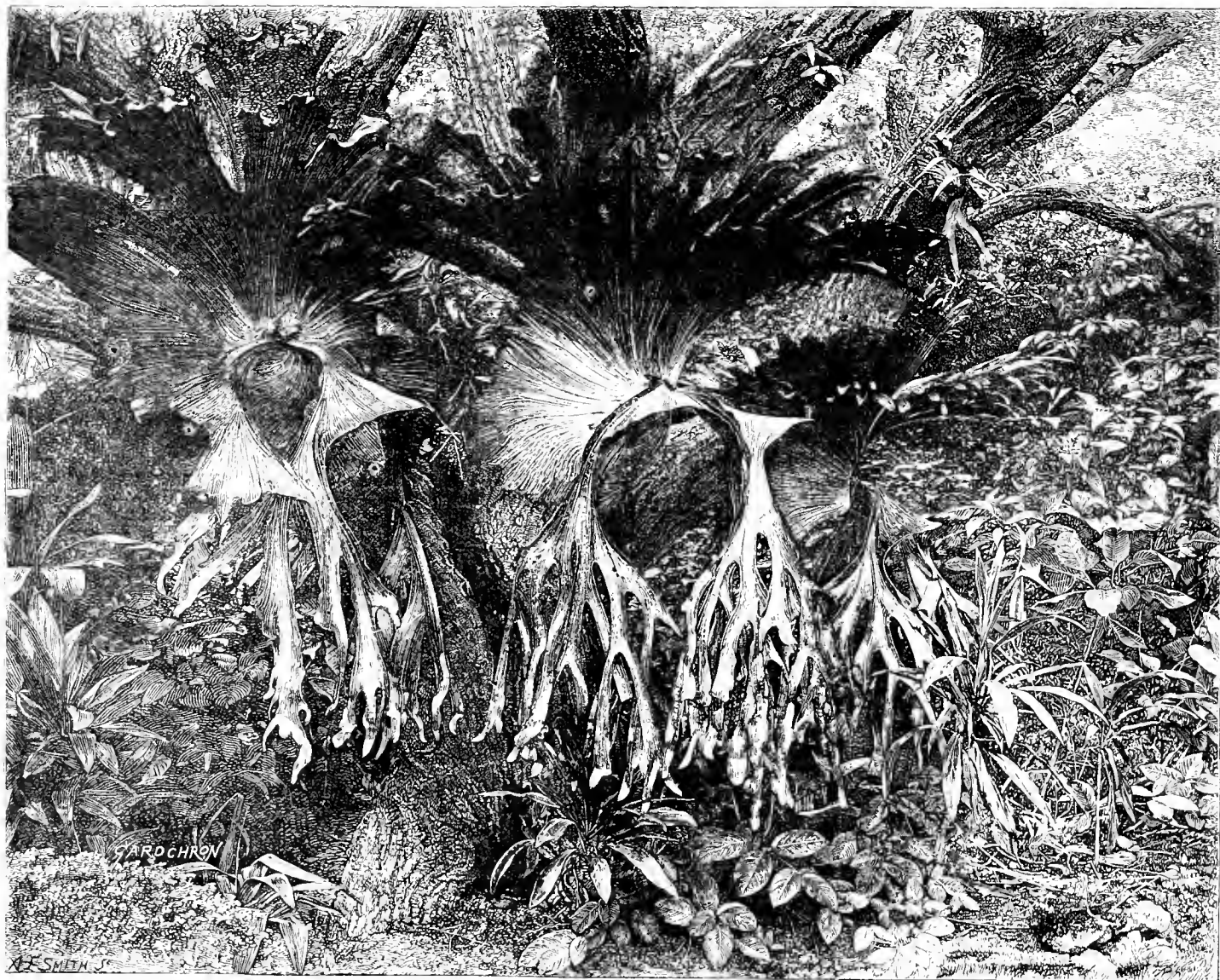


FIG. 101.—PLATYCIERIUM GRANDE. (SEE P. 697.)

Platycerium grande, the Moreton Bay species, is by far the most noble plant; the recently-introduced *P. Willmckii* (fig. 103, p. 701) is a noble form, having broad, roundish, deeply tuberculated, sterile fronds, some 5 or 6 inches across, and unusually erect, whilst the fertile ones are 2 to 3 feet in length. *P. bifurc.*, *P. Wallachi* (fig. 102 p. 699) and *P. Hillii* are also showy species deserving of being cultivated. *William Early*.

PEACHES ON OPEN WALLS.

In the south of England the out-door Peach crop may safely be regarded as one of the most certain

regarded as the most certain crop of out-door fruit we have, and although our convenience for cultivating them extensively does not admit of this, we manage to get a good lot of fruit. During the past season we had two trees of Walburton Admirable heavily laden with fruit, the flavour of which was but poor, however, owing to the wet, sunless weather. Still, these fruits were useful for cooking purposes, and for bottling they were appreciated.

It may surprise some persons to know that Peaches can be grown successfully on an east wall. One of the trees mentioned above has an eastern aspect; another, *Grosse Mignonne*, occupies part of an outside east wall, and considerably exposed to strong winds from that direction. I can say safely

perceived, and especially when some attention is paid to them in the way of gradually picking off defective leaves, syringing with tepid water, and removing heavy winter surface mulchings of manure to admit of the sun warming the soil, which does far more service than keeping them constantly covered. Mulchings of manure are very well in their proper place, but injudiciously applied they are calculated to do much more harm than good to fruit trees of all kinds, especially Peaches.

It is not necessary, either, to have high walls with expensive glass copings to ensure good crops of fruit although where these luxuries can be had, so much the better. Our wall is but 9 feet high, in some places less. It is furnished with but a 3-inch brick

coping, which is almost useless, because it is not wide enough to carry the drip clear of the leaves and fruit; in fact, it just provides the means of constantly keeping some parts of the trees wet. If the walls are low, the trees can be trained in a more horizontal fashion—increased size is then obtained for any particular tree which requires extension. One of our trees of Grosse Mignonne reaches 10 yards on a south wall, and carries annually over one hundred fruits, which never fail to colour splendidly. The soil here is a heavy one; and, with the addition of old lime-rubble, wood-ashes, and by deep moving, will grow Peaches well. Soil of this kind does not need nearly the amount of attention in watering as does a light staple. Where many err in Peach culture is, in neglecting the roots of their trees after the fruit is gathered; if the weather be dry during September and October, the borders

it may naturally be assumed it is now solid. Judging by the appearance of the Peach trees, it will not be necessary to interfere with it yet for some time to come.

An important point to study in preparing the trees for next year's crop is the thinning out of the shoots directly the fruit is gathered, so that those remaining will have a better chance to ripen by receiving a greater share of sunlight. What is the use of deferring the pruning or thinning-out of useless wood until the spring, when the trees are rearranged on the wall, and too many branches are there for the space?

Trees managed in the way indicated, need little or no pruning in March. It is a good plan to take the trees from the wall every season, not only for retarding the blossom-buds, but also for the purpose of cleaning them where required.

less summer. Until the fruit has passed the stoning period, I do not find it is necessary to assist the trees at all with stimulating food. Should the weather be dry previous to that stage, copious supplies of clear water may be afforded; afterwards spread a thin mulching of horse-manure over the roots to retain moisture in the soil. Trees which are carrying a full crop of fruit may have assistance once or twice after the stoning period is past. I know nothing better than Wood's *Le Fruitier*, which not only induces the tree to grow vigorously, putting a healthy colour in the leaves if they have previously appeared sickly. It should be sprinkled on the soil thinly, lightening up the soil with a fork afterwards, but not turning it over. A good soaking of clear water should then be applied to the surface to wash in the manure about the roots. Although this stimulant quickly changes the "tone" of the trees, it does not induce a strong sappy growth. Where the drainage is perfect, Peaches cannot have too much water during hot and dry weather, either at the root or overhead.

In addition to the sorts named, Bellegarde and Barrington are reliable croppers and the fruit of good quality. Some of the early varieties are valuable only in that respect, they being far too "woolly" to be appreciated. It is much better to grow two trees of an approved kind than to plant others merely for the sake of variety. By arranging the same kinds against walls of various aspects, a succession may be kept up with one kind, as well as by many, and with much more satisfaction when the fruit finds its way to the dessert table. I omitted to say that walls with a western aspect will also grow good Peaches.

Disbudding I have not referred to. It is important, but it is not attended to in the early stages of growth, as it should be. Directly the shoots are large enough to handle, a few ought to be removed at a time—a plan that does not check the growth at all, those growths which spring from the direct front of the branches, as well as those which grow from the underneath side. Shoots which promise to be misplaced ought to be rubbed off early to give space to the remaining growths, that the latter may grow strong from the commencement. E. M.

NURSERY NOTES.

ORCHIDS AT MR. WM. BULL'S.

It is with justifiable pride that Mr. Bull points to his fine collection of old-established plants of *Odontoglossum crispum* and *O. Pescatorei*, and his superbly healthy stock of *Miltonia vexillaria*, as examples of good culture in the smoky metropolis, which growers in the most salubrious country-districts cannot excel. The beauties of these flowers naturally appear to the greatest advantage at this almost flowerless season of the year, and a recent visit revealed a fine display in the cool *Odontoglossum*-houses, where along the whole length of the house the fine spikes of *Odontoglossum crispum* border the middle walk on either side. Many there are of the unspotted forms which are of perfect shape, and some are pure white, and some tinged with blush or rose. Among the spotted forms are several varieties of *O. c. guttatum*, one of them with large brownish blotches of the *O. c. Stevensii* class, while one has unspotted petals, but with six or seven dark blotches on each of the sepals. The whole of the plants in flower speak highly of the strain, and of the care displayed in selecting to grow on to such large plants. Also in flower are a few hybrid *Odontoglossums*, the *O. bellinum*, a heavily-spotted yellow variety, being an exquisite thing.

In the house devoted to *O. Pescatorei* there is an equally good show, the best form of that species now in bloom being *O. P. splendens*, in which the labellum is large, and showily decorated with purple blotches. Here the *Oncidium macranthum* are in fine condition,



FIG. 102.—PLATYCERIUM WALLICHII. (SEE P. 638.)

near the wall should receive a thorough soaking. It is surprising what a quantity of moisture a brick wall will absorb from the soil, and this must be at the expense of the Peach tree roots.

Another mistake is that of digging the surface of the border in which the trees grow. Peaches like a firm soil, and as long as the trees flourish in it, the roots should not be disturbed. It is necessary, perhaps, to lift a young tree, and replant it in the same place, or to cut a trench around it at a distance from its stem base, with a view to check luxuriant growth, and induce fruitfulness; but beyond that do not interfere with the roots at all. The border in front of our Peach trees is occupied with herbaceous plants. A path, 4 feet wide, directly in front of the trees, is left for the convenience of attending to the plants in the border and the Peach trees, as well as allowing light to reach the trees; consequently, this space receives ample treading, and as the soil here has not been disturbed for ten years,

Insects, such as green and black-fly, are too often neglected during their earlier stages—it is useless to wait to see two aphides of either kind—adopt a remedy upon seeing the first. Vigorous syringings with clear water will dislodge the former, and tobacco-powder dusted over the other at night. In the morning, give the branches affected a thorough washing with the garden-engine or syringe, to clear off both fly and powder alike. When the nights are warmer, say, during May, the trees will be all the better if syringed with tepid water every other day, and through the hottest parts of the summer a thorough drenching of the trees every evening will be of much service in keeping down red-spider. The water, too, will cool the wall for the night, giving a more healthy tone to the trees.

In heavy soil Peaches require but a small amount of stimulus, or they will have a tendency to grow too luxuriantly, which often results in gummed branches, when a severe winter follows a wet, sun-

and well-furnished with spikes, and *O. Phalænopsis*, *Odontoglossum crocidipterum*, and small batches of *O. Rossi majus*, *O. Erstedii*, some *Promenæas*, and others of the neat-growing Orchids are in bloom. The *Cattleyas* and *Lælias* in the large intermediate-house are in splendid condition, the *Lælia purpurata* and all the other showy species being densely set with flower-sheaths. At present there are only the varieties of autumn-flowering *C. lutea*, and a plant or so of *C. maxima* in bloom; but in the lesser house, filled with *Lælia anceps*, *L. autumnalis*, &c., there is a good show of their bright flowers from end to end. *Lælia anceps rubra* is a fine thing of the *L. a. grandiflora* section, and others of the named varieties display qualities which excuse their being distinguished. Arranged in this cool-house with the *Lælias* are a great profusion of *Oncidium varicosum*, *O. tigrinum*, *O. unguiculatum*, and *O. pretectum*, *Odontoglossum grande*, *O. Lasleyleopardinum*, and the sweet odour of the *Trichosma suavis* betrays the presence of a batch of that pretty plant in bloom even although they are arranged at the extreme end of the house. Another house has a very pretty group of the best varieties of *Lycaste Skinnerii alba*, arranged with the blue *Tillandsia Lindenii*, and a few Orchids; and in the adjoining warm-house is a bright display of *Calanthes*, the colour being supplied by many spikes of *C. Veitchii*; but of this species also, there were plants of the pure white, one in bloom, and also the white form of *Dendrobium purpureum*. In another cool-house, a pretty group of the scarlet *Sophranites* was arranged, some of the plants having a dozen or so blooms of good size and very bright colour. With these, are plants of the finely fragrant *Pilumna nobilis*, a plant or two in flower of *Odontoglossum aspersum*, and of the handsome *Epidendrum Wallisii*. In one of the other structures was a group of *Dendrobium formosum giganteum*, *Odontoglossum Rozzii*, and the pretty *Oncidium cheiroporum*. The *Lycaste*-house had a few bright coloured *L. Skinnerii*, and the pretty light-coloured *L. S. bella*, and with them a lot of *Odontoglossum maculatum*, of which *O. m. erosum* is a very dark richly-coloured form. Here also were plants in flower of *Ceologyne barbata*, *Ada acranthica*, &c.

The large *Cypripedium*-house has been thoroughly renewed and rearranged, and well do the plants seem to appreciate the change. The rare and handsome *C. Saundersianum* × has just finished its handsome white and purplish-crimson flowers for this year, but still there remains the pretty *C. Sallierii* ×, *C. Seegerianum* ×, *C. conchitum* ×, *C. Schlimii*, *C. selligerum majus* ×, *C. Dautherii* ×, *C. Ainsworthii* ×, *C. Ashburtonia* ×, *C. Lecanum superbum*, *C. Dayanum*, and batches in flower of *C. Lawrenceanum*, *C. callosum*, *C. barbatum Warnerii*, and the varieties of *C. insigne*, most of which were collected by Mr. Freeman for Mr. Ball. That named *C. i. Freemanii* is a very distinct pale form, in which the spotting is of a soft tint o brown, and over the whole flower there is a yellow glow. *C. i. pictum* is a dark, heavily-spotted form; and *C. i. maculatum*, one in the dorsal sepal of which there are only a few large brown blotches and above them two or three purple ones. In other houses were some *Phalænopsis* in bloom, also *Dendrobium McCarthiae*, *Cymbidium elegans*, *C. Mastersii*, *Catasetum pictum*, *C. secatum*, *Bulbophyllum umbellatum*, &c.; and a noble bark of *Vandas*, and another of *Ceologyne cristata* and *C. c. alba*, and in one of the greenhouses a fine show of winter-flowering *Carnations*.

FORESTRY.

FORESTRY IN FRANCE.

A RECENT issue of *Le Temps* contains an interesting article on forestry and the timber industry in France, of which we give the following résumé:—M. Boucart, the prominent protector of our forests, to whom Sologne owes the restitution of her forest

riches destroyed during the winter 1879 80, has published a very interesting brochure upon the falling-off in value of our forests. We shall not follow the author in his economical conclusions, but merely point out that M. Boucart considers the chief causes of the decadence in value of the forests to be the steadily growing use of coals for burning, and of iron for buildings as well as ships. The area of French forests is 9 185 000 hectares, or one-seventh of the whole country; and whereas, M. Boucart informs us, the timber production prior to 1881 was valued at 32 million francs, it fell in 1881-85 to 24 millions, and last year did not exceed 21 millions. In the eastern parts the falling-off in the value of the output has been between 30 and 40 per cent., and in the western even 50 per cent. In wood for the making of charcoal—once so largely used in France for smelting and domestic purposes—the decline is no less than 64 per cent. In the *Nievre* the price of wood fuel has fallen from 85 francs to 60 francs per 10 cubic metres, and bark in bundles of 104 has declined from 180 to 140 francs, whilst staves for barrels have gone down from 500 to 350 francs per thousand. In central France, too, with its rich and old forests, their value has declined. Timber for the manufacture of wooden goods has also fallen in value, through competition from Scandinavia. Finally, in the *Pyrenees*, the value of the *Pine* forests is less by 40 per cent. than ten years ago. As regards the ownership of the French forests, we learn that 967,118 hectares belong to the state, 2 090 788 to communes and public bodies, and 6 127 398 to private persons. To the state alone there is at present a falling off in revenue of about 11 millions francs annually, and M. Boucart estimates the total falling-off at 81 million francs, as the imports of foreign wooden goods have risen from 15 million francs in 1850 to 160 millions at present, one year showing even 278 millions. In order to arrest this decline, M. Boucart suggests, firstly, increase of duties on wooden goods, and secondly, as there is but little demand for charcoal, the introduction of trees producing essences, acids, alcoholic substances, tar, wood pulp, &c. In conclusion, the writer advocates the mechanical method for sawing the timber, and the formation of syndicates of forest owners, with a view to a more economical way of production and limit of out-turn.

COVERT PLANTS.

IN the formation of plantations for ornament and utility, a proper selection of covert plants that will grow under the shade of trees, and afford shelter and food for game is a branch of forestry that requires the close attention of the planter. No doubt there are some of our best covert plants that do not, as a general rule, produce food for game; but there are some few species that do so, and are also highly ornamental, and we think, on that account, that their culture should be extended.

The Wood Laurel (*Gaultheria Shallon*) [This is the common name for *Daphne laureola*, as Aromatic Winter Green is of *Gaultheria Shallon*, *Ed.*] combines all these qualities; therefore, we can commend it to the notice of the planter with confidence. It is a pretty evergreen shrub, a native of North America, where it forms dense thickets beneath trees; and as it grows on a great variety of soils, including damp boggy ones, its extension on that account will be the easier. Its habit of growth is rather procumbent, but, in Ireland, it occasionally forms a dense bush some 5 feet high, well furnished with side branches in a uniform manner from the ground upwards, and as these are well clothed with its pretty dark-green glossy leaves, it is a conspicuous and an attractive plant at all seasons. In early summer it produces its pretty white flowers in terminal racemes, the reddish-coloured berries appearing in autumn, are often produced in great abundance, and become black when ripe. It is seldom, however, where birds and game are plentiful, that the berries are allowed to remain for any great length of time on the bushes, as they are highly relished by the feathered tribes.

When planting these shrubs in old plantations, the ground should be well broke up with a pick at the spots where the plants are to stand. If the soil has become exhausted by the roots of old trees, it will be found a good plan to add a little fresh soil or leaf-mould, mixing it well with the staple. These remarks apply to the culture of other kinds of covert plants as well. Amateurs living in the vicinity of large towns may plant this species, as I find it grows very well in smoky districts, and appears to be in good condition in Kelygrove Park, Glasgow, under the skilful culture of Mr. McLelland.

The prostrate *Gaultheria* (*G. procumbens*), as its name denotes, is a dwarf-creeping species from Virginia, and other parts of U.S.A., where it grows on dry sandy ground, as well as in the wooded parts of the country on the mountain ranges. In this country its habit is that of a flat-creeping shrub, clothed with obovate leaves of a dark green colour. It generally produces its white flowers about mid-summer, and its bright scarlet berries in autumn and early winter; and as these are highly relished by game, the planter should use it for covering banks of gravelly soil both in open places as well as beneath trees, where it appears to be quite at home. It is also well adapted for planting on bare rocky bluffs in the vicinity of water, and when once established in the crevices of the rocks, these soon present a furnished appearance.

This kind of planting, however, entails considerable care and painstaking on the part of the planter, and I have often found it necessary to introduce a small quantity of soil into the crevices, to encourage the plants at starting. Peat bog, or soft soil of a peaty texture, answers well for this purpose, as it attracts and retains moisture—a matter of vital importance on dry rocky places, and as it likewise promotes the formation of roots, the utility of using the stuff can be seen at a glance. When peaty soil cannot be had conveniently, a mixture of ordinary soil and leaf-mould may be substituted for it. In open places, *G. Shallon* may be planted on the shelves of the rocks in a similar manner, to show contrast and variety. *J. B. Webster.*

CHRYSANTHEMUM NOTES.

GROUPS OF PLANTS.—I have had to judge groups many times during the past season, and generally I have had to consider two things, viz., quality of the individual blooms, and taste in arrangement. I had to judge at one exhibition this year where about an equal number of groups were formed of naturally-grown plants and of cut-back examples, the plants being each furnished with three flowers. The exhibitor who has to depend upon plants with only three flowers on each is at a considerable disadvantage when competing against one who has equally good plants, but well furnished with fully-developed flowers, and buds in various stages of development. I had to solve this problem at an exhibition where the entire responsibility rested upon my shoulders, and as the two items had to be taken into consideration, I gave six points to each.

At the exhibition of the Cheshant Society, prizes were offered for groups of Pompons, the plants to be cultivated and flowered in 6-inch pots. This brought two collections of exceedingly well-grown plants. Nothing was said about single stems, and the exhibitors had placed from two to five plants in each 6-inch pot. The plants had been raised from cuttings planted in June, and had been pinched back once, and some of them twice. Scarcely anything could be better than these well-grown healthy plants for furnishing a small greenhouse.

There ought to be a general departure from the formal groups sloping from back to front. At the Brighton exhibition they manage their groups very differently, the whole face of the groups being irregularly broken up. If a photograph of one of the best of these Brighton groups could be obtained and published, it might be the means of letting in some light upon the subject. *J. Douglas.*

FOREIGN CORRESPONDENCE.

BERLIN LETTER.

THE great attraction lately has been the Chrysanthemum exhibition in the Kaiserhof. Chrysanthemums have been cultivated in Berlin for many years, but there were only the little and medium-sized flowering varieties in cultivation, and of these only white ones. Chrysanthemums had and have

few years German Chrysanthemum culture will rival that of the English. Moreover, German nurserymen will try to raise new varieties. Now, English Chrysanthemum growers, especially Messrs. Reid & Bornemann, of Sydenham, and Messrs. Pitcher & Manda, of Hextable, Swanley, Kent, are the chief importers of Chrysanthemums into Germany. They had very fine collections here of cut flowers, whose names are, I think, well known to your English readers, so that I need not mention them.

It may be of more interest for you to learn in

of cultivation is to make a frame of wire, and to bind up the twigs upon this framework so that the plants have a head of about 2 or 3 feet in diameter, and only of 1 foot in height. These plants are so regularly covered with flowers that nothing can be seen of the foliage, and the whole almost resembles a dwarf but large-headed Azalea indica, with the difference that each flower is seen and has its full effect. There were about a dozen of such plants, which were much admired by the public. A fourth method, and, as it seems to me, the only one which has a future here in Germany, is to raise cuttings when the flower-heads are already formed but not yet prominent, and put them in pots of about 3 inches in diameter to root and flower. These plants are of about 1 foot high, and each is furnished with one well-formed large flower-head. Certainly such plants will be purchased here in large quantities if the price be moderate. The German public does not spend much money on a plant—one or two shillings, that is more than enough. Lastly, there is the method adopted when medium-sized flowers are required, to form a stem of about 2 feet high, with a crown of some 3 or 4 feet in diameter surmounting it. These plants have a good effect by reason of the large mass of flowers. As to the prizes, Messrs. Reid & Bornemann gained a Gold Medal; Messrs. Pitcher & Manda, a large Silver one.

Allow me to make some remarks concerning cut flowers at exhibitions. Of course cut flowers were shown in large collections, and during the first two days they were in general in good condition, though already on the first day some of them began to droop. Now, there is such a simple mode of keeping flowers fresh for a week at least, that I wonder that it is not used. This mode is to place the flower-stalk in water, so that no air comes to the cut part. Or, even when out in air, it generally suffices to cut the stalk about 1 or 2 inches above the first cut. When this operation is repeated, a flower remains strong for more than a week.

Perhaps it may also be interesting for you to learn that at Berlin, on November 3, a school for gardeners was established by the magistrates of the city and the two horticultural societies. There are two classes. In the lower one, all those who have had only the education afforded by an elementary school, are taught German, science of plant life, and drawing; whilst in the upper one, gardeners with a higher education learn general plant culture, the science of soil and manures, bookkeeping, and drawing. The course is from the beginning of November to the end of February. Lectures are given twice a week—in the evening from seven till nine, and on Sunday from nine till twelve. The fee is for each pupil for the whole winter, 3s. At first, there were about thirty-five in each class, but the number is fast increasing. I may mention that each pupil got an entrance-card for the Chrysanthemum exhibition. Dr. Uro Dammer, Friedenau, Berlin.

CUNONIA CAPENSIS.

As showing the free-flowering tendency of *C. capensis*, I may mention that our plant, which is a tall-headed standard on a 6 feet stem in a tub, and which is placed out of doors throughout the summer, has at the present moment upwards of 300 pairs of flowers on it. I had no idea till this season that it was such a free-growing and free-flowering plant. Why plants of this description are allowed to remain in obscurity is not very well explained, unless it be that it has never been put in a commercial catalogue. H. K. Lucken.

ORCHID NOTES AND GLEANINGS.

FERTILISATION OF CYPRIPEDIUMS.

A STRIKING illustration as to the way in which Cypripedium flowers are fertilised by insects came under my observation not long ago, which bears upon, and somewhat strengthens the opinions of the late Mr. Charles Darwin and Professor Asa Gray, as to the manner in which cross-fertilisation is accom-



FIG. 103.—PLATYCERIUM WILLINCKII. (SEE P. 635.)

A, Sporangia; B, Stellate hairs and spores from back of leaf; C, Stellate hair from surface of leaf.

here a special use on the last Sunday in November (All Souls' Day); they are the flowers of the dead. It is not longer ago than three or four years since the large-flowered varieties began to be cultivated, and hardly anywhere has any plant gained in so short a time such a large number of amateurs. Indeed, Chrysanthemums are now the fashionable flowers here. German gardeners are still only cultivators of this plant, for they are still importing cuttings and growing them on. This exhibition showed that they are well able to grow them excellently, and that if good cultivation continues, in a

what manner the plants are cultivated. There is in the first place, the true English manner: i.e., by using large pots, and plants with one or a few stems, each ending in a single flower-head. This manner is not admired, the German public wishing to see in such large pots more than three or four or even fewer flowers. Another mode of culture is to raise large bushes of some 4 or 5 feet in diameter, with a large mass of flowers. There were in this exhibition several collections of plants of this form, which were in the best condition, the plants being in full flower, and the leaves reached down to the pots. A third mode

plished in this genus. The former gentleman at one time supposed that insects removed the pollen by way of inserting their probosces through either of the orifices close to the anther, which he artificially accomplished by means of a bristle inserted in a manner, as he conjectured, similar to the way an insect would perform the task, though he acknowledged that the important and essential feat of leaving the pollen on the stigma was not so well effected.

In the case noted above, a fly rather larger than an ordinary house-fly had doubtless entered the labellum, by way of the larger opening, for some reason or other, and in making its exit was passing up one of the orifices, but being of too bulky dimensions, it had become wedged so tightly as to be unable to proceed either backwards or forwards; this caused its death, but not without removing the pollen which was adhering to its back.

Mr. Darwin, in his book on *Fertilisation of Orchids*, writes:—"After the publication of my book, Professor Asa Gray wrote to me that he was convinced from an examination of several American species, that the flowers were fertilised by small insects entering the labellum through the large opening on the upper surface, and crawling out by one of the two orifices close to the anthers and stigma. Accordingly, I first introduced some flies into the labellum of *C. pubescens* through the large upper opening, but they were either too large or too stupid, and did not crawl out properly. I then caught and placed within the labellum a very small bee, which seemed of about the right size, namely, *Andrena parvula*, and this by strange chance proved, as we shall presently see, to belong to the genus on which in a state of Nature the fertilisation of *C. calceolus* depends. The bee vainly endeavoured to crawl out again the same way by which it had entered, but always fell backwards, owing to the margins being inflected." After several attempts it "ultimately forced its way out through one of the small orifices close to one of the anthers, and was found when caught to be smeared with glutinous pollen. I then put the same bee back into the labellum; and again it crawled out through one of the small orifices, always covered with pollen. I repeated the operation five times, always with the same result. I afterwards cut away the labellum, so as to examine the stigma, and found its whole surface covered with pollen. It should be noticed that an insect in making its escape must first brush past the stigma and afterwards one of the anthers—so that there will be a very good chance of cross-fertilisation between two distinct plants." The plant in the case mentioned by me was *C. barbatum*. *W. Harrow, Botanic Garden, Cambridge.*

CYPRIPEDIUM LAWRENCEANUM.

A flower of this species from the garden of Major-General Hutchinson, Outhope, Bournemouth, exhibits the fine character a very good form of it possesses. The dorsal sepal, which has more breadth than length, measures 3 inches across the upper part, while the surface is closely lined over with dark crimson, the lines at the base being of a bright green colour. The petals are 5 inches across.

ONCIDIUM KRAMERI.

Two noble flowers of this species also came from Outhope, and, as Mr. W. H. Jones, the gardener, suggests, they are fine varieties. Both are of bright yellow, richly mottled with brownish-red, darker in one than the other. The erect sepals are 2½ inches long, and the plants, in addition to being good varieties, have been well grown, and Kramer's Butterfly Orchid is not one of the easiest to cultivate.

FRUIT NOTE.

PLUMS.—Coe's Late Red is not without its merits. A pyramidal tree here had a crop of fruit, which, although the excessive wet caused many to crack, was of fairly good quality. They were gathered on November 1, and the last eaten on November 14. It reminds one of a late kind of (Reino Claude Violette) Purple Gage. *Will Taylor.*

TREES AND SHRUBS.

HYDRANGEA PANICULATA.

To increase this plant, take half-ripened cuttings, make them 3 to 4 inches long, and place them round the side of a 5-inch pot in sandy soil, and plunge the pot in a close case in a temperature of 60° to 65°. When rooted, take them out of the case, and stand them in a more airy position. It is a very important point not to allow the cuttings to flag before they are struck, or it will be a difficult job to get them round again; a slight watering afforded overhead occasionally, will revive them, but care must be taken not to do this too much, or damp will carry them off. The cases should have the moisture which has settled on the panes wiped off every day. Rooted cuttings may be potted into 60's, and kept in a cold frame, and by the time they are required for planting out, they will have made nice stuff. *H.*

THE CALIFORNIAN ALLSPICE (CALYCANTHUS OCCIDENTALIS).

Apart from the pleasant perfume which is possessed by the blossoms, the colour of the flower—bright brick-red—is uncommon amongst shrubs, especially at the time of year when this shrub flowers. The foliage, deep green in colour, forms an agreeable contrast to the bright-coloured flowers. *Propos* of transplanting this shrub, some care is needed when the plants are large, and especially if the soil be heavy and retentive; a peaty soil suits it best, and in this it is readily transplanted; but in the former, fibrous roots are sparingly made, hence the greater necessity of careful procedure, and good balls of earth removed with the whole of the roots. *E. M.*

COTONEASTER HORIZONTALIS.

Although this pretty and distinct species was introduced from China so recently as 1885, it seems as though it is destined to become one of the most popular of the Cotoneasters. In habit it is very distinct and neat, sending out flat branches almost horizontally, hence the appropriate name *horizontalis*, and in spring and summer these are clothed with small leaves of a rich green colour, which in the autumn turns to a bronzy-red; and it might be almost termed deciduous, for it loses the greater part of its foliage every winter, the only leaves remaining being those towards the end of the shoots. Its bright showy rosy-pink flowers are borne profusely; and if the flowering shoots are cut off and stood in water, the flowers will keep fresh for several days. Its berries, coloured vermilion, add greatly to the value of the shrub. The species is just now being propagated extensively in several nurseries. It is not fastidious in regard to soil, and seems to flourish even in those soils that are poor and sandy, and, being quite hardy, it was in no way injured by the severity of the past winter. It is a capital subject for the rockery, which is perhaps its proper place, although it may be used as an edging to beds of other shrubs, as is *C. microphylla*, or stood as a specimen on the lawn.

This species of Cotoneaster may be increased from seed, but the quickest way is to take slips in the first week in August, a time when the wood is getting firm, making these about 4 inches long, and dibbling them in light sandy soil round the sides of a 5-inch pot, and plunging them in a close frame with a temperature of 60°. When rooted, which will be in a few weeks, they must be stood in a cool, well-ventilated frame, and by the following spring they will have become nice little plants, fit for planting in the nursery. When planting, mix some leaf-mould with the soil about the roots, and afford a good watering to finish the operation. *H.*

WEeping DOUGLAS FIRS.

At Albury, Surrey, are several varieties of this noble Fir, with drooping branches. To give variety one may be desirable here and there, but the pendulous form is by no means so noble in appearance as the ordinary Douglas, of which there are several fine specimens in the grounds above-mentioned.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

FRUITING PINES.—At this season of short days and little sunbeats, it is important to have the roof-glass kept very clean in localities near smoky towns, or drawing of the leaves will occur. Where tree leaves are employed for bottom-heat, heaps should be thrown together to set up fermentation, and these should be turned over once or twice, so as to get them generally heated before adding them to the older materials in the beds. If the houses and the bottom-heat beds were rearranged about six weeks ago, the temperature will be easily managed, and the plants with advanced fruits can be accommodated with the needful warmth to finish their swelling. In the case of fruiterers, it is essential that an even temperature be maintained in the bed, a fluctuating one being productive of small or deformed fruits. The supply of moisture at the root, and in the air of the house, should be carefully afforded. A night temperature of 65°, with a rise of 10° during the day, is suitable at this season. If a covering be put over the glass at night, the evils of a parched air will be greatly lessened, and the growth favoured by the more genial conditions maintained. A few degrees higher temperature at night in mild weather will do no harm, but high temperatures during frosty nights result in mischief. These fruiterers ought to be kept well up to the glass, or the leaves will sensibly lengthen, and the crowns become large. Successions will require a temperature lower than that afforded the fruiterers, 60° by night, and 65° to 70° by day, the latter in mild weather, will be suitable ones. Remove any plants showing fruit to a warmer house, or the warmer end of the accession house. Pines in a cooler house at rest, previous to showing fruit, should not want for moisture. Aërial moisture is of great importance to these and the fruiterers, and the walls, floors, and beds should be damped daily, the plants being thereby kept steadily growing. Overhead syringing should be dispensed with at this period of the year, and humidity obtained by other means.

Suckers which were potted in the early autumn may be encouraged in growth, but the temperature should be kept a few degrees less warm than advised for larger successions, for if afforded low temperatures now, they will make a strong growth when repotted and started early in the new year. I would also advise the shifting of very strong suckers with plenty of roots, and placing them in the second house; these will give a quick return, although shifting in general is not advisable. *G. Wythes, Syon House, Brentford.*

THE KITCHEN GARDEN.

FORCING PITS.—The stalks of Rhubarb will now be making rapid progress, and when they have reached a length of 4 to 5 inches, water should be liberally afforded the soil. The produce will be improved in flavour if the structure can be ventilated several days previous to gathering. More roots should be put into heat at fortnightly intervals, or pots or boxes put over those in the open, and surrounded with warm dung and leaves.

FRENCH BEANS.—Supply plants in bearing with weak liquid manure once or twice a week. Young plants, when about 2 inches higher than the rim of the pots, may be moulded up with warm soil, and the points of the stems pinched out. Syringe the plants with tepid water on fine days, and sow seed at short intervals in quantity according to the accommodation at hand, so as to maintain a regular supply.

ASPARAGUS.—A bottom-heat of 70° and top-heat of 60° should be maintained in the Asparagus-pits or frames, maintaining a falling heat by means of dung linings, as any stagnation of growth now would impair the quality of the shoots. Ventilate the pits and frames in mild weather, and in accordance with the condition of the plants, those in which the shoots have not appeared above-ground wanting, in a general way, no air, unless it be to allow of the escape of an excessive amount of steam or warmth.

MUSHROOM-HOUSE.—Maintain a uniform moist condition of the air, and a temperature of 55° to 60°. If there are several beds in course of preparation, but little fire-heat will as yet be required. If the beds should get dry on the surface, as they will do if uncovered and fire-heat be employed, moisten the soil with tepid water applied with a fine rose pot or the syringe, and do not afford any more than is needed, especially in the earlier stages of growth.

Beds in full bearing in the event of their getting dry should be watered with tepid water 10° higher than that of the house, common salt being put into the water at the rate of 1 oz. to the gallon. Woodlice in the Mushroom-houses may be destroyed by pouring boiling water out of a long-spouted watering-pot along the sides and ends of the beds, after giving light to the house. Beetles may be caught in special kinds of traps, the Birkenhead beetle-trap being one of the best; and the best thing I find to bait them with is a piece of bread soaked in beer, and when baited they should be placed near the walls.

M SCCELLANEOUS.—On any indication of hard weather setting in, get up a plentiful supply of Celery, Brussels Sprouts, Savoys, Horseradish, &c., packing these into sheds ready for use; and any Parsnips or Jerusalem Artichokes still remaining in the ground may be protected with a covering of litter or bracken. Parsley may be protected with garden-frames or straw-burdles; and Chicory roots in the soil should be dug up and stored in sand or leaf-soil ready for forcing when the Endive and Lettuces have become scarce. *C. J. Waite, Glenhurst Gardens, Esher.*

THE FLOWER GARDEN.

MAKING GRAVEL-WALKS.—Where new walks are to be made, it is important that they should be made with due regard to their surroundings. If they are intended for vehicles as well as walking on, as is generally the case in the main walks in large gardens and pleasure-grounds, a greater depth of soil than would be necessary in the case of walks for pedestrians, should be dug out, to admit of a greater thickness of hard material being laid in the bottom for drainage, and to sustain the harder traffic. The first point to determine when making a walk after the line of direction has been decided upon, is the width that it shall be made. Main walks should be from 10 to 18 feet in width, according to the extent of the grounds, the others being from 5 to 7 feet wide. This done, due regard should be paid to the level of the ground on either side of the walk, as well as the direction in which it is proposed to take the surface-water. A depth of from 9 to 18 inches will, in a general way, be ample for walks of the dimensions mentioned above, but in cases where the top-soil is shallow, and resting on a substratum of chalk, gravel, or stone, all that is necessary is to remove the top-soil, and with which the ground on either side the walk can be made level, together with the filling up of any depressions that may happen to be close by. Whatever edging be used, turf, Box, flints, Heather, &c., it should be laid before the bottoming of the walk is proceeded with. The bottom of the walks should be deeper at the sides than in the middle, that is, it should be slightly arched or convex, so as to convey the surface-water to the sides. If the substratum be chalk, it should be well pounded all over, allowing sufficient fall (longitudinally) to the points towards which it is decided to drain the walks, providing means at each outlet to convey thither any water that might lodge on the opposite side of the walk—that is, when it is not convenient to have outlets connected with drains or "catch-pits" on both sides of the walk. In the case of walks being made on soils resting on a bed of chalk, gravel, or stone, as mentioned above, a smaller quantity of hard materials becomes necessary. A broad walk, having an excavated depth of 18 inches, should have at least 1 foot of coarse materials in the bottom, over this 3 inches of coarse gravel, followed by a like depth of fine red gravel, if obtainable. This should be raked level and smooth, and rolled as soon as dry enough—first with a light roller, and then with a heavy one, repeating the operation four or five days in succession or until a level firm surface is produced. Walks of from 9 to 12 inches deep should be given a layer of proportionate thickness of the several materials recommended for the walk described above. Bold yet graceful curves should be observed in making winding walks. Where Box is used as an edging, taste and judgment, only to be acquired by practice, are necessary to do the work with precision and neatness. *H. W. Ward, Longford Castle, Salisbury.*

THE HARDY FRUIT GARDEN.

PLANTING.—This work should be speedily pushed forward in favourable weather, so that it may be brought to a close by the end of the present month. In cold wet soils, planting often is deferred during the months of January and February, and brought to a close in the month of March. But where there is a great deal to do, planting may be done at any time,

except in very frosty weather in heavy land, scattering a few shovelfuls of fine and moderately dry soil over and amongst the roots. Standards, &c., should be afforded supports against wind, but in such manner as to allow the trees to sink as the soil settles. Much treading of the soil in a wet state should be avoided, but so soon as the surface is moderately dry, a good trampling over the roots does good.

All trees arriving from nurseries should at once be heeled-in till required for planting, the damaged roots being trimmed, so that nothing further will be required. If dry, immerse them completely in water.

DAMSONS stand the wind without much injury to crop or crown, and are therefore suited for the outside lines of orchards of other fruit trees, and they should stand thickly enough together that the future heads may afford shelter for the other trees. Farleigh Prolific, Blue Prolific, and Shropshire or Prune are good varieties of Damsons, all being serviceable in the household, and good market fruit. Plums, Victoria, Belgian Purple, Early Prolific, the Czar, Jeffersons, and, as a late one, Monarch, succeed well as standards, and are excellent as wall trees.

PEACHES AND NECTARINES.—The lifting and planting of these should be completed without delay, and, if good results are to be expected, plant on good, very firm soil that has not grown fruit trees previously, adding to the staple some fresh loam, old mortar rubbish, and burnt earth. If the soil be poor, a little manure should also be afforded, so as to furnish food for the roots at the start; keep most of the roots near the surface. If the holes have been properly prepared and drainage well done, with some turves, grassy side downwards, laid over it, fill up the holes and trample all firmly, but pricking the top soil before resting the roots thereon; keep the tree upright, and its stem 6 inches away from the wall at the bottom, shake a little fine soil amongst the roots, raise the tree a short space, drop it into its place, and cover to the depth of 6 inches, afterwards slightly mulching with long manure.

PEARS should also be planted similarly to Peaches. Cordons if planted in new soil in the place of old worn-out trees soon begin to bear fruit, and repay their cost and that of planting. These vigorous young trees are worth many of the old useless trees one sees in some old gardens, which are retained for what they have been but will never be again. *H. Markham, Mereworth Castle, Maidstone.*

THE ORCHID HOUSES.

THE EAST INDIA-HOUSE.—At this season it is usual for the Orchid-grower to make as bright a show of flowers as he can; this may be done very successfully, if *Phalenopsis amabilis*, *Calanthes* in variety, and *Cypripediums* are grown in quantity, notably *C. Spicerianum*, *Leeanum*, and *insigne*, these plants adapting themselves to easy and pleasing arrangements—a matter which should be studied by the grower of Orchids. The season just past, that has been so unsatisfactory for fruits and flowers, has been very suitable for *Phalenopsis*, and our plants have done better than for some years past, which I attribute in great measure to the small amount of sunshine that we have received, which goes to prove that the shading usually afforded these plants is not enough whilst growth is taking place. I paint the roof-panes, and make use of a thick roller-blind.

The newly-imported *Dendrobium Phalenopsis* are throwing up flower-spikes, so that it will probably prove to be an autumn-flowerer, thus adding to its value. The beautiful *D. Statterianum* and *D. bigibbum* last each for about two months in flower, as do *D. superbiens* and *D. Gouldii*. These are all winter-flowering *Dendrobiums*, each being sufficiently distinct that no collection seems quite complete without at least one plant of each. *D. heterocarpum* is a very useful *Dendro* for winter, as is *D. Findleyanum*. The old *D. nobile* is too well known to call for any remark; but I would just say this, that any amateur who is thinking of buying some of these for next year's flowering at Christmas-time, should buy those which are sold in flower at this season. It is a very easy matter for anyone to keep plants back when coming into flower, but it requires a skilled grower to bring a plant into flower successfully, without injury to the plant, in much less than twelve months. I am of course alluding now to those plants which have been growing in this country at least two years; imported plants will flower at all times.

THE INTERMEDIATE-HOUSE.—*Sopronites grandiflora* is an attractive plant, and its flowers when

they are arranged together with *Masdevallia tovarense* look charming by the contrast; the plant is easily grown, and should therefore be in every amateur's collection. It is usually called a cool-house plant, but I never was successful with it until I gave it a few more degrees of warmth; grown in baskets or pans and hung up near the light, the plants grow and flower admirably. We always pick all the peat and sphagnum moss from the roots annually, and wash the latter in soft water, also the basket. They require to be kept moist at the root even during the winter, and during growth too much water cannot be afforded, unless there is too much potting material about them, than which nothing is worse. The atmosphere in the different divisions should be kept rather dry, and the temperature about 62° for the East-Indian Orchids, 58° for *Cattleyas*, 55° intermediate-house, and 45° the *Odontoglossums* and cool Orchids, always remembering to ventilate every department more or less. *A. G. Catt, Parkfield.*

PLANTS AND THEIR CULTURE.

STREPTOCARPUS.—Considering the ease with which this species of plant may be grown, it is remarkable that they are not more frequently met with in gardens than is the case. Seeds of the plant may be sown in a pan of loam and leaf-soil in equal parts sifted through a fine sieve, sufficient sand being added to keep the whole porous. Give the pan of soil a slight watering, and when it is dry on the surface, sow the seeds thinly and evenly, and place a sheet of glass over the pan. If it be stood on some moisture-holding material, no more water will be required till the seeds have germinated. At this season of the year the seed-pans may be placed in the propagating-house, where the temperature is kept at from 55° to 60°. When the seedlings are large enough, prick them off into pans or shallow boxes, still keeping them in a structure where the temperature does not fall below the point indicated. In the course of six weeks from the time they are transplanted they will be ready for a shift into small pots, when a compost, consisting of two parts loam, one each of leaf-soil and decayed manure, and sand in proportion, may be used. During the summer months, the plants may be grown in the greenhouse or cold frame, always taking precaution to shade them from bright sunshine. The varieties *S. Rexii*, *S. parviflorus*, and *S. polyanthus*, will be found most suitable where only an ordinary greenhouse is at command, but where a little heat is at hand, the list may be extended by such varieties as *Watsonii*, *Dunnii*, and *Kewensis*. The present is a most suitable time to sow seed of *Streptocarpus*.

POTTING MATERIALS.—When the weather is favourable, lose no time in laying-in a supply of soils, getting the loam from an old pasture which has plenty of plant-roots in it, as this will be found more lasting, and afford better food for plants than any other. In cases where it is impossible to procure turf from an old pasture, and where it is found that the quality is not good, it will be advisable, when stacking that which is obtainable, to place between every second layer of turf a layer of sheep or deer's droppings, or failing these, half-decayed stable manure, which will greatly enrich the loam by the time it is required for use. In cutting the turves, it is a mistake to cut them too large; a most suitable size is 14 inches by 8 inches, and 1½ inches in thickness, and to have the whole neatly stacked, if possible, when the weather is dry.

LEAF SOIL.—A quantity of this should likewise be prepared, and some of it taken under cover, in case of a long spell of severe weather. The best leaf-mould is generally found in an old rookery, where the tree leaves have been allowed to remain and decay for a number of years, and with the manure from the birds this makes a very rich potting material.

PEAT.—The stock of peat should be examined, and note taken of the quantity which will be required for the coming season. The above remarks will also apply to the store of silver sand, cocoa-nut fibre, pots, stakes, &c., which should be got in readiness for the busy season. All surplus pots should be washed, sorted and stacked away. It is a good time to put the potting shed in good order, and for limewashing the walls, soil bins, &c. All this kind of labour may be done when the weather is unfavourable for out-door work. *R. Milner, Peartree Castle, Swansea.*

EDITORIAL NOTICES.

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

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY, DEC. 14—Eastbourne Horticultural Society.
TUESDAY, DEC. 15—Sittingbourne.
THURSDAY, DEC. 17—Linnean.

SALES.

MONDAY, DEC. 14 { Dutch Bulbs, at Protheroe & Morris' Rooms.
14,870 Liliom auratum, also other Lilies and Bulbs, at Protheroe & Morris' Rooms.
TUESDAY, DEC. 15 { Fruit Trees, Roses, &c., at Charlton Nursery, near Shepperton, by Protheroe & Morris (two days).
Plants from Belgium, Begonias, Ferns, &c., at Protheroe & Morris' Rooms.
WEDNESDAY, DEC. 16 { Border Plants, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY, DEC. 17 { Glass Frettings, &c., at Balham, by Protheroe & Morris.
Rose and Fruit Trees, at Stevens' Rooms.
FRIDAY, DEC. 18 { Orchids, at Protheroe & Morris' Rooms.
Dutch Bulbs at Protheroe & Morris' Rooms.
SATURDAY, DEC. 19 { Lilioms, Dutch Bulbs, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—40°·3.

REVERTING to this subject, see *ante*, p. 616, we believe that the first to apply the electric light to cultivation upon the larger scale were made in this country by SHEPPARD; others have also endeavoured to make use of it, but with indifferent success. More recently the distinguished Russian agriculturist, SPECHNEV, has been carrying on experiments on the larger scale for several years continuously. SPECHNEV commenced by watching the application of electricity to the germination of Wheat, and he observed that the growth was much more rapid when this application was made than under ordinary circumstances.

The next experiments were made with dynamic electricity. Large plates of zinc and copper were connected with wires, and buried in the soil; between these plates Beans, Carrots &c., were cultivated, and in every case a finer crop was obtained.

Static electricity was next experimented with, the plants being arranged within the influence of collectors of atmospheric electricity. For five years experiments were systematically conducted, and the results appear sufficiently indicative of the powerful action exerted by electricity on the growth of plants. Here are some figures for comparison, in each case the same quantity of seed being grown:

Description.	Electro-culture.		Ordinary Culture.
	Kilogrammes per hectare.		
Wheat	{ Grain ...	1,641	1,282
	{ Straw ...	4,489	2,800
Corn	{ Grain ...	2,000	1,200
	{ Straw ...	2,500	2,600
Potatoes	{ Tubers ...	19,500	17,500
	{ Stalks ...	2,400	1,800

A hectare is about 2 English acres.

We may now notice a successful experiment recently carried out by Mr. RAWTON, of Arlington, Massachusetts, U.S.A. He has begun examining the action of electric rays upon plant-

life, and has succeeded in proving that it would be of considerable advantage to gardeners in forcing vegetables, &c., under glass for the early markets.

Mr. RAWTON has confined his experiments to the growth of Lettuces in a greenhouse about 70 yards long by 8 wide. Every day the greenhouse was illuminated by means of an arc lamp, and throughout the night as well. We do not know whether the light was softened at all by means of glass shade or otherwise; but, bearing in mind the researches of Sir W. SIEMENS, we suspect that some such device was resorted to.

The results obtained by Mr. RAWTON were of a highly encouraging nature, and showed an improved rate of growth, equal to about 20 per cent.; so that at this rate the gardener who uses the electric light gains one week in every five on his competitors who trust to unassisted Nature—a fact which is well worth pondering over.

There is a market for everything that is "out of season" and the gardener who first exploits the market can command almost any price, and, according to Mr. RAWTON, will make profits which will recoup the installation and maintenance of the electric light. This gentleman ought to know what he is about, and we may note that he has been so encouraged by the financial success of his experiments that he is laying out greenhouses fitted with the electric light on a large scale.

A small fact brought out by these American researches is worth noting—viz., that whilst the electric light hastens the growth of plants, it does not encourage insect pests.

Meanwhile, researches have been going on nearer home. Our French contemporaries are always well to the front in exploiting new ideas, and the alleged affirmative results which have lately been obtained in the application of electric light and electric currents to the growth of certain plants, have set a good many others at work upon this curious development of electrical science.

Fresh evidence in favour of the advantage of employing electricity in plant culture has been recently adduced by M. BARAT, of Aiguillon, Lot et Garonne, who is an enthusiastic believer in employing this agent, and has been at work with it since 1880.

In spite of the suspicion with which one is generally inclined to regard the experimental results obtained by admitted enthusiasts, we must say that M. BARAT'S investigation bears every appearance of being genuine, and the account which he gives of it by no means highly coloured.

Electricity was applied to the cultivation of Potatoes, Tomatoes, and Hemp—typical plants which indicate no bias in their selection. A row of Hemp was subjected intermittently during its growth to the action of an electric current, which was passed through the soil in which it was planted. When the stalks were mature, they measured on an average 18 inches longer than those in a row of Hemp which had been grown under otherwise similar conditions for the same space of time.

Patches of Potatoes were similarly treated, some being grown in the path of an electric current, whilst others were cultivated normally. Equally remarkable results were obtained in this case also; for whilst 1 kilogramme of seed Potatoes produce 21 kilogrammes of large and well-conditioned tubers, the same quantity of seed grown in a similar but not electrified patch only yielded a crop of 12·400 kilogrammes, and the tubers were by no means so large nor so healthy as in the former instance.

The influence of electricity appears to be exerted chiefly in promoting early maturity; at least, this was notably the case when the Tomatoes were experimented upon, for the fruit ripened eight days earlier. Now, the late Sir W. SIEMENS showed that under the influence of the electric light, fruits like Strawberries, &c., ripened much faster, and Wheat and other plants grew much faster; and hence, if M. BARAT had also kept the electric light shining on his Tomatoes at the same time as he was passing the electric current through the soil, it is possible that still more remarkable results might have been obtained.

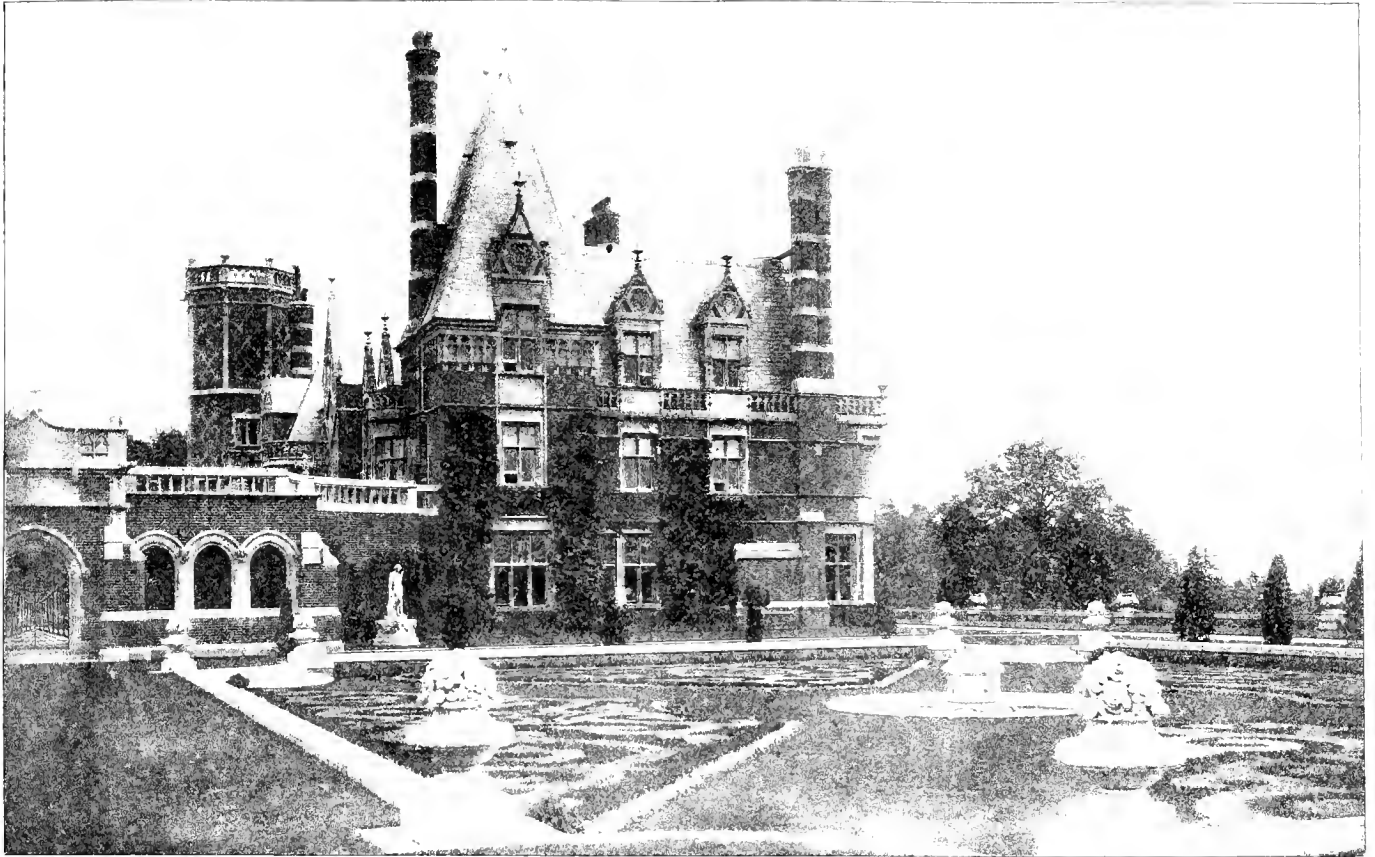
The experiments which we have just quoted have been carried out during the past season; during their progress, M. BARAT observed an important fact, which is worth recording. When two metal plates were sunk in the soil, and connected by means of wires with the poles of a battery, and when manure was placed in the neighbourhood of one of these plates, on the current being passed, the constituents of the manure were transported through the soil in the direction of the other plate. Thus the fertilising effects of a small quantity of manurial substance was spread to a considerable distance, and in much less time than it could be effected by ordinary liquid diffusion.

This is new evidence also in favour of the theory adopted by SPECHNEV, the Russian agriculturist, whose researches into the cause why an electric current appears to produce great fertility in the soil through which it is passed, led him to ascribe it to a kind of electrolytic action, whereby the active principles existing in the soil, or in the manure with which it is treated, are scattered in such a way that they are brought into a more available position as regards the roots of the plants, and thus the latter get a better food supply.

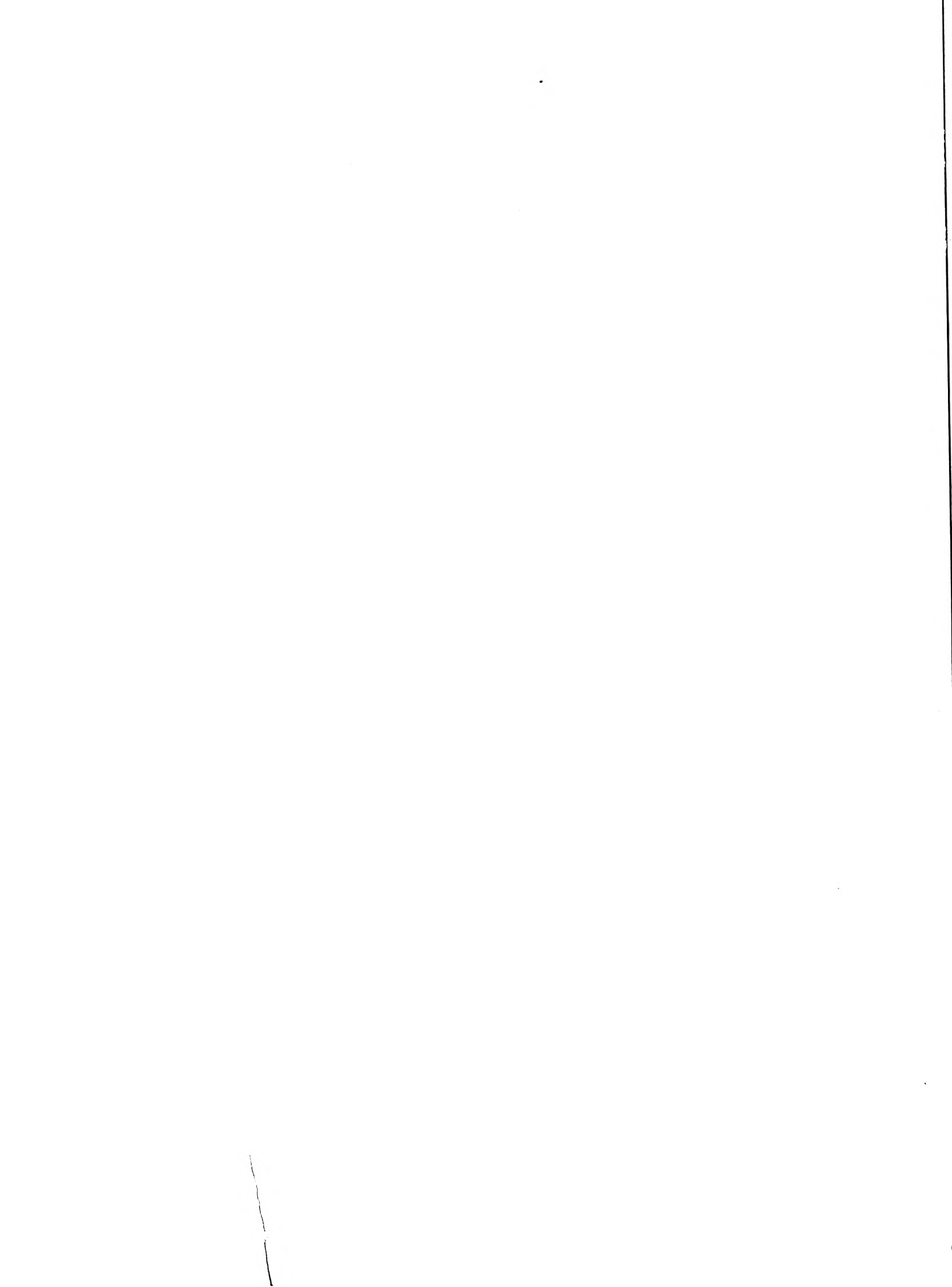
A theory which has been promoted for explaining the favourable action of electric light upon plant-life, is based upon the richness in actinic rays which it possesses. It has been proved that the luminous rays of sunlight are accompanied by others which possess heating power, and by others also which are chemically active; these last are called the actinic rays, and the chemical action of sunlight is called actinism. This explanation is open, perhaps, to some objection, but it is simple, and easily understood, and practically correct. It is believed that the assimilation of material adapted to vegetable growth from the inorganic binary compounds in the soil, and the carbonic acid and water depends upon the action of these actinic rays upon the cell contents of plants. Now the electric light is exceptionally rich in actinic rays—i.e., rays which are chemically active—and hence upon this fact its favourable influence on vegetation depends.

Professor BAILEY, of Cornell University, has recently published, in the *Bulletin* of the Agricultural Department of that College, an interesting account of some experiments made by him, and which he compares with the experiences of DEHÉRAIN and of SIEMENS. Professor BAILEY'S conclusions are as follow:—

"It is impossible to draw many definite conclusions from the above researches. The many conflicting and indefinite results indicate that the problems vary widely under different conditions and with different plants. Yet there are a few points which are clear: the electric light promotes assimilation, it often hastens growth and maturity, it is capable of producing natural flavours and colours in fruits, it often intensifies colours of flowers, and sometimes increases the production of flowers. The



MINLEY MANOR, NEAR FARNBORO'.



experiments show that periods of darkness are not necessary to the growth and development of plants. There is every reason, therefore, to suppose that the electric light can be profitably used in the growing of plants. It is only necessary to overcome the difficulties, the chief of which are the injurious influences upon plants near the light, the too-rapid hastening of maturity in some species, and, in short, the whole series of practical adjustments of conditions to individual circumstances. Thus far, to be sure, we have learned more of the injurious effects than of the beneficial ones, but this only means that we are acquiring definite facts concerning the whole influence of electric light upon vegetation; and in some cases, notably in our Lettuce tests, the light has already been found to be a very useful adjunct to forcing establishments.

"The experiments suggest many physiological speculations, upon which it is not the province of this bulletin to enter. Yet two or three of them may be mentioned. It is a common notion that plants need rest at night, but this is not true in the sense in which animals need rest. Plants have simply adapted themselves to the conditions of alternating daylight and darkness, and during the day they assimilate or make their food, and during the night, when, perforce, assimilation must cease, they use the food in growth. They simply practice an individual division of labour. There is no inherent reason why plants cannot grow in full light, and, in fact, it is well known that they do grow then, although the greater part of growth is usually performed at night. If light is continuous, they simply grow more or less continuously, as conditions require, as they do in the long days of the arctic regions, or as our plants did under continuous light. There is no such thing as a plant becoming worn out or tired because of the stimulating influence of continuous light.

"It would seem, therefore, that if the electric light enables plants to assimilate during the night, and does not interfere with growth, it must produce plants of great size and marked precocity. But there are other conditions, not yet understood, which must be studied. Our Radish plants, and many others, were earlier but smaller under the influence of the light. Observation and chemical examination showed that a greater degree of maturity had been attained.

"Perhaps they assimilated too rapidly, perhaps the functions of the plant had been completed before it had had time to make its accustomed growth. Perhaps the highly refrangible and invisible rays from the electric lamp have something to do with it. In fact, this latter presumption probably accounts for much if not all of the injury resulting from the use of the naked light, for the effect of the interposition of a clear pane of glass is probably to absorb or obstruct these rays of high refrangibility. Good results which follow the use of a globe or a pane of glass show, on the other hand, that the injury to plants cannot result from any gases arising from the lamp itself, as has been supposed by some observers. In our own experiments, particularly with the Brush lamp, there was no perceptible odour from the gases of combustion; and it may also be said that commercial forcing-houses, like our own, are not tight enough to hold sufficient quantities of these gases to injure plants.

"It is highly probable that there are certain times in the life of the plant when the electric light will prove to be particularly helpful. Many experiments show that injury follows its use at that critical time when the plantlet is losing its support from the seed, and is beginning to shift for itself, and other experiments show that good results follow its later use. This latter point appears to be contradicted by DEBÉRAIN'S results, but his experiments were not conducted under the best normal conditions.

"On the whole, I am inclined towards SIEMENS'S view, that there is a future for electro-horticulture."
"L. H. BAILEY."

At present, then, there is naturally some difference of opinion concerning the use of electricity in agricultural and horticultural operations, and, as usual, there are some who entirely scout the

idea that any good can result, or, at least, that there is "any money in it." On the other hand, there are others who as strenuously affirm that we are on the eve of very important discoveries, which shall lead to unexpected developments in the practical application of electricity. Perhaps the real truth lies somewhere between these two extremes.

OUR ALMANAC.—Secretaries of Societies and others are earnestly requested to forward shortly, the dates of show fixtures, and meetings of horticultural societies of any kind for 1892, for insertion in the Almanac to be published in our issue for January 2.

THE EX-EMPEROR OF BRAZIL.—DOM PEDRO, the former sovereign of Brazil, who died in Paris on the 4th inst., was remarkable not only as a model sovereign, but for superior intelligence generally, and for his sympathy with literature, science, and art. In these particulars he was considerably in advance of his subjects. He afforded great encouragement in the publication of the magnificent *Flora Brasiliensis*, in the preparation of which several of our English botanists have taken part, while his actual scientific attainments were such that even the Academy of Sciences of France elected him among its corresponding members.

M. ALPHAND.—This gentleman, who died in Paris early this month, was seventy-four years of age, having been born at Grenoble in 1817. By profession an engineer, he was also City Surveyor of Paris, and to him are due many of the architectural effects of that city, as well as the extensive planting of streets, squares, and boulevards. M. ALPHAND was the author of a magnificent work, published by Rothschild, on the *Parks, Gardens, and Promenades of Paris*. M. ALPHAND had much to do with organising the successful exhibition of 1889.

LINNEAN SOCIETY.—On the occasion of the meeting on Thursday, December 3, Professor STEWART, President in the chair, the following gentlemen were elected Fellows:—Sir WALTER SENDALL, Messrs. T. M. MACKNIGHT, W. A. BLAUBER, C. FROST, H. SUTHERLAND, J. KEYS, W. S. CAMPBELL, A. MOLINEUX, and W. H. STRACHAN. The President announced the recent bequest by the late Sir GEORGE MACLEAY, K.C.M.G., of a marble bust of his father, the late Dr. WILLIAM SWAMP MACLEAY, formerly a Fellow and Vice-President of the Society. The botanical secretary read a paper by Mr. W. WEST, on "Fresh-water Algae of the West of Ireland," and exhibited, by way of illustration, a number of preparations under the microscope, and a series of beautiful drawings by the author. The paper was criticised by Messrs. A. W. BENNETT and E. M. HOLMES, both of whom testified to the excellence of the work done, and the value of the drawings. At an evening meeting, proposed to be held on Thursday, December 17, at 8 P.M., the following papers will be read:—1. "Development of the Head of the Imago of Chironomus," by Professor L. C. MIALL and Mr. A. R. HAMMOND. 2. "On Two Species of Cumacea in New Zealand," by Mr. G. M. THOMSON.

SMITHFIELD CLUB.—Roots, including Mangel Wurzel, Swedes, Turnips, &c., were somewhat extensively shown at the Smithfield Club Cattle Show, which opened on Monday last at the Agricultural Hall, Islington. Messrs. SUTTON & SONS, CARTER & Co., JARMAN & Co., DICKSONS (Chester), and HARRISON & SONS, had their usual displays of agricultural seeds as well, while Potatoes were not forgotten. A large collection of tubers was exhibited by Mr. WHITEHEAD COUSINS, Covent Garden, including the best market-growing varieties. Among other things Messrs. J. CHEAL & SONS, Crawley, showed a fine collection of well-coloured Apples, the most conspicuous of which were Blenheim Orange, The Queen, Warner's King, Cellini, and a new variety named Atalanta.

THE SACRED PLANT OF THE DRUIDS.—Mr. STEELE, of the Edinburgh Naturalists' Society, is

trying to prove that the Beef-steak Fungus, and not the Mistletoe, is the sacred plant of the Druids. He infers this, because the Fungus is parasitic on Oaks, while the Mistletoe is not, saying further that the red juice of the Fungus was shed by the Druids, when sacrifices having been abolished, human blood could not be obtained for their ceremonials.

MR. G. T. BETTANY, who died from heart disease on December 2, is known in the literary world as the author of several books of biography and science, including a life of CHARLES DARWIN, and as English editor of *Lippincott's Magazine*. Among other appointments, he held for eight years that of lecturer on Botany at Guy's Hospital.

JAPAN SEDGE MATS FOR PLANT PROTECTION.—At McARTHUR'S Nursery, Maiden Vale, London, W., specially-made sedge mats, 6 by 5 feet, manufactured in Japan, are employed to replace the untidy Archangel mats, which have a habit of fraying out and littering the gardens where they are used. These Japan mats are neater, warmer, and it is said more durable, while their cleverly-finished edges render it impossible for them to get ragged. In some good gardens where they have been tried, they have given great satisfaction.

"THE ROSARIAN'S YEAR BOOK FOR 1892," as edited by the Rev. H. HOLYWOOD D'OMBRAIN, A.B., Hon. Sec. of the National Rose Society, is announced for publication on January 1, 1892. Its contents comprise articles on "Mr. T. W. Girdlestone (with photograph)," by the Editor; "The Ethics of Rose-showing," by Mr. E. B. Lindsell; "Experiments in Rose-hybridising," by the Right Hon. Lord Penzance; "Rose Jettings in 1891," by Mr. Alex. Hill Gray; "Roses near big cities," by Mr. J. Bateman; "The Rose, and the National Rose Society in 1891," by the Editor; "The Rose as a Garden Flower," by Mr. W. J. Grant; "Stocks," by Mr. F. Cant; "The Comparative Hardiness of Tea Roses, and their Winter Protection," by Mr. Geo. Paul; and "The Rose Weather of 1891," by Mr. E. Mawley, F.M.S., Hon. Sec. National Rose Society. The publishers are Benrose & Sons, 23, Old Bailey, London; and Derby.

THE CRÉPIN CELEBRATION.—On the 6th inst. an imposing demonstration was held in honour of Professor CRÉPIN, the Director of the Brussels Botanic Garden, and Secretary of the Botanical Society of Belgium. The meeting was presided over by Professor GRAVIS, and was attended by the Minister of Agriculture, the Burgomaster of Brussels, and most of the colleagues and associates of M. CRÉPIN. A prize, to be called the "Crépin Prize," was established, and the honoured Professor was advanced to the grade of Officer of the Order of LEOPOLD. A banquet followed the official business. We have received from our correspondent a long account of the proceedings as we are about to go to press, on which account we must postpone further details till our next issue.

NATIONAL ROSE SOCIETY.—The annual meeting and dinner of this flourishing Society were held on Wednesday last at the Horticultural Club, Hotel Windsor. The following arrangements for 1892 were decided upon:—The Tea and Noisette Exhibition will be held under the auspices of the Royal Horticultural Society, at the Drill Hall at Westminster, on Tuesday, June 21; while the Metropolitan Exhibition will take place at the Crystal Palace on the first Saturday in July. At the request of the Mayor and Corporation of Chester, the Society's Provincial Exhibition will be held in that city on Thursday, July 14. A proposed new regulation, that "At the two principal exhibitions of the Society, amateur exhibitors shall be required to show according to the number of plants of 'exhibition' varieties grown by them," was proposed by Mr. C. J. GRAHAME, seconded by the Rev. F. R. BURNSIDE, and ultimately referred to the Committee to see in what manner the regulation can be carried out. The financial statement was satisfactory.

BRITISH FLIES.—Mr. F. V. THEOBALD is publishing in monthly parts, through Mr. ELLIOT STOCK, an account of British flies, illustrated with woodcuts. When one considers the enormous losses inflicted on farmers and gardeners by one class of flies only, the Cecidomyiidae—a loss that has to be reckoned by hundreds of thousands of pounds every year, it becomes evident that a good account of their structure and mode of life are all important in seeking means to prevent or palliate their attacks. The book promises to be well done, but we may call the author's attention to the circumstance that the Baberry is not the same as *Barbarea vulgaris*. Oh! those dreadful popular names!

THE CHICAGO EXHIBITION.—On the roof of the horticultural building, around the central dome at the Chicago Exhibition, an elaborate display of roof-gardening will be made. It is expected that this will not only be pleasurable to visitors, but will afford valuable suggestions that will be utilised by persons who live in large cities, and are deprived of gardens and lawns. In the centre of the horticultural building will be a miniature mountain, 70 feet high, upon which will grow tree Ferns and Palms, and other vegetation, finding there a congenial home. A stream will dash from one declivity to another. Beneath this rock-mountain will be a cave, 80 feet in diameter and 60 feet high, brilliantly lighted by electricity, where, during the whole six months of the Exposition, the experiment will be tried whether plants will grow under electric light as well as under sunlight. Mr. J. THORPE originated the plan.

PUBLICATIONS RECEIVED.—*The Journal of Botany*, West, Newman & Co., 54, Hatton Garden, E.C.—*The Horticultural Directory and Year Book for 1892*, published at the *Journal of Horticulture* Office, 171, Fleet Street.—*Cassell's Christmas Annual Yuletide*.—*The Queen*.—*The Princess*.

PLANT PORTRAITS.

ALLAMANDA WILLIAMSII, *Garden*, November 21.

NOTHOLENA RIGIDA, n. sp.—A new species from Monterey, Mexico. Collected by Pringle, and described and figured in *Garden and Forest*, November 4, by Mr. G. E. Davenport. It has lanceolate bipinnate fronds, 8 to 12 inches long. The edges of the pinnules revolute. The stalks are a dark chestnut brown.

PEAR BEURRÉ DE MORTILLET.—Fruit large, or even very large, skin yellow flushed with red. Flesh fine, melting, white, juicy, sugary, and perfumed. A good market Pear, in season at beginning of October.

RONDELETIA SPECIOSA, *Revue Horticole*, November 16.

VITIS ROMANETI VARS., *Revue Horticole*, 1891, p. 520.

NOTICES OF BOOKS.

MY GARDENER. A PRACTICAL HANDBOOK FOR THE MILLION. By M. W. Ward. (Eyre & Spottiswoode.)

The most effective way of reviewing such a useful and practical book as this, is to allow the author to speak for himself. Here, for example, is the writer's account of Cabbages, p. 29:—“(*Brassica oleracea capitata*). This is a hardy biennial, derived from *B. oleracea*, which is found wild in Cornwall, Wales, Yorkshire, and near Dover, in Kent. It is also found wild on the coasts of France, and of many European countries. It was known to the ancient Gauls by the name of Chou Capa. Of the Cabbage, like many other garden vegetables nowadays, there are too many varieties enumerated in trade lists. They want weeding out considerably, as it is rather bewildering to those not practically acquainted with the leading sorts and varieties of vegetables to make a good selection from a trade list. The wisest plan in this case would be to leave the selection to the seedsman. However, following the plan which we adopted when beginning this work, we shall make the matter of selection easy for those who consult these pages; therefore, out of a

hundred or more varieties of the Cabbage which are to be found in catalogues, we shall mention only a few of the very best, which will serve the purpose of any cultivator as well, and indeed better, than if he grew all the varieties named in the catalogue. They are Carter's Early Heartwell Marrow, Sutton's All Heart, Veitch's Matchless, Wheeler's Imperial, Welch's Emperor, Daniel's Defiance, Nonpareil, Enfield Market, Red Dutch for pickling, and Rosette Colewort for sowing in June for early winter use.” Of each of these a short description is given, and then follows on p. 30 a paragraph relating to the soil and its preparation.

Dipping into fruit culture, the author remarks:—“No cottage garden can be considered complete without it has a due complement of Apple, Pear, Cherry, and Plum trees, Gooseberry and Currant bushes, Raspberry and Strawberry plantations. The varieties of the several kinds that are known to succeed best in each district should be borne in mind by the purchaser in sending his fruit-tree order to some nurseryman having a reputation for the growth and for sending out healthy trees, true to name. To such a man the intending purchaser, who is not quite sure as to the most suitable of the several kinds and varieties to grow, may safely leave the selection, (1) simply giving the names of the sorts he may already have, and (2) stating how many trees each of Apples (for cooking and dessert), Pears, Plums, &c., he requires, together with the character and depth of the soil in his garden or orchard. Those having gardens enclosed by a wall, or boarded by a fence, should grow one or more trees of Peaches or Nectarines and May Duke Cherries on the south and west sides; Victoria, Golden Drop, and Old Greengage Plums, Marie Louise and Chaumontel Pears on the east side, and Morello Cherries on the north side. Fruit trees of every description, including bush fruit and Strawberries, do best in a deep yellow loam, resting on limestone or a gravelly subsoil, and inclining to be heavy rather than light.”

A short list of Apples, with two striking illustrations of Beauty of Bath, is prefaced by this brief note on the Apple (*Pyrus malus*). “The Apple, termed in its wild state the Crab, is indigenous to Britain, as to most warm and temperate parts of Europe. It will succeed in climates too cold for the Pear, Plum, and Cherry, and blossoming later than any of these (May); it therefore generally escapes the frost, which frequently destroys the crops of the fruit trees indicated.”

Dessert Varieties.—Beauty of Bath, Irish Peach, Cox's Orange Pippin, Red Astrachan, King of the Pippins, Cockle Pippin, Nonpareil.

Culinary Varieties.—Keswick Codlin, Lord Suffield, Hawthornden, Warner's King, Bramley's Seedling, and Blenheim Orange.

A baker's dozen that it would be difficult to beat, though among the suitable varieties we hold that one Codlin, Lord Suffield, is sufficient, and would substitute Cellini for Keswick Codlins, and also make sure of growing the New Hawthornden not the old one.

Of flowers it is to be regretted that space cannot be found for an account of the Violet. Passing on to p. 217, the author thus writes of the Anemone coronaria (Wind flowers): “The Anemone is associated with our earliest recollections of garden flowers, the erect spikes terminating with large flowers of bright and soft shades of colour, showing off to great advantage above the dark and pale green, finely divided, and handsome leaves, and create a favourable impression in the minds of all who see them in early spring. The garden varieties have mostly been obtained from *A. coronaria*.” After describing the soil, taking-up, and storing, we have a list of half a dozen double French varieties. Among the flowers may also be found a description of about 100 varieties of Roses. The proofs have not been so carefully read as they might have been, especially as regards the names of plants. The illustrations are mostly from catalogues, and are misleading as to the relative size and proportion of the objects depicted, as no scale is given to aid the reader.

Nevertheless, the book is replete with valuable cultural notes indispensable to the millions who are now turning to gardening as a source of pleasure and of profit.

THE BIRDS OF OUR RAMBLES.

This is the work of the well-known bird-book writer, Mr. Charles Dixon. It is an interesting volume, not too scientific to suit the general reader, for whose instruction, indeed, it is principally intended. The chapters treat respectively of many of the birds seen around our homesteads, gardens, fields, woods, mountains, and sea-shores, and include short descriptions intended to aid the casual observer to identify the various species by the peculiarities of their flight, note, or general appearance.

Thus, when speaking of swallows and martins, the author reminds us of the differences between them, although “to the unorthodox both birds are known indiscriminately as ‘swallows,’ and are generally alluded to as such.” Another popular error is that which “associates the swift with the swallow, and certainly, so far as habits and outward appearance go, there seems much in favour of the supposition. But the swift is not a Passerine bird at all, and belongs to the great order Picariae, a group which contains, among others, the goatsuckers, the kingfishers, the woodpeckers, and the hummingbirds.” Mr. Dixon does not profess to mention all of the birds to be seen in country rambles, and, owing to the classification of the chapters into localities, some common species are mentioned more than once.

The book is illustrated by Mr. A. T. Elwen, is well got up, and published by Messrs. Chapman & Hall, in a style uniform with other books by the same author.

In conclusion, we repeat that *Birds of our Rambles* will prove especially useful to inquiring amateurs as a book of reference—a general index would make it still more suitable for this purpose—while those who read only for pleasure will like the descriptions of old favourites and familiar friends, as well as those of rarer and less-known species.

A HANDBOOK OF BRITISH COMMERCE, ETC.

By P. L. Simmonds, F.L.S. (London: Moffatt & Page.)

It is obvious that some 200 pages of even moderately small type must be quite inadequate to do justice to a handbook of British commerce. They may, however, serve to indicate, to some extent, the variety and volume of British imports and exports, and this function is fulfilled by the pages of the little volume before us. When we say that it is the work of a skilled compiler, Mr. P. L. Simmonds, who long ago won his spurs, we have said enough to recommend it to the notice of those by whom indications rather than exhaustive treatment are desired. It consists, in fact, of an alphabetical index of commercial substances and manufactured products in a very condensed form, how much so may be illustrated by the circumstance that four lines are all that are devoted to acetic acid, and so on in proportion. Of “Burgundy” all that we are told is that it is “a light French red wine;” while “cannon” are described as “large military engines, pieces of ordnance for discharging balls.” “Cedar” is badly treated, it being difficult to discern what is meant; but it seems certain that neither of the plants mentioned is (except in a commercial sense) a Cedar, whilst the true Cedar is not named. Now that an outcry is made about the use of feathers for the decoration of ladies' garments, it is as well to note that monkeys, our near relatives, are almost as much persecuted by the fashionable world as are birds. Mr. Simmonds tells us that in 1887 more than 118,000 monkey-skins were shipped from the Gold Coast alone.

A very useful addendum to Mr. Simmonds' little book consists in the list of imports in 1890, together with their quantities and value. In this list Apples figure to the amount of two and a half million bushels, of the value of £780,072. Onions were

imported to the amount of nearly four millions of bushels, their value being £724,020. Surely, a large proportion might have been grown at home. Our total imports are given as amounting in value to £420,691,997, while we export no more than a quantity the value of which is given at £328,252,118.

HOME CORRESPONDENCE.

THE CLASSIFICATION OF ROSE AMATEURS.— Though heartily agreeing with a great deal of what "Rosa" writes on p. 639, respecting the above, I must say I cannot follow him when he says the plan of counting the number of plants as a guide to the

bulk. More depends upon the staging than many think, and it is not always the best Roses which win. Such benefits as naturally-good Rose soil and sheltered or favourable positions can, I admit, not be taken into due consideration when classifying exhibitors. But we can do something towards making things more fair for the smaller growers by limiting the quantity of exhibition Roses to be grown by any competitors in certain divisions. "Rosa" rightly remarks that many small growers are found among the leading prize-takers. Notably, Mr. A. Slaughter, of Steyning, who has often taken very high honours in the higher classes for amateurs. Mr. Slaughter's ground is very small, and he has room for but few plants, as I know. When a small grower like this wins against heavy men, that is so much more to his credit. I name Mr. Slaughter

To my mind this is plain enough. If he cannot win against men of his own calibre, why should he compete against little men? I quite agree with "Rosa" when he says, "Let the best Roses win;" and there are some small classes set apart for all and any competitors at the National Rose Society's shows; but I do not think it fair to compel small growers to compete against all who choose to drop into their class. Perhaps if there were a few more larger "open" classes, as well as some such scheme as Mr. Grahame's, it would meet the difficulty to a great extent. Many amateurs of my acquaintance are very strongly in favour of Mr. Grahame's idea. A. Piper.

JERUSALEM ARTICHOKE.—I must really apologise for again venturing to ask for space for a few lines.

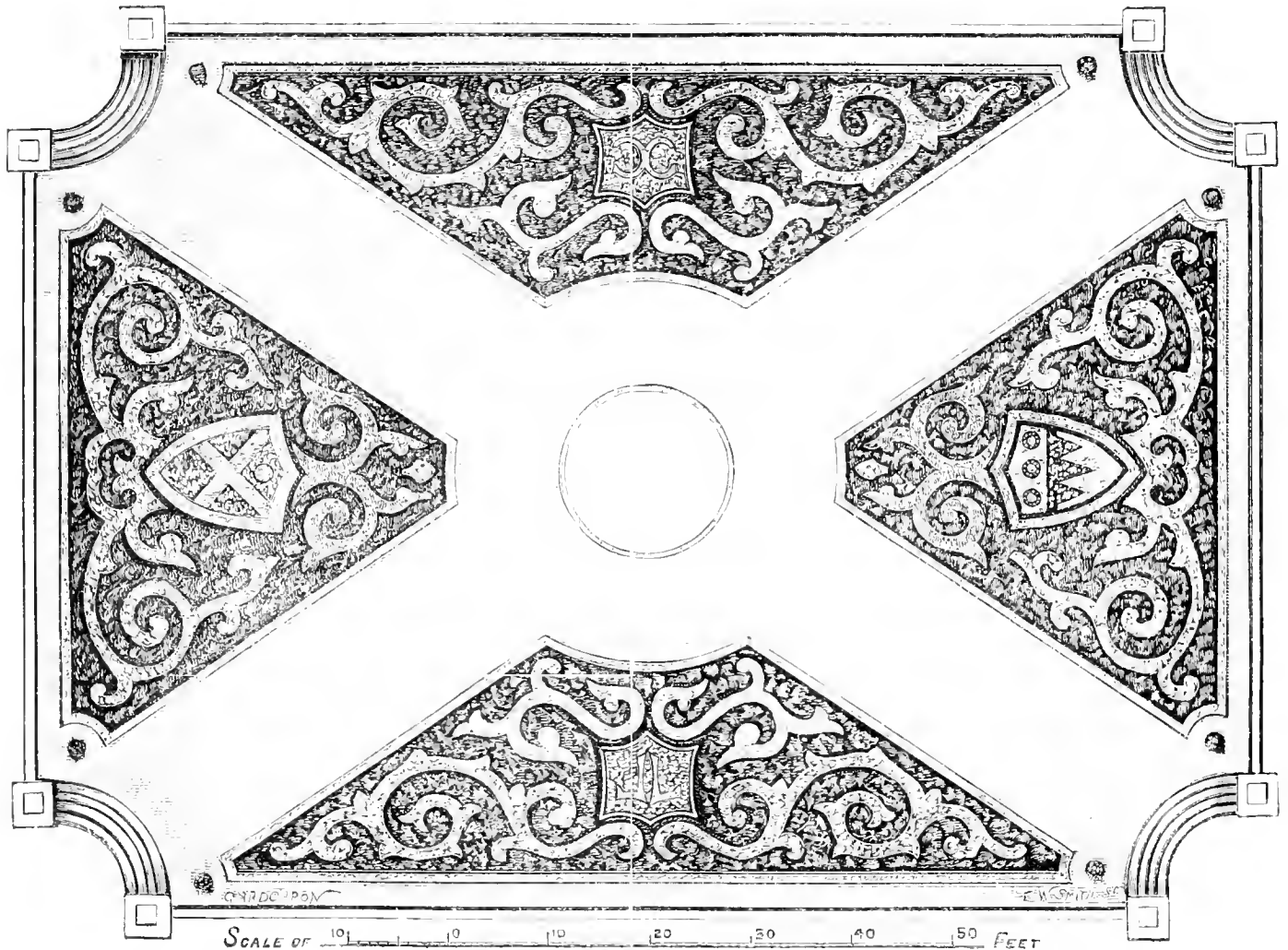


FIG. 104.—PLAN OF WINTER GARDEN AT MINLEY. (SEE P. 695.)

division one should compete in, is "impracticable." Why could not some local member of the National Rose Society assist by checking the number of plants of the varieties catalogued as exhibition Roses? This would very seldom be necessary, because almost all exhibitors are already aware of the quantity of plants each grows, more or less. Where it was doubted if an exhibitor was competing in his right class, the matter might easily be settled by a member of the National Rose Society's committee visiting the place. But I do not imagine we should often be put to any such trouble, nor do I for one moment think rosarians are likely to give false figures. "Rosa" is undoubtedly correct when he mentions that one person will stage his blooms to far more effect than another. I have seen exhibitors fussing and troubling over their flowers for a long time, and after all, one could sometimes choose and stage a dozen from their spare blooms that would win the prize against those first chosen from the

because his case shows very plainly what cultivation will do. The garden at Jarvis Villa is far from an ideal Rose locality, either as regards its natural soil or situation. Nothing but skill and a genuine love for the Rose have gained Mr. Slaughter so many prizes among growers of thousands compared to his hundreds. This is also a case where tasteful and careful staging have assisted the exhibitor. Every visitor to the National Rose Society's exhibition for some years, must have noticed how every little point was made to tell in Mr. Slaughter's staging. What I consider unfair is, for a man with, say, 2000 plants (of exhibition varieties), to compete against the small grower, who has only 500, or sometimes less. Mr. Grahame's scheme avoids this unfairness as far as possible, and the objections to it, on the ground of impracticability, do not seem to me to be based on sound arguments. "Rosa" asks where the injustice comes in, "so long as these large growers do not show in their own larger classes."

which shall certainly be the last so far as I am concerned in this discussion, to reply to Mr. Dod, p. 651, where he makes the apology for a former mistake by blaming *Genera Plantarum* as the culprit, saying he got his reference to fruticose Sunflowers from p. 376 of vol. ii. of that standard work. Unfortunately for Mr. Dod's arguments, the reference there is p. 585 of the *Prodromus* and not p. 590, and is made to the whole genus of *Helianthus* contained in De Candolle's *Prodromus*, commencing at p. 585 of vol. v. Singularly enough, the No. 1 species on that page is *Helianthus annuus*, there stated as a native of Peru and not fruticose; from this work we also find reference to No. 26, *H. procumbens* and *H. verbesinoides*, both from Peru, the latter the fruticose one which Mr. Dod wishes to refer to at p. 591. We have also references in the *Genera Plantarum* to *H. rugosus*, another Peruvian species, and also to Jacquin, *Hort. Vindob.*, t. 160, 161, who is the recognised authority for *H. tuberosus*, being of South

American origin. Steudel, on the authority of Anton de Arrabida, mentions *H. brasiliensis* and *H. herbaceus*, both from Brazil. I read the Latin description of the *Genera Plantarum*, referring to the *H. hianthus* as meaning the majority, North American, and the minority Peru and Chili. I have only Asa Gray's *Bot. N. U. S.*, for 1878, to refer to at the moment, and I find p. 228, sp. No. 15 is *H. doronicoides*, Lam., with no mention of tubers, and No. 16, *H. tuberosus*, L., described as tuber-bearing and there said to be naturalised in fence rows and around gardens. I have also referred to Mr. Dod's writings on *H. doronicoides*, vide *Garden*, September 20, 1884, where that gentleman states he is distributing largely a plant which he thinks is *H. trachelifolius* of Asa Gray, under the erroneous name of *H. doronicoides*, by which he received it. That he had long since discarded *H. doronicoides* of Asa Gray, a plant worse than worthless for ornamental purposes, said to be a variety of *H. tuberosus*, but the roots are not tubercous. The year following in the *Gardeners' Chronicle*, September 12, 1885, p. 330, Mr. Dod recommends *H. doronicoides* as a very ornamental species, and he also mentions having received from Ipswich another species which answers in all respects to Asa Gray's *H. latiflorus*, under the name of *H. doronicoides*. The most curious deduction from all this is, that neither of the four seems at all to agree with Lamarck's *H. doronicoides*, mentioned by one American botanist as having a branched stem, and by Asa Gray as having showy heads. Whatever result we may arrive at as to the native country, it will not alter the fact that the Jerusalem Artichokes arrived into Europe before 1616 A.D., and were first conveyed there by way of Brazil, and probably Portugal. *Wm. Eltherington Dixon.*

TOMATOS AND CUCUMBERS FOR MARKET, ETC.—In reply to your correspondent, "N. H. C.," p. 651, I have tested for more than forty years nearly all the new varieties of Tomatos and Cucumbers as soon as sent out, and consider the best Tomato for market purposes to be Ham Green Favourite. It is a fine grower, heavy cropper, with smooth, round, heavy fruit, solid, and of good flavour. As regards Cucumbers, I may say, without fear of contradiction, that Lockie's Perfection is the most useful variety in cultivation, and, although rather small, it is handsome, a wonderful cropper, and of good eating. *T. L.*

CHRYSANTHEMUM ETOILE DE LYON.—I cannot agree with what Mr. Ward says of this fine variety. I have grown about thirty blooms of it this season, most of the blooms 10 inches across, and some more, and all were well up in the centre, the petals well reflexed on the outside of the bloom, forming almost a globular outline, the colour of the deepest pink in most of the late blooms. Now, what more could be desired in a Japanese Chrysanthemum, as the variety is a very vigorous grower, and it forms a fine decorative plant for the conservatory, for which purpose it should be grown in quantity. *C. Raffill, The Gardens, Summerhill, Kingswinford.*

VARIEGATED PALM.—I took, some seven years ago, at the Château Talabot, at Marseilles, some seed of *Chamaerops excelsa*, from which I raised a great number of plants, of which one is variegated. It is perfectly healthy, but slow of growth, and it will be some years before it produces seed of its own. *D. Toulon.*

PRIMULA NIVALIS.—On p. 680 of the *Gardeners' Chronicle* for December 5, Mr. Withers asks whether *Primula nivalis* of Pallas is found in Dahuria, and whether it is known in English gardens, and invites me to answer the question. He rightly supposes that the European alpine Primrose, with white flowers, often sold in nurseries as *P. nivalis*, has no right to that botanical name. *Primula nivalis* of Pallas, discovered by that botanist in Siberia at the end of the last century, has been and I believe still is in cultivation at Kew, and I have had both seed and plants from that source. It has, however, disappointed me, not having proved ornamental, or in any respect superior to the far more common *P. denticulata*, some forms of which it resembles. But *P. nivalis* is a very variable plant, having a wide geographical range, which extends from the high mountains in the North of Asia Minor, across the Caucasus, and along the mountains which separate the Russian Empire from the Chinese, reaching nearly to the Pacific coast, and occurring both north and south of the Amoor. About a year ago, I looked through a large series of *P. nivalis* in the Kew herbarium, and the flowers

seem to get finer as the species extends eastward. A very beautiful form, with large flowers of imperial purple, is figured in Regel's *Gartenflora*, by the name of var. *Turkestanica*; but though seed of this variety has been offered in England, I never heard that it has been successfully raised here. I believe the Kew stock was from the Caucasus, where E. Boissier (*Flora Orientalis*, vol. iv.), describes it as growing amongst masses of ice (moles glaciales) at an elevation of from 6000 to 10 000 feet. It probably owes its name to the snowy height at which it flourishes rather than to the colour of the flowers, which is usually purple, though rose-coloured and white varieties occur. Its nearest European relations are *P. longifolia* and *P. farinosa*. Mr. Withers calls *P. nivalis*, "Fischer's Primrose." The only Primrose of that district which I find in the Kew Catalogue connected with Fischer's name is a variety of *P. longiscapa*, a species having partly the same range as *P. nivalis*, though distinct from it, and said to extend into Dahuria. *C. Wolley Dod, Edge Hall.*

HEAVY PITMASTON DUCHESS PEARS.—Observing in recent numbers of the *Gardeners' Chronicle* paragraphs concerning the weight of the above Pear, I wish to add my note of information to the others. We have here a tree which bore last year twenty-two fruits, of which the six largest had the following weights:—Two fruits, 1 lb. 10 oz. each; two ditto, rather over 1 lb. 9 oz. each; one ditto, 1 lb. 8½ oz., and the other, 1 lb. 8 oz.; total, 9 lb. 6½ oz. The rest were very fine fruits, the smallest weighing 1 lb. This present year the same tree bore fifty-four fruits, which averaged 1 lb. each. My employer, who is a good judge of fruit, pronounces them to be in flavour and appearance, first-class. *G. Mobbs, Gardener, Becklands, Great Grimsby.*

STANDS FOR THE EXHIBITION OF JAPANESE CHRYSANTHEMUMS.—I agree with Mr. J. Douglas in his remarks in the last week's issue of the *Gardeners' Chronicle*, respecting the size of stands for the showing of Japanese Chrysanthemum blooms. Now that these Chrysanthemums have grown to an enormous size, the various Chrysanthemum societies will do a good service to exhibitors if, before they frame their schedules for next season, they will extend the size of stands for twelve blooms to 28 by 22 inches, as recommended by Mr. Douglas. At almost all exhibitions of Chrysanthemums complaints are heard respecting this matter, and in my humble opinion, these are not without foundation. Doubtless judges of blooms at shows will appreciate such an alteration of the size of stands as much as the exhibitors themselves, as it must cause them more trouble to examine the blooms when these are crowded together than would be the case if they were allowed more space. *R. Milner.*

A REMEDY FOR THE EUCHARIS MITE.—If "W. A. S.," who enquired for a means of ridding his bulbs of the mite, will procure some of Chibran's Eucharis Mite Killer and use it as directed, I think he will soon be rid of these troublesome pests. I have used it for some time and with the best results, as our stock, which was at one time badly infested, is now quite clean and healthy. *T. Spencer, Goodrich Court Gardens, Ross.*

HARDY CYCLAMENS.—In reply to Mr. G. F. Wilson's inquiry respecting the growing of hardy Cyclamens, I may say that we have them growing here in three different situations, namely, at the foot of Oak trees in turf, also amongst limestone rocks shaded by overhanging trees, and in the open; and I find that those growing in the open beds are more compact, and less drawn, and the blooms a little finer than those growing under the shade of trees, but with these exceptions, I find that those growing under shade, flower quite as freely as those growing in the open. The soil in which they are growing is a light sandy loam, overlying limestone rock, and we are situated within 1 mile of the sea, and at an elevation of from 70 to 80 feet above sea level. *R. Milner, Penrice Castle, Swansea.*

THE CLIMBING VARIETY OF NIPHETOS ROSE.—Your correspondents in the *Gardeners' Chronicle*, p. 651, evidently do not seem to have understood my letter of the previous week, or, perhaps, I was not sufficiently explicit. I intended to convey the fact, that there need be no doubts whatever as to there being a climbing Niphetos Rose, as even the old variety will climb far enough to suit some requirements. I further remarked that I had not observed a good plant of the climbing variety.

I did not convey the idea (at least I did not think so) that there were no good plants. I merely stated the fact that I had not seen one. I have heard of good plants and some day I may be able to see one. I have propagated plants from the old stock, as Messrs. Keynes terms it, and have found that when the plants are well established they assume a sort of climbing habit, but not to such an extent as to merit the term "climbing Rose." I speak of propagation from cuttings. I have had very good plants in six months from cuttings taken off in the spring. *W. A. Cook, Compton Bassett.*

CHRYSANTHEMUM MRS. ALPHEUS HARDY.—Whilst looking through the plant-houses at Hill Carr, Bowdon, a few days since, I was much struck with a beautiful example of *Chrysanthemum Mrs. Alpheus Hardy*. I was informed by Mr. Tibbles, the gardener, that the plant in question was propagated late in the spring of last year; it was grown on in an 8-inch pot, and in due time produced fine small flowers. Last spring this plant was placed in a cool Azalea-house, where it has remained ever since. It was kept in an 8-inch pot till the beginning of August; the plant was then shifted to a 12-inch pot, and liberally treated, and it produced a number of branches which were carefully trained to wires on the roof of the house, and in close proximity to the glass. It has produced forty-five beautiful flowers, measuring from 5½ to 8½ inches in diameter, and of a good depth, very pure in colour; the hairs on the petals, too, were well developed. This was the most striking specimen of a *Chrysanthemum* that I have seen this season. I enclose two flowers. *H. Ellis, Bowdon.*

MAMMOTH CHRYSANTHEMUMS.—It is hardly possible to find for some of the Japanese Chrysanthemums of somewhat recent introduction a more appropriate appellation than that of mammoth. It is sincerely to be hoped that in *Etoile de Lyon*, probably the largest of all the section, we have reached the maximum of size, although some few others run it very close. With, perhaps, one special exception—that of *Viviani Morel*, which is, probably, the best of all recently-introduced Japanese varieties, the more newly introduced large-flowered sorts are of no very special value, except so far as size may be an element of admiration, when *Etoile de Lyon*, Mrs. E. W. Clarke, Stanstead White, Mrs. C. H. Wheeler, or Mrs. Falconer Jameson come into the stands. Of other ordinary and probably even-sized flowers, they not only spoil uniformity, but add nothing to average excellence; rather, perhaps, the addition of these large flowers tends to dwarf others, and so make the stands to appear less meritorious than they really are. Judges should certainly lay some stress upon evenness [they generally do so. Ed.] which the introduction of one or two big blooms into a stand of twelve flowers helps materially to destroy. Mere size is not quality—indeed, many of the large blooms are coarse. Then their inclusion in stands, because these stands are made expressly for flowers of average dimensions, helps also to cover or injure the other flowers. It is very evident that only the use of large stands will enable these big flowers to be adequately displayed. It may be worthy the attention of Chrysanthemum show committees to consider whether it is not well to establish a class for these largest blooms, and thus attract these giants from their ordinary classes. The result would materially be helped if judges were specially invited to make average evenness of size in the flowers an important element in making the awards. *A. D.*

BURNT EARTH IN THE PROPAGATION OF PLANTS.—Some time since your columns contained remarks from various correspondents concerning the uses of burnt earth in plant-culture, so that the following, which I came across recently in the *Floricultural Cabinet* for the year 1844 p. 43, will most likely prove of interest. It is headed, "On Striking Cuttings in Burnt Clay":—"Having been very successful in striking cuttings of nearly every kind of stove and greenhouse plants, I have in my collection (which consists of most of the usual handsome-flowering, shrubby kinds) in burnt clay. I am induced to recommend the plan to others. Burnt clay has the property of absorbing ammonia from the atmosphere, which affords a constant and regular stimulus to the cuttings, and enables them to send out the radical fibres very quickly. *G. S.*" Whether the more rapid emission of roots by the use of burnt earth is an established fact, I cannot say [Yes, in our experience. Ed.] but I can testify to its value among alpine, and also in the kitchen garden, and by its

sparse use in gardens generally, I am fully convinced that we are constantly setting aside a very useful and valuable agent in all that pertains to the garden and farm. J.

A PLEA FOR THE UNLUCKY GARDENERS.—

There can be no two opinions as to the craftsman with theoretical and practical knowledge having an infinite advantage over the craftsman with practice only, and so I cordially agree with all that has been written from time to time concerning the careful study of good books, of evening classes, and social gatherings, with a view to the encouragement of recording experiences, and exchanging ideas. It is, however, rather hard on the poor gardener who is out of place, and often through no fault of his own, to brand him as an ignoramus, and to say that his present unhappy position is due to his past neglect to read, mark, and learn. As an old traveller, I have again and again come in contact with those persons who perpetually complain of the lack of good gardeners and all that sort of thing, and secretly know them to be exacting and merciless creatures, whom no man could satisfy and please. I know some of them, too, as individuals who have risen in the world by leaps and bounds, and they, having escaped the woods, of course, can whistle. We are all of us, I fear, apt to forget in prosperity the days of our adversity; and here I can lay it down as a fundamental fact, that it does not always follow that learned gardeners command all the best places. I can, and do, speak with some authority on this point, because, for many years, I had charge of the gardeners register at the great Exeter Nursery, from whence eminent gardeners have been scattered far and wide, and I have often proved that an ordinary gardener, possessing tact and influence, generally did well. It is, of course, equally true that a gardener having tact and influence, together with theoretical and practical knowledge, would stand a chance of doing still better, apart from the old saw, that once a man having gained the reputation for early rising, may lie in bed all day; and so I quite expect that the "men of mark" mentioned by Mr. Huxford owe their distinction in a large measure to tact and position. For instance, there would have been no Sir Joseph Paxton had there not also have been a Duke of Devonshire; and my late lamented friend, John Dominy, would probably have gone down to his grave a poor obscure Devonshire gardener, instead of an Orchid specialist and hybridiser, but for the great house of Vetch. If space permitted, I could cite plenty of similar parallels; and also of the clever gardeners who, through the tangled skein of causes, have been driven out of the profession altogether, to seek refuge in petty husbandry; others as greengrocers or publicans, and not a few, alas! into the poor-houses. I am often grieved to see the intellectual men who haunt the London nurseries for berths, or even temporary employment as garden labourers. W. Napper, Chelsea.

VIOLAS v. TUFTED PANSIES—Should *Violas* be called Tufted Pansies? This is a question regarding which I thought it would be well, some time ago, to endeavour to elicit an opinion which would be authoritative for everyday use, and, therefore, I wrote to a number of the most noted trade and private growers, asking an expression of opinion on this point. In every case, with one exception (Mr. T. S. Ware), the term was disapproved of, and the great majority expressed themselves in favour of retaining and using only the old name of "*Viola*." The letters speak for themselves, and your readers will, no doubt, have pleasure in perusing them, seeing they are all from well-known growers. Wm. Cuthbertson, of Dobbe & Co., Rothsay.

"We are strongly of opinion that *Violas* should still be called *Violas*. Any attempt to alter the name to Tufted Pansies—a most misleading name—will never meet with our support. R. B. Laird & Sons, Edinburgh."

"I cannot see why the name should be changed from *Viola* to Tufted Pansy. I think the words "Tufted Pansy" are quite misleading, and cannot understand how they have ever been used. *Viola*, I consider, is the proper name, and anyone with a knowledge of Pansies knows very well that a *Viola* is quite distinct from either a show or fancy Pansy. John Downie, 144, Princes Street, Edinburgh."

"In answer to your enquiry, we are of opinion that the name 'Tufted Pansies' is misleading. There is no such name. It originated, we think, in the mind of the editor of the *Garden*. Bedding Pansies and *Violas* are now so much crossed and

mixed up with each other, that the only proper name is Bedding Pansies and *Violas*, or, if preferred, Bedding *Violas*. We shall never call them Tufted Pansies in our lists. James Cocker & Sons, Aberdeen."

"We think *Violas* the simplest name, and the one they are best known by. Paul & Son, The Old Nurseries, Chesham."

"May I suggest the term 'Bedding Pansies' be adopted in preference to either of the above (*Violas* or Tufted Pansies). I do not like the word 'Tufted,' and am of opinion that by distinguishing them as bedding Pansies, it would tend more than ever to popularise them for that purpose, to which they are so eminently suitable. George Phippen, F.R.H.S., Reading."

"I have always condemned the use of the words 'Tufted Pansies' to our *Violas*, as misleading and incorrect, and my strong condemnation in my various communications to the gardening press is proof of my disapproval. The botanical aspect should be left out of the question. William Dean, Sparkhill, Birmingham."

"I think you are doing a good work in trying to settle the question you have in hand. I should certainly say Tufted Pansies is at once a far more descriptive and common-sense term than *Violas*, and much more likely to be properly understood by the general public. Thos. S. Ware, Tottenham."

"I have always considered Tufted Pansies a nonsensical name, as many of them are not tufted in growth at all. W. E. Gumbelton, Belygrove, Queenstown, Ireland."

"O save thee ancient manner

From the friends that plague thee thus."

I am always delighted to applaud anything praiseworthy in our young florists, but in this case we are reminded of the dictum of Solomon, 'He that spareth the rod, &c.' In short, the term 'Tufted Pansies' would not accurately describe the habit of some of the best *Violas*, as some of the varieties are somewhat straggling, 'not tufted' in growth. As *Viola* has a sweeter sound, is distinct from Pansy—as the flower also is; and looking at the matter broadly, I see little to warrant the change of name. John Baxter, Daldozie, Broadhouse, Glasgow."

"I am in receipt of your favour re 'Tufted Pansies v. *Violas*.' I object to the former name as being inaccurate in two particulars. *Violas* are not Pansies, and are not, with the exception of half-a-dozen varieties—tufted. While all Pansies are *Violas*, no *Viola* except tricolor, and such as have been derived from it, is entitled to the name of Pansy. The question as to whether *Violas* not 'tufted'—or stoliferous—in habit are descended from *V. tricolor* is quite another matter. J. D. Stuart, Newforge House, Malone, Belfast. P.S.—Besides the reason assigned, my old-fashioned conservatism clings affectionately to the old and simple name of *Viola*. It a new name is to make headway and become popular, it must have something either in sense or sound to give it a 'boom.' Now I think the new name does not fill the bill in either of these particulars. J. D. S."

"I prefer the original designation, namely, *Viola*. 'Tufted Pansy' is both misleading and inaccurate. Captain J. A. King, Glazert Bank House, Lennoxton."

"If it is purely a question of giving the flower its right name, I do not see why the word 'tufted' should be introduced at all. Henry Hamilton, Lochwinnoch."

"I am strongly in favour of the use of the term '*Viola*,' and think that the term 'tufted Pansy' is neither attractive, descriptive, nor harmonious, and should be discarded. All our Pansies are *Violas*, according to the genus, and the nearest relation, and least removed from the wild types, is the *Viola* of commerce; next in relationship comes the fancy Pansy, and after that the show Pansy. If we stick to the hard and fast rule of their natural order, we would leave out the term Pansy altogether, and name the three types in the following order, *Viola*, fancy *Viola*, and show *Viola*. The terms show Pansy, fancy Pansy, and *Viola*, have been used without comment, until the recent term, 'Tufted Pansy,' crept in. If *Violas* were all tufted in habit, we might retain the term, but in named varieties not one in twelve is tufted. Like most young growers and writers on the subject of Pansies and *Violas*, I have been using the term tufted Pansy recently, and from older and more experienced growers I have had threatening letters, two being particularly noticeable—one from Birmingham, and the other from the land of the 'Immortal Dan.' George McLeod, F.R.H.S., Chingford, Essex."

SCOTLAND.

SCOTTISH HORTICULTURAL SOCIETY.

The monthly meeting of this Association was held in the Rooms, 5, St. Andrew Square, Edinburgh, on Tuesday evening, December 1, 1891, the President, Mr. W. M. Welsh, in the chair. After the usual preliminaries, a number of new members (including five life members) were proposed and elected, a fact which testifies that the interest in the Association is in no way diminishing. A paper, the subject of which was "Gardeners and Gardening: North v. South," by Mr. J. Muir, Margam Park, Wales, was, in the absence of the writer, read by Mr. Robert Laird, Secretary of the Association. He paid a high compliment to the Scottish Horticultural Association, assuring its members that there was no other similar, of equal merit, in the many institutions he knew in the South. He regretted being unable to be present to read his paper, and asserted that no country in the universe produced such qualified gardeners; this was admitted by impartial judges, and it was equally admitted that Scotsmen must "come over the border" to become fully qualified; that the leading gardeners in Scotland are indebted to their sojourn in the South for a great amount of their eminence.

The home-made Scots gardener is, as a rule, too self-opinionated to be an agreeable success, and requires experience and a "widening of associations" to qualify him as a perfect gardener. He advised young gardeners in Scotland not to lose sight of gaining experience in the South, they acquire in addition to an insight into their profession, culture of manner, and language. He had a difficulty in deciding which was the least worth, an English or Scots apprentice, when just out of their time. The Scots journeyman was an adept at digging and outdoor-work, the English mainly indoor, and in choosing a beginner he had a decided preference for the spade hand, as he asserted that the knowledge of handling a spade and power of performing hard work had secured for Scots gardeners the eminence they have attained elsewhere. In Scotland and the North, where one instance of the means exists for gardeners to perfect themselves in all kinds of under-glasswork, in the South there are twenty, and it is only in the combination of the two experiences that the young Scotsman can hope for success in life, and it is only when his ambition is fired by what he sees in the South that he can hope to shine as a gardener, and then he rarely makes the mistakes common to Englishmen, of indulgence in frivolous company and amusements. Scotsmen are not often found in single-handed situations in England; he is more ambitious, and in this respect many young English gardeners are left behind. Head gardeners are well aware of the advantage of having a trustworthy and industrious man, which he finds in the young Scotsman, who thereby secures a leading position amongst young gardeners, who often secure good places in England, and only return to the old country when they are assured by their experience in the South of a position both as gardeners and as members of the community.

The southern gardeners are better decorators than the northern, and many admirable cultivators in the latter are not able to display their produce to equal advantage with the former. Dinner-table and other decorations are greatly neglected in Scotland, and northern gardeners, with other excellent abilities have failed to give satisfaction to southern employers. England far excels Scotland in its exhibitions, from a southern point of view. The Royal Caledonian Horticultural Society is not credited with perfect management—quite the reverse, although regarded as the leading Society in Scotland, there are many admirable men on the committee who fail to assert their rights, and allow their duties to be monopolised to a great extent by one or two members, and the result is, the show is regarded as a partisan one. They would not tolerate anything of this kind in the South; the Scotch shows are not regarded in the South as patterns, and they had

nothing to learn from them, although the facilities in the North are second to none.

Much superb produce seen in England is never seen in the North, and *vice versa*; England excels in specimen-plants, Scotland in Grapes and vegetables. In plant culture England has no equal, and they have a more ardent love for flowers than the Scotsfolk, which it was to be hoped the Associations in Scotland would use efforts to alter, and foster a desire for flowers and gardening.

The economy of the South in their gardens was greater than in the North, the huge kitchen gardens from which only one crop a year was obtained in Scotland, are almost unheard of in England, where successional crops are the rule, and this all-the-year-round supply system interests the cultivators and gives general satisfaction. The walls in the North are generally so well managed, that the Scots gardener misses them in the South, as in the training of fruit trees Scotland sets an example to the world, and it is a telling qualification.

The Royal Horticultural Society of London has no parallel in Scotland, to its deliberations and management all who patronise horticulture are greatly indebted. By its rules, new or old productions claiming distinction must be tested under the most practical supervision before being recommended to the public, and the "weeding out" in this way is a benefit of the greatest magnitude to growers. It is remarkable how few new and meritorious plants, fruits, flowers, and vegetables appear there and win distinction from Scotland. This is to be attributable to the disinclination of the northerners to improve the different forms of vegetation, as it cannot bear the construction of inability. The deficiency of Scotland in horticultural literature was dealt with at some length, and was pointed out as a weak part of the system of horticulture that could be remedied. Scots gardeners in England were always anxious to be informed of the progress of Horticulture in Scotland, which he thought, would never be thoroughly done from London. After remarks upon the nursery and seed trade in Scotland, and their travellers, the paper concluded that much of interest had been left unsaid, but while Scots gardeners can very well hold their own against all comers in Scotland, their professional countrymen in the South were a highly respected class of men; their positions are partly accountable for this form, but the proverbial honesty of character and their persevering disposition are the qualities which secure for them the greatest distinction.

The paper caused considerable discussion, and was on the whole well appreciated, although some members were inclined to resent what they thought a too great freedom of the privileges of a paper not read by the author. The Chairman, proposed a hearty vote of thanks to the writer, whom he described as an excellent Scotch gardener of a modest and even retiring demeanour, and if he had found fault, he had also patted them on the back, which the large assembly quite willingly accorded.

A fine collection of American Apples, consisting of forty-four dishes, were exhibited, sent by the Director of the Government Pomological Department, United States of America, as a fair sample of the Apple produce in several of the States, of which Peck's Pleasant, Ben Davis, a highly-coloured and excellent fruit, varying very much in the size of its fruit in the different examples shown from three States; Baldwin, Roxburgh Russet, Northern Spy, Pomone Gris, and others were fairly good examples, and were commented upon as not equal to the pick of the Canadian examples of the same sorts sent here for sale in the markets.

A vote of thanks to the Chairman closed the meeting, which was largely attended.

ROYAL CALEDONIAN HORTICULTURAL.

The annual meeting of the Royal Caledonian Horticultural Society was held in Dowell's Rooms, Elinburgh, recently, Mr. D. P. Laird presiding. The accounts for the year ending November 30 were submitted by the treasurer, Mr. P. Neill Fraser, and

showed the receipts to have been £2281 8s., and the expenditure £2337 10s. 4d., the latter including £906 as expenses for the spring and international shows, and £1,324 11s. 6d. in premiums at those shows. In addition to the money prizes, plate to the value of £57 13s. was presented to successful competitors by nurserymen and others. The capital value of the funds at date was £1174 1s. 4d., being a decrease of £68 5s. 2d. on the previous year. Mr. Welsh, in moving the adoption of the report and a vote of thanks to the treasurer, said the statement just submitted was a very gratifying one. The decrease in the funds was very small, considering the great show that had been held in September, and which had given a stimulus to horticulture which more than compensated for the slight diminution of the funds. Mr. William Young stated that there was not another horticultural society in Britain that paid so much in prize money as the Royal Caledonian. The report was adopted. Colonel Wauchope, of Niddrie, was elected a vice-president of the society, in room of Lord Melville, who retired by rotation, and two members of council were appointed. The chairman mentioned that the society had arranged to hold three shows next year—in the spring, summer, and autumn; and they had every reason to hope that the year would be as successful as in the past, and that the society would continue to maintain the premier position. Mr. Macmillan and Mr. D. Thomson were elected members of the council.

GLAMIS CASTLE GARDENS.

These gardens have many features, the splendid collection of Conifers being particularly noteworthy. Probably, however, Glamis Castle Gardens are most famed for the production of fruits under glass. On visiting them this autumn we were agreeably surprised to find some old Vines carrying capital bunches of Grapes, the Muscat Hamburg being in very fine condition. Lady Downe's, Muscat of Alexandria, and Madresfield Court, were equally good. Some recently-planted Gros Colmar and Muscat of Alexandria Vines had made vigorous, short-jointed growth, which cannot fail to give grand results. At each end of these vineries are two Peach-houses, filled with well-trained trees. Mr. Whitton, the gardener, spoke very highly of Red Magdalen, Sulhamstead, Hale's Early, Dymond, and Walburton Admirable, also Pittmaston Orange and Elruge Nectarines.

A collection of Figs is being made, and many sorts are now under trial, both in pots and planted out. Several houses are also devoted to Melons; these structures are wide, three-quarter spans, and give very satisfactory results. The only variety grown is a sort raised at Glamis Castle, and named Lord Strathmore; it is a fine-sized fruit, rather flattened, and somewhat ribbed, of the scarlet-flesh section.

Many houses are devoted to the culture of decorative plants, Orchids, &c. Carnation; Souvenir de la Malmaison was in grand form, and amongst other subjects were huge batches of Dracenas, Kentias, Asparagus tenuissimus, Begonias, Crotons, &c. Some well-grown zonal Pelargoniums were carrying a fine crop of flowers, the double kinds being most liked for cutting. Two very striking double sorts were Florence, a pure white, with a fine compact habit; and Jules Simon, pink. Clerodendron fallax was exceptionally well done. The plants had been raised from seeds sown in spring, and were growing in 5-inch pots; each plant had a finely-developed panicle of flowers, about a foot through, and rather more in height. This subject is treated strictly as an annual, and this appears to be the proper mode of cultivation of it. Among other things, we noted fine examples of Alocasia Sanderiana, A. Lowii, Andromeda metallica, Anthurium crystallinum and A. Veitchii, Tillandsia Lindenii, and of the variegated Ficus elastica. Pitcher Plants are also well-grown, especially Nepenthes edinensis, N. Findleyana, N. Lawrenceana, N. Mastersii, N. Rafflesiana, N. Harkeriana, and most of the leading sorts. In the conservatory the old Fuchsia fulgens bore many drooping corymbs of its bright red flowers; Cassia

corymbosa was almost smothered with its yellow flowers.

Cool Orchids were also very well grown, especially Masdevallias. Odontoglossums were also well represented, especially the crispum section, of which there were many fine varieties. Masses of O. grande, Miltonia vexillaria, Oncidium tigrinum, Sophronites grandiflora, Coelogyne cristata, and Cypripedium in variety, were likewise noticeable. In another house, Dendrobiums, Cattleyas, Lælias, Vandas, and the warmer Oncidiums, were skilfully arranged to suit their requirements.

Considerable attention has been given to Apples and other hardy fruits, but comparatively few varieties seem to be really worth growing here; as cordons, however, several varieties do exceedingly well—notably, Warner's King, Duchess of Oldenburg, Stirling Castle, Northern Dumpling, Cellini, Lord Grosvenor, and Lane's Prince Albert. As orchard trees, Aitken's No. 2, Beauty of Moray, Keswick Codlin, and Tower of Glamis, are by far the most satisfactory. With the exception of some of the earlier and older sorts, Pears are not often a satisfactory crop. *F. R.*

ANORÆCUM EDURNEUM.

In nearly every collection of Orchids the above plant is to be found, and it is therefore not with any intention of introducing a novelty that I make a note of it. It is not everywhere, however, that one sees a plant similar to that owned by Bailie McDonald, Ardrossan, N.B. The plant to which I refer is a splendidly-cultivated specimen, which reflects credit on Mr. Murray, the grower. The plant stands about 4 feet out of its pot, and is composed of eighteen pairs of fine strong leathery leaves, which are so closely and evenly grown, that not the slightest particle of light is discernible between the foliage; just now the plant has four stout flower-spikes, heavily laden with rich ivory-white blossoms. Other kinds of Orchids are equally well grown, and one of the finest forms of Odontoglossum grande is enlivening the conservatory. Dendrobium Phalænopsis is well represented by three well-flowered spikes, and a huge mass of Lælia albida, with nineteen flower-spikes, is noteworthy; the latter is growing in stove temperature. Of Cattleyas, many fine forms of Trianae, Mendelii, Mossie, and others, are now making good sheaths. Odontoglossums are grown well in a lean-to Peach-house, which, though rather lofty for its present use, suits the requirements of the plants perfectly, and many fine strong bulbs are being made. *Scottie.*

THE ROSERY.

WORK IN THE ROSE GARDEN.

ALTHOUGH the operations to be performed in the cultivation of out-of-door flowers are very much the same from year to year, yet the character of the seasons makes a considerable difference sometimes in the period, and at other times in the manner, in which they are done. For instance, I hardly recollect, except perhaps in that woeful year, 1879, a season when the necessary operations in the Rose garden have been so long delayed. The excessive wet of the month of October had a two-fold effect—it prevented the nurserymen from lifting their plants, and when their orders were executed, it prevented those who ordered them from planting. For weeks the ground was in such a state, owing to the excessive rains, that it was impossible to get upon it, and it has been, in consequence, one of the most trying seasons for nurserymen that they have experienced of late years. Writing at the end of October, one wrote to me, saying, "I had just begun lifting my Roses, and when they were raised, the same cause militated against putting the plants into their position in the Rose garden, for it is much better to delay this for weeks even, rather than to plant when the ground is in an unfit condition; consequently they have been just 'laid in' until a suitable time comes."

I have every reason to be satisfied with the results of the plan I have adopted of late years, viz., that of cutting out the old flowering wood, and leaving only those strong shoots which form the hope of the next season. Two objects are secured by this—the operation of pruning in the spring, when there is so much work to be done in the Rose garden, is considerably lessened, and the wood gets more thoroughly ripened, which is a most important factor in successful Rose-growing. Of course, this does not apply to Tea Roses, which had better be left alone. It is still a moot point whether these require much pruning; there are many very successful growers of Tea Roses who say, do not prune them at all, but merely shorten the shoots. Tea Roses keep going on much later in the autumn than the H.P.'s, and consequently there is a considerable quantity of soft unripened wood, which in severe winters is sure to be cut up by the frost, but in mild winters will remain fresh and green. I do not think we should be deceived by this, but cut it away, leaving the heads to start afresh for the year's growth.

In planting, I am more and more persuaded it is well to avoid mixing up manure with the soil, and that the best way is to take out (where the beds are to be replenished) the old soil, loosing that in the bottom of the hole, then placing some rotted turf (the top spit of a pasture where the soil is good is the most suitable); this should be well chopped up with a spade, and the roots evenly distributed when planted, and then pressed firmly down. I have said the turf should be taken from a pasture where the soil is good, for some people seem to have a notion that, provided they get the top spit, this is of no consequence. This is a great mistake; the rotted turf is a good thing, but it is of importance that the soil be such as the Rose delights in.

In ordering Roses to replace those which it is decided to weed out, the question will come before the amateur, "On what stock shall I have my plants?" The answer to this question must be regulated by the situation of the garden, and the character of the soil. There has been of late quite an onslaught on the Manetti as a stock. Everything that was bad was said of it; its days were numbered, it would soon be a thing of the past, and such like Cassandra-like prophecies were freely indulged in. For all soils and situations, the seedling Briar or the Briar cutting was recommended. Now we are as a nation fond of running into extremes, and from being extolled to the skies, it has now become the fashion to denounce the seedling Briar; but there are some things in its favour. In the first place, it is an early stock; the sap begins to rise early, and this causes the Rose budded on it to start early. Now where a grower who desires to exhibit lives in the colder or less favoured parts of our islands, this is a great boon. We have seen how the Messrs. Harkness, of Bedale in Yorkshire, have more than once carried off the Challenge Trophy at the National, and their plants were on the Manetti; so that for all districts north of the Trent and in the Midlands, I believe it to be a most valuable stock, while it would be simply impossible to propagate new varieties without it. Then it is, I think, better suited for light soils than the Briar. We all know that the wild Rose revels in the clayey loam of our woodlands and hedgerows, that it pushes its way with fleetness through great depths of soil, and then flings its branches overhead laden with its chaste lovely flowers; but it does not flourish so in our lighter soils—its roots are few, while the Manetti is furnished with an abundance of them, and so in a light soil these roots are able to draw a larger amount of nourishment from the soil around. I do not mean to say that the stock will not thrive in stiff soil; some of the finest plants I have ever seen at Mr. T. B. Hall's, at Larchwood, Rockferry, were on this stock. When we praise the Manetti, we are told, "Oh! but the Roses have got on their own roots." Perhaps so; but is not this an advantage? when budded low, the point of junction is buried, the Rose will soon emit roots, and thus the plant has a double chance. There is one thing about which caution is needed. There are some varieties of H.P.'s which have a good deal of Tea blood in them, Captain Christy,

La France, Lady Mary Fitzwilliam, &c.; these ought never to be budded on the Manetti, but, like the pure Teas, be given to the fostering care of the Briar. I have been told that the Manetti is short-lived, yet I have a couple of plants of *Souvenir de la Malmaison* budded on this stock which are now forty years old. They are pruned hard every year, and every year, especially in autumn, they give me an abundance of very lovely flowers. Its great defect is its habit of throwing up suckers from below the junction, and this has to be carefully watched against, for unlike the Briar, the foliage is very similar to that of the Rose, and hence one often hears from inexperienced hands, "I cannot understand why this Rose will not flower. It grows most vigorously, but I cannot get it to bloom." On examination it has been found that instead of a Rose, he has got a most sturdy bush of Manetti.

In planting Tea Roses where the situation is low and the soil heavy, the best plan is to raise the beds over the ground-level some few inches or so, just as is done in Potato culture on what are called "lazy beds" in Ireland; but it is questionable whether, in such situations, Tea Roses will thrive, for although I do not agree with the assertion of many successful growers of this class of Roses, that it is useless to try and grow them unless the garden is some 400 feet above sea-level. This observation, I think, arises from experience in the wet and damp West of England, and not in the dry climate of the Eastern Counties; yet there can be little doubt that they do prefer a dry situation, and one where the roots are not water-logged.

Although I have deprecated the mixing of manure with the soil when planting Roses, I am a strong advocate of the liberal use of manure in mulching, and this is better done at this time of the year, *i.e.*, when it is more the desire of the grower to have his garden neat in appearance than to obtain large exhibition blooms. I find it best to throw a little earth around the neck of each plant before laying on the manure, which should be done very liberally, say, to the depth of 6 inches, and letting it remain on the beds all the winter, preventing the frost from reaching the roots. All the fertilising salts are washed down by the winter rains, and then in the spring all the long strawy part is raked off, and the short portion gently forked in. This long stuff I found very good for laying up in a heap and planting Vegetable Marrows upon; there remains a certain amount of heat in it, and the plants start off rapidly.

I find it to be a good plan to somewhat shorten the long shoots before the winter, cutting off a foot or so, so that they are not so easily caught by the wind; and, as they are also somewhat steadied by the mulching, it obviates the necessity of staking them. With these precautions, our Roses are, I think, well equipped for enduring the winter storms. *Wild Rose.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 8.—For the last meeting of the year, there was an unusually fine display of bloom at the Drill Hall, Westminster, but the attendance was rather thin. Orchids formed the principal feature, the collections shown by Sir Trevor Lawrence, M.P., Messrs. Sander & Co., Collins & Collins, and Pitcher & Manda, being very fine. These are referred to at length elsewhere. Late-flowering Chrysanthemums were also well represented; but those who visited the exhibition for the purpose of seeing Hellebores must have been disappointed. A few clumps in pots were staged by various firms, but they were not so numerous as was generally expected. Owing to the unavoidable absence of Canon Ellacombe, too, the lecture on "Hellebores" was postponed.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. J. Laing, H. Herbst, B. Wynne, R. Dean, T. Baines, H. B. May, F. Ross, W. C. Leach, C. Jefferies, G. Phippen, H. H. D'Ombraim, C. E. Pearson, J. Walton, J. B. Poë, H. Turner, C. Noble, W. H. Williams, H. Cannell, G. Paul, and W. Furze.

Chrysanthemums were the principal feature in this section, and the collection exhibited by Mr. Owen, Maidenhead, attracted much attention. Most of them were new English-raised seedlings and American varieties, and many of the blooms were noteworthy for their size and freshness. The most conspicuous was a massive bloom of a Japanese incurved seedling named Robert Owen, said to be a cross between Sarah Owen and an American variety. The flower was of gigantic proportions, and a pleasing golden bronze colour. Among other varieties in this collection, the most noticeable were Lizzie Cartledge (Japanese), pale pink centre, deep rose edges, and silvery reverse; Peter Blair (Japanese), yellow, striped reddish crimson; Mrs. Gladstone (Japanese), creamy-white, sulphury centre; Mr. John Frith, Japanese incurved, of a pale pink colour, and hirsute petals in a slight degree; Rivelyn, a capital incurved of a golden bronze colour; and Thomas Selwood (Japanese), yellow.

Mr. Wells, Earlswood Nurseries, Redhill, also showed an interesting collection of Chrysanthemums, many of them being single varieties. The flowers of the latter were fresh, and of a useful decorative size, affording a fine contrast to the double blooms. These single Chrysanthemums might with advantage be more generally grown.

Chrysanthemum blooms were also exhibited by Mr. W. Whiteley, the Nurseries, Hillingdon, this collection comprising good examples of Princess of Teck and Mrs. Norman Davis. Mr. E. S. Willis, The Gardens, Elgicote Park, Banbury, also sent flowers of a white Chrysanthemum sport from Etoile de Lyon, but it did not appear to possess any noteworthy merit. Mr. G. Wythes, Syon House Gardens, showed blooms of an apparently useful white Chrysanthemum, named Duchess of Northumberland. Mr. C. Ross, Welford Park, Newbury, sent a Chrysanthemum Mrs. Pethers, with a sport in bloom growing from it; and Mr. Simpkins, gr. to R. Measures, Esq., Camberwell, staged a flowering branch of an imported Chrysanthemum named Mrs. H. Simpkins. The flowers of the latter were yellow, and of a feathery character. From Messrs. Pearson & Sons, Chilwell Nurseries, Nottingham, came blooms of Chrysanthemum, E. G. Hill, a fine golden yellow.

Hellebores were shown by Mr. T. S. Ware, Tottenham, who also sent several pans of *Narcissus monophyllus*, a useful subject for forcing. Iris *Histrio*, a charming little thing for winter flowering was also exhibited by the same firm. Messrs. R. Veitch & Co., Exeter, sent a fine clump of *Helleborus niger* major in bloom; also one or two other varieties. The flowers of the former were large, and of a pure white colour.

A small collection of *Begonia Winter Gem* came from Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea. The plants were small, but well-flowered, and afforded ample proof as to the usefulness of this variety for blooming during the winter. The same firm also sent cut blooms of hybrids of *Rhododendron javanico-jasminiflorum*, amongst which Duchess of Connaught, Princess Royal, Scarlet Crown, and Princess Alexandra were the most conspicuous.

Mr. W. Iggulden, Marston Gardens, Frome, sent bracts of a seedling *Poinsettia*, and Mr. C. Turner, Slough, *Poinsettia* major, but in neither case could any distinct improvement on the type be seen. *Adiantum Rochfordi* came from Mr. T. Rochford, Turnford, Brockham; Mr. L. Duval, Rue de Ermitage, Versailles, sent plants of *Vriesia cardinalis*; and Messrs. Pitcher & Manda, Hextable, sent *Zamia integrifolia*.

Messrs. Cannell & Sons, Swanley, had *Primulas* in pots, and flowers of *Leonotis leonorus*; and from Mr. A. Waterer, Woking, came sprays of the Knap-hill Oak, a scarlet-foliaged kind of remarkably rich colouring. Messrs. Paul & Sons, Cheshunt, sent specimens of a winter-flowering *Canna* named President Hardy; and Mr. G. Fry, Lewisham, showed a seedling *Carnation* with two distinct developments on one head.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. J. O'Brien, S. Conrauld, T. B. Haywood, J. Douglas, H. Ballantine, E. Hill, and H. M. Pollett.

This meeting brought forth a fine display of Orchids, several good groups being staged, the brightest of which was that sent by Sir Trevor Lawrence, Bart., M.P., the President of the Society, and tastefully arranged by Mr. W. White, his Orchid cultivator. The group was in two divisions, the larger one being made up of the beautiful Burford

Lodge hybrid *Calanthes*, and the smaller of fine plants of many distinct forms of *Cypripedium Læanum*, the largest and most distinct of which was the fine *C. Læanum giganteum* described by Mr. Rolfe. The *Calanthes* were a very bright group, consisting of abut a score of plants of the richly-coloured *C. Veitchii splendens* ×, and as many of the delicate blush-white *C. rosea* ×, some well-bloomed plants of *C. Burtfordensis* ×, one of the brightest of the dark-crimson hybrids; a good lot of *C. bella* ×, a dark form with white base to the lip, and dark-crimson eye; the richly-coloured *C. porphyrea* ×, *C. versicolor* ×, a new hybrid of the *C. vestita* section, with flowers as large as *C. v. gigantea*, and white with the exception of the centre, which has blended tints of yellow and crimson—a curious commingling of the two chief colours in *C. vestita*. There were also some interesting new hybrids springing from *C. labrosa*, one of the parents.

Messrs. F. Sander & Co., St. Albans, staged a handsome group of Orchids, consisting chiefly of rare species and varieties, and among them a new species of *Cymbidium* from Northern India, and named *C. pulcherrimum*, was a prominent subject; its graceful, arching, narrow foliage was of the texture of that of *C. eburneum*, but the stout scape which was curved downward, bore about a dozen wax-like white flowers, each of the segments of which had a dark crimson stripe, the petals also having a flush of the same port-wine colour in addition to the stripe. The richly-coloured labellum was yellow at the base, with fine lines of a crimson colour on the side-lobes, the middle-lobe being rich yellow in the centre, and dark crimson on each side of the blade; column dark crimson with yellow cap. The plant is good, and said to be unique. Messrs. Sander also exhibited another very rare *Cymbidium*, in *C. cyperifolium*, which has flowers like those of *C. giganteum*, but with pure white lip spotted with dark red. Among the *Cypripediums* staged in this group were the noble *C. Læanum giganteum* ×, *C. L. excellens* ×, *C. L. superbum* ×, *C. Niobe* ×, *C. Pollettianum* ×, *C. radiosum* ×, and nine plants of the variable and beautiful *C. insigne montanum*. Other good plants in this group were two large ones of the fragrant *Trichostema suavis*, two *Cattleya Hoifordii* (uteola), the delicately-tinted *C. O'Brieniana*, *Lælia autumnalis virginialis*, *Oncidium Rogersii*, *O. chlorophorum*, several *Odontoglossum crispum*, *O. ramossissimum*, *O. rosaceum*, *Cattleya dolosa*, *Odontoglossum Roezlii album*, *Lycaste Skinneri alba*, with ten flowers and buds, *Mormodes buccinator aurea*, a fine *Vanda cerulea* &c.

Messrs. Pitcher & Manda, The United States Nurseries, Hextable, Swanley, Kent, had a fine group, consisting mainly of rare *Cypripediums*, and among which the variation among the forms of *C. insigne* was remarkable, *C. i. Amesianum*, *C. i. Eyermannii*, and two or three other named kinds exhibiting very curious and distinct features. Their group also contained several specimens of the rare *C. Sallierii Hy-anum*, one of the large *C. tonsum superbum*, *C. Arthurianum*, and many others, one of the handsomest of which was *C. Læanum Maserelianum*. Messrs. Pitcher & Manda also effectively worked into their group the varieties of *Lælia autumnalis*, *Odontoglossum Humeanum*, and *O. luteum*.

Messrs. Collins & Collins, Cumberland Park Nurseries, Willesden Junction, staged a fine group of *Cypripedium insigne*, chiefly of the old type, and one or two distinct and showy new varieties. The group was set up with Ferns, &c., and had some good *Oncidium tigrinum* and *O. pratense* at the back, and a few good pans of the scarlet *Sophranitis* in front.

C. Ingram, Esq., Elstead House, Godalming (gr., Mr. Bond), sent a plant in flower of the beautiful *Dendrobium Macfarlanei*, whose flowers greatly resemble those of a white *Lælia anceps*; also two hybrid *Cypripediums*, the one between *Chantini* and *Harrisonianum nigrum* ×, and the other between *C. tonsum* and *C. Spicerianum*, also *C. radiosum* ×.

Baron Schroder, The Dell, Egham (gr., Mr. H. Balauntine), exhibited a fine spike of the new bright rosy-crimson *Schomburgkia Sanderiana*.

Messrs. Hugh Low & Co. sent a good plant of *Cypripedium Læanum Claptonense* ×, a flower of good substance, and with a little purple colour in the dorsal sepal.

Mr. Prewett, Swiss Nursery, Hammersmith, staged a plant of *Dendrobium superbens*. Malcolm S. Cook, Esq., Kingston Hill, exhibited a fine specimen of *Lælia alba* with fourteen spikes, also cut flowers of *Lælia elegans*, *Coclogyne barbata*, *Cypripediums*, &c.

Messrs. Lewis & Co., Southgate, had a small group, with a fine large form of *Cypripedium Curtisii*, two plants of *Zygopetalum Mackayii coccineum*, *Epidendrum ciliare*, and four good forms of *Odontoglossum crispum*; and C. W. Lea, Esq., Parkfield, Hallow, Worcester, gr., Mr. A. G. Catt, exhibited a fine spike of *O. coronarium*, to which a Cultural Commendation was given.

E. H. Woodall, Esq., St. Nicholas House, Scarborough, sent a fine spike of *Lælia anceps grandiflora*.

Fruit Committee.

Present: Philip Crowley, Esq. in the chair; Dr. Hogg, Rev. W. Wilks, and Messrs. J. Lee, R. D. Blackmore, Harrison Weir, G. W. Cummins, C. Ross, A. H. Pearson, W. Warren, T. J. Saltmarsh, A. D-an, W. Bates, W. Denning, G. Wythea, J. Hudson, H. Balderson, F. Lane, J. Smith, J. Cheal, and P. C. M. Veitch.

A capital lot of Apples, comprising fifty-two dishes, was exhibited by Mr. H. Alderman, gr. to G. Hatfield, Esq., Morden Hall, Morden; the majority of the fruit in this collection was of a high-class quality, the best varieties, however, being Bienenheim Orange, Peasgood's Nonsuch, Warner's King, Alexander, Alfristow, and Wellington.

Mr. A. Verdon, Greyhound Hotel, Carshalton, sent a dish of Apples of a large size, said to have been gathered from a tree over a hundred years old, which, moreover, seldom fails to bear fruit freely. The name given it was Wittington Füllbasket, and, notwithstanding its age, the tree, in some seasons, it was reported, yields 20 bushels of fruit.

Miss M. MacKnight, Maldon Lodge, Wallington, showed a dish of Croft Angry Apple; and Mr. J. Vass, Finches, Lindfield, sent a few dishes of Apples and Pears of good quality. Mr. C. Turner, Slough, staged a dish of Apples named A. P. Baron, the fruit being of excellent shape, as also were those of the new seedling Apple, Captain Sanders, samples of which were shown by Messrs. G. Paul & Sons, Cheshunt. From Messrs. W. Paul & Sons, Waltham Cross, came a small collection of Pears, and Mr. A. Colbourne, Woolhampton, Berks, sent a dish of German Apples.

Pines were grandly shown by Mr. T. Coomber, gr. to J. A. Rolls, Esq., The Hendre, Monmouth, who sent three magnificent specimens of Charlotte Rothschild and Smooth Conference. One fruit of the first-named weighed 9 lb. 14 oz., and those of the latter 8 lb. 4 oz. and 9 lb. 4 oz. respectively. They were remarkably well grown.

Mr. E. Gilman, gr. to the Earl of Shrewsbury, Ingestre Hall, Stafford, showed fruits of Ingestre Hybrid Melon, a white-flesh variety; and Mr. Walter King, gr. to Philip Crowley, Esq., Waddon House, Croydon, two fruits of the Citron, and a pot of the same preserved. The latter was of a brisk pleasant flavour, similar to marmalade.

A dish of fruit of *Banhamia fragifera* came from R. J. Wakes, Esq., Trevanick, St. Austell, Cornwall. Three dishes of Tomatos, Improved Hackwood Park, were shown by Mr. H. Wateley. A few Onions came from Mr. E. J. Wills, Baubury.

List of Awards.

ORCHID COMMITTEE.

MEDALS.

Silver Floral.

To Sir Trevor Lawrence, M.P., for group of Orchids.
To Messrs. F. Sander & Co., St. Albans, for group of Orchids.

Silver Banksian.

To Messrs. Pitcher & Manda, Hextable, Swanley, for group of Orchids.

Bronze Banksian.

To Messrs. Collins & Collins, Cumberland Park Nurseries, Willesden, for group of Orchids.

Award of Merit.

To Messrs. F. Sander & Co., for *Cypripedium Læanum giganteum* and *Cymbidium pulcherrimum*.
To Baron Schroder, for *Schomburgkia Sanderiana*.
To Sir Trevor Lawrence, for *Calanthe versicolor* and *Læanum giganteum*.
To Messrs. Pitcher & Manda, for *Cypripedium Læanum Maserelianum*.

FLORAL COMMITTEE.

MEDALS.

Bronze Banksian.

To Mr. W. Wells, Earlswood Nurseries, Redhill, for a collection of *Chrysanthemum* blooms.
To Mr. Wateley, Hillingdon, for *Chrysanthemum* blooms.
To Mr. T. S. Ware, Tottenham, for groups of *Helicoboras*, &c.

First-class Certificates.

To Messrs. Pitcher & Manda, for *Zanna integrifolia*.
To Mons. L. Duval, Versailles, for *Vnesia* × *cardinalis*.

Award of Merit.

To Mr. R. Owen, Maidenhead, for *Chrysanthemum* Henry Perkins, Boveyn, J. S. Fogg, Thos. Selwood, Lizzie Cartledge, and F. G. Hill.
To Messrs. Pearson & Sons, Nottingham, for *Chrysanthemum* E. G. Hill.

FRUIT COMMITTEE.

MEDALS.

Small Silver.

To J. A. Rolls, Esq., The Hendre, Monmouth (gr., Mr. T. Coomber), for Pears-apples.
To G. Hatfield, Esq., Morden Hall (gr., H. Alderman), for collection of Apples.

Cultural Commendations.

To Mr. J. Voss, Finches, Lindfield, for Pears Doyenné du Comice and Beurré Duval.
To Mr. H. Wateley, Hillingdon, for Tomato Improved Hackwood Park.
To Philip Crowley, Esq., Croydon (gr., Mr. W. King), for fruits of Citron.

NATIONAL CHRYSANTHEMUM.

DECEMBER 7.—A meeting of the committee took place at Anderton's Hotel, Fleet Street, Mr. R. Ballantine in the chair, and there was a large attendance of members. Among the correspondence read was a letter from the Rev. W. Wilks, secretary of the Royal Horticultural Society, announcing that in reply to a representation from the committee of the National Chrysanthemum Society, the November meeting of the Royal Horticultural Society in 1892 would be held one week later than usual, so as not to clash with the exhibition at the Royal Aquarium. The secretary was instructed to convey the thanks of the committee to the Rev. W. Wilks for his courtesy. A letter from Mr. J. H. Goodacre, of Elyston Castle Gardens, suggesting the adoption of some means by which greater uniformity in exhibiting blooms of incurved *Chrysanthemums* could be secured, was referred to the Schedule revision committee. Some awards recommended by the Floral Committee at their meeting on October 28, and by the judges at the November exhibition, were approved. The Secretary reported the dispatch of the Challenge Trophy to the Havant Chrysanthemum Society, the holders of the same until November next, and its safe arrival. Also that the special prize fund, opened at the annual dinner, amounted to £25, including a sum of £9 from Messrs. Reid & Bornemann, nurserymen, Sydenham. A recommendation from the Floral Committee, in reference to a suggested improvement in exhibiting blooms of Japanese *Chrysanthemums*, was referred to the Schedule revision sub-committee. It was resolved that three exhibitions be held in 1892, viz., the usual early show in September with Dalhas, one in October, and one in November; each exhibition to extend over two days—these to take place, as usual, at the Royal Aquarium, Westminster. The November show to be held on Tuesday and Wednesday, November 8 and 9; the date of the other two exhibitions to be suggested by the Schedule sub-committee. The Chairman and Secretary were requested to wait upon the Director of the Royal Aquarium, to arrange. The following members were appointed a Schedule sub-committee:—Messrs. Addison, B-van, Boyce, Craue, Gibson, Gordon, Stevens, and Wynne, with the officers *ex officio*. Twenty-four new members were elected, including one Fellow; and the Havant and Tenby (South Wales) *Chrysanthemum* Societies were admitted to affiliation. A hearty vote of thanks was passed to Mr. Thomas Bevan, for providing the dessert and arranging the floral decorations at the recent annual dinner. A vote of thanks to the Chairman brought the proceedings to a close.

DECEMBER 9, 10.—The early-winter exhibition of the National Chrysanthemum Society was held at the Royal Aquarium, Westminster, on the above-mentioned dates, and, although small, was attractive. *Chrysanthemums* were not so numerous as might have been expected, but those staged were of fair quality. Neither were *Cyclamens* very plentiful, while of *Primulas* only two or three lots were shown, but in each case the plants were well-flowered.

The principal features were the collections of cut *Chrysanthemums* shown in bunches, the 1st prize for which went to Mr. H. J. Jones, Ryecroft nursery, Lewisham, for a meritorious lot. This exhibit contained some capital blooms, remarkable for their freshness and the manner in which they were staged. The flowers were bunched loosely, and shown with Maidenhair Ferns. The 2nd prize in this class was awarded to Mr. W. Wells, Earlswood nurseries, Redhill, for a good collection of fresh blooms.

For twenty-four blooms, any varieties, Mr. T. Taylor, gr. to Sir John Lubbock, Bart., High Elms,

Farnborough, was 1st, with good flowers, conspicuous amongst which were Lady Lawrence, Mabel Ward, and Grandiflora; and Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods, took 2nd honours.

Mr. C. F. Salter, gr. to Mr. T. B. Haywood, Reigate, was 1st for twelve blooms, which included good examples of Moonlight, Lady Lawrence, Carew Underwood, Mr. G. Deover, and Sunflower; Mr. C. Cox, The Grange, Birchenden, was 2nd; and Mr. H. Shoemith, gr. to M. Hodgson, Esq., Shirley, Croydon, a close 3rd. In both the latter stands the blooms were fine, and very fresh.

Mr. Shoemith took 1st prize for twelve blooms of Princess of Teck or any of its sports, with remarkably fine flowers for the time of year. The varieties shown in this stand were Lady Dorothy, Hero of Stoke Newington, C. Gibson, and the type. Mr. Peter Bair, Trentham, was 2nd, and Mr. W. W. Gilbert, Norfolk, 3rd.

For twelve bunches of Japanese blooms, Mr. Wells, Redhill, was 1st; Mr. J. Bridle, gr. to R. Falconer James, Esq., Hesse, Hull, 2nd; and Mr. J. Browne, Great Doods, Reigate, 3rd. Mr. Newell, gr. to Sir E. Saunders, Fairlawn, Wimbledon Common, was 1st for six bunches of Japanese; and W. A. Searing, The Gardens, Oakshott, Sevenoaks, 2nd.

For twelve bunches of Japanese blooms, Mr. Lang, gr. to Miss Smith, King's Ride, was 1st; Mr. Taylor, 2nd; and Mr. W. W. Gilbert, 3rd.

The best epergne was shown by Mr. C. Ings, gr. to Sir Spencer Wells, Bart., Golder's Hill, Hampstead, that of Mr. Newell being placed 2nd; Mr. W. A. Searing was 3rd.

In the miscellaneous classes, Messrs. Cannell & Sons showed a nice collection of Chrysanthemum blooms and plants of Primulas, for which a Silver Medal was awarded. Similar honours went to Messrs. Pitcher & Manda, Hextable, for a group of Cypripediums; to Messrs. Clibran & Sons, Altrincham, for a collection of Chrysanthemums; and to Mr. R. Owen, Maidenhead, for Chrysanthemums.

Messrs. Cutbush & Sons, Highgate, staged a group of miscellaneous plants, and Mr. J. Bateman, gr. to Mrs. King, Southwood, Sydenham, a collection of Primulas. Cyclamens were best shown by Mr. David White, gr. to Mrs. Farrell Watson, Isleworth; and Mr. May, St. Margarets, staged plants of Cyclamen Queen of the Whitea, for which a First-class Certificate was awarded.

Mr. W. Webster, The Gardens, Streatham, was 1st for three specimen Chrysanthemums.

VEGETABLES.

GOOD WINTER BROCCOLIS.

If mild weather continues there will be no lack of green vegetables, as in some gardens the late Autumn Giant Cauliflowers are not over. But it usually happens that after a mild autumn we get a severe winter, so precaution should be taken to house the early kinds of Broccoli when at their best. Snow's Winter White, a grand Broccoli for early winter use, will need looking over frequently, and those with small heads removed to a safe place. This variety is often difficult to obtain true to name, but if it can be got, it is valuable on account of its beautiful white heads and superior mild flavour. I usually make two sowings of this kind, the first to succeed the Cauliflowers, and the next for December use. Usually it is about the size of a cricket-ball at the latter date, and invaluable for table use.

There are now so many kinds of Broccoli, that it may be of interest to the young beginner to name a few of the best, and to point out the importance of planting this crop on firm land. When planted on newly dug and freshly-manured land, the growth is so soft, that in severe weather the plants invariably succumb. It is also advisable to plant on different quarters of the gardens, as often one lot is saved while others are lost.

A very good variety for spring use is Veitch's Spring White. It is not large, but of excellent quality, and the head is well protected. The well-known Walcheren is also most valuable for the same purpose, and Penzance Early White is deserving of notice. To follow these I grow Cattell's Eclipse, an old variety, and not liked by everyone on account of

its sulphur colour, but it is one of the hardiest kinds grown. Gilbert's Late White is a good variety, and should be in all collections of late kinds. For late use I give Model, a very hardy kind, the first place. It is the only one that survived the severe weather last winter with me, and I advise its being planted largely in all gardens. For winter work, too, it is invaluable on account of its hardy free-growing qualities. It has a very sturdy habit, short leg, with a very hard stem, and the foliage is close to the ground; the flower is beautifully white, and very close. I also advise heeling over at this date; as though it diminishes the size of the heads, it often saves the crop. G. Wythes.

VARIORUM.

SOUTH SHIELDS CHRYSANTHEMUM SOCIETY.
NOVEMBER 25—This town has held previously three successful shows, but recently these have been discontinued. This year the new Assembly Hall, standing on about one acre of ground, afforded a splendid site for a Chrysanthemum exhibition, and by dint of hard work on the part of the committee and the honorary secretaries, Mr. Bernard Cowan and Mr. H. Hinde, good results were obtained. Mr. B. Cowan has been associated with the society for a long time, and his services were of great value in making the affair a success. The blooms and plants reflected great credit on the cultivators, mostly local or, at least, north country residents. Although good work was done, great improvements may confidently be looked for next autumn.

WALNUTS.—It may not be generally known that the English market is largely supplied with Walnuts from Grenoble. The crop is often imperilled by the spring frosts, to which that part of France is subject.

THE MANUFACTURE OF JAM.—*Apropos* of the article which appeared in our issue of November 14, it may interest our readers to know that Mr. W. P. HARTLEY, Aintree, Liverpool, turns out at his jam factory 100 tons of jam per day, which is equal to 112,000 2-lb. jars daily, and the number of persons employed by him in the busy part of the summer months is between 1,100 and 1,500.

FLOWERING OF THE AMERICAN ALOE.—It is not remarkable that in the reports of the Chrysanthemum show held at York the other day, special notice has been taken of the American Aloe exhibited in flower by Lord Deramore. May I put before your readers the following extracts from that classical work on horticulture, *Miller's Gardeners' Dictionary*, 1731, folio ed? "I can't here forbear taking notice of a vulgar error or two relating to the large American Aloe, which is, that it never flowers until it is an hundred years old, which is a mistake, since we have had several of them flower in England, some of which were known not to exceed fifty years old, &c." . . . "Another common error is that when the flower opens it makes a report like that of firing a gun; this is sufficiently confuted by all those who have been where these plants have flowered; but I suppose the rise of the story might proceed from some persons saying when one of these plants flowered it made a great noise, meaning, thereby, that whenever one of them flowered in England it was spread abroad as an uncommon thing, and occasioned a great noise amongst the neighbouring inhabitants, most of whom usual repair to see it as a thing that rarely happens and as a great curiosity." I fear that when "vulgar errors" had not met with their antidote in the newspaper press, they were long in dying. *Richd. Reynolds*, in the "Yorkshire Post."

shire, by Isabella, daughter of Mr. J. Horne, of Stirkoke, Caithness-shire. He emigrated to New South Wales in 1839, and was for fifteen years engaged in sheep farming. He was a member of the Legislative Assembly of New South Wales from 1854 to 1874, during which period he did much to improve the railway communication in the colony. Sir William Macleay devoted much attention to scientific pursuits, especially to entomology, and in 1874 conducted, at his own expense, a successful mission to New Guinea. He was the first President of the Australian Linnean Society, was President of the Entomological Society, and has been member of the Legislative Council since 1874. *Times*.

MR LISTER KERSHAW, nurseryman, florist, and landscape gardener, died at his residence, Brighthouse, on November 21, at the age of 67 years. Twenty-six years ago Mr. Kershaw established the well-known Elm Wood nurseries in Bradford Road, Brighthouse, and some few years later a florist's business in the town. He was well-known as a successful landscape gardener, and was the recipient of many awards for designs for parks and gardens, notably Bowling Park, Bradford, West Hartlepool, and the Devonshire Park, Keighley. Amongst the places that he designed and carried out, mention may be made of Bradford Moor Park, Chipping Norton Park, public parks at Stratford-on-Avon and in Jersey. He was an enterprising and successful man of business, and took a prominent part in local matters.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS. Above (+) or below (-) the Mean for the week ending December 5.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.				10ths Inch.	Ins.	Percentage of possible Dur- ation for the Week.	Percentage of possible Dur- ation since Jan. 4, 1891.	
	Above 42° for the Week.	Below 42° for the Week.	Above 42° diff. from Mean since Jan. 4, 1891.	Below 42° difference from Mean since Jan. 4, 1891.					More (+) or less (-) than Mean for Week.	No. of Rainy Days since Jan. 4, 1891.	Total fall since Jan. 4, 1891.
1 5 +	27	10	+ 209	+ 108	7	+ 221	47.9	9	27
2 5 +	30	17	+ 59	+ 157	1	+ 179	27.8	15	30
3 4 +	27	13	+ 92	+ 106	2	+ 169	22.4	13	28
4 4 +	34	15	+ 61	+ 112	2	+ 181	21.6	15	33
5 5 +	34	14	+ 97	+ 104	over	+ 175	27.7	20	31
6 6 +	34	1	+ 104	+ 130	5	+ 173	30.8	8	36
7 5 +	30	6	+ 89	+ 67	8	+ 185	43.0	16	32
8 4 +	31	7	+ 32	+ 41	5	+ 168	33.8	20	19
9 4 +	39	0	+ 139	+ 118	3	+ 181	40.0	26	37
10 3 +	27	8	+ 12	+ 67	5	+ 205	31.5	24	31
11 3 +	36	5	+ 54	+ 66	7	+ 185	35.8	30	34
12 4 +	61	0	+ 32	+ 41	2	+ 182	33.2	24	47

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending December 5, is furnished from the Meteorological Office:—

"The weather during this period was again very unsettled, mild, and humid, with rain at frequent intervals.

"The temperature was above the mean in all districts, the excess ranging from 3° in Ireland,

Obituary.

SIR WILLIAM MACLEAY.—A Dalziel telegram from Sydney, dated yesterday, announces the death of Sir W. Macleay, brother of Sir G. Macleay, Pendell Court. Sir W. Macleay, who was born in 1820, was the son of Mr. K. Macleay, of Newmore, Ross-

to 4° or 5° in most parts of Great Britain, and to 6° in 'England, S.' The highest of the maxima, were generally recorded between the 3rd and 5th, and varied from 56° in 'Ireland, N.,' to 59° in 'England, N.W. and N.E.,' and to 62° in 'Scotland, W.' The lowest of the minima were recorded during the earlier part of the week, and ranged from 25° in 'England, E.' and 'Midland Counties,' to 30° in 'Scotland, N.' and 'Ireland, N.' In the 'Channel Islands,' however, the thermometer did not fall below 44°.

"The rainfall was rather less than the mean in 'England, N.E.,' and equal to it over the 'Midland Counties.' In all other districts it was more than the normal, the excess in most cases being considerable.

"The bright sunshine shows a decrease on that recorded during the preceding week, but in all the western and north-western districts it again exceeded the mean for the time of year. The percentage of the possible duration ranged from 8 in 'England, S.,' and 9 in 'Scotland, N.,' to 26 in 'England, S.W.,' and to 30 in 'Ireland, S.'"

MARKETS.

COVENT GARDEN, December 10.

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

LARGE arrivals of Canada and Nova Scotia Apples to hand, prices ruling lower, making the trade for English goods dull. Grape trade firmer at last week's quotations. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Apples, Canadian and Nova Scotian, per barrel ...	10 0-18 0	Kent Cobs, 100 lb. 30-35 0	Lemons, per case ...
Apples, ½-sieve ...	1 0-4 0	Pine-apples, St. Michael, each ...	2 0-6 0
Grapes ...	0 6-2 6		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Acacia or Mimosa, French, per bunch ...	1 0-1 6	Marguerites, per doz. bunches ...	3 0-4 0
Azalea, p. doz. sprays ...	1 0-1 6	Narcissus, paper-white, Fr., p. bun. ...	4 0-8 0
Camellias, white, doz. ...	3 0-4 0	Orchids:—	
— red, per doz. ...	1 0-1 6	Cattleya, 12 blms. ...	6 0-12 0
Carnations, 12 blms. ...	2 0-2 6	Odontoglossum crispum, 12 blms. ...	3 0-6 0
Chrysanthemums, 12 blooms ...	1 0-5 0	— 12 bunches ...	3 0-12 0
— 12 bunches ...	3 0-12 0	Pelargoniums, scarlet, per 12 bun. ...	4 0-6 0
Cloves, per dozen blooms ...	2 0-2 6	— 12 sprays ...	1 0-1 6
Encharis, per dozen ...	5 0-7 0	Roses, Tea, per dozen ...	1 0-3 0
Gardenia, per dozen ...	1 0-6 0	— coloured, dozen ...	2 0-4 0
Heliotrope, 12 sprays ...	0 6-9 0	— yellow (Marchals), per doz. ...	4 0-6 0
Hyacinths, 12 sprays ...	0 6-1 0	— red, per dozen ...	1 6-2 0
Lilac, white (French) per bunch ...	6 0-8 0	Tuberose, 12 blms. ...	0 4-0 9
Lilium Harrisii, doz. ...	4 0-6 0	Violets, Parme, per bunch ...	3 6-4 0
Maiden Hair Fern, 12 bunches ...	4 0-9 0	— Czar, per bunch ...	2 0-2 6
Mignonette, doz. bun. ...	1 6-2 0	— English, 12 buns. ...	1 0-1 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Adiantum, per doz. ...	4 0-12 0	Erica hymenalis, per dozen ...	12 0-18 0
Aralias, per doz. ...	6 0-12 0	— small, per 100 ...	8 0-15 0
Aspidistra, per doz. ...	18 0-63 0	Ficus, each ...	1 6-7 6
Begonias, per doz. ...	4 0-6 0	Scarlet Pelargoniums, per doz. ...	4 0-6 0
Chrysanthemums, — large, each ...	2 0-3 6	Heliotropes, per doz. ...	4 0-6 0
— small, each ...	3 0-6 0	Marguerites, per doz. ...	6 0-12 0
Coleus, per doz. ...	9 0-18 0	Palms, various, each ...	2 0-21 0
Cyclamens, per doz. ...	4 0-10 0	— specimens, each ...	10 6-84 0
Cyperus, per dozen ...	1 0 5 0	Romau Hyacinth, p. doz. pots ...	9 0-12 0
Draecenas, each ...	1 0 5 0	Solanums, per dozen ...	9 0 12 0
Epiphyllum, p. doz. pots ...	9 0-18 0	Tulips, per doz. pots ...	9 0-12 0
Erica gracilis doz. ...	8 0-12 0		
Ferns, various, doz. ...	4 0-9 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, each ...	0 4-0 6	Lettuces, per doz. ...	1 6-2 0
Beans, French, lb. ...	0 6-1 0	Mushrooms, punnet ...	2 0- ...
Beet, red, per dozen ...	2 0-3 0	Mustard and Cress, punnet ...	0 4- ...
Carrots, per bunch ...	0 4-0 6	Parsley, per bunch ...	0 3-0 6
Cauliflowers, each ...	0 3-0 6	Shallots, per lb. ...	0 6- ...
Celery, per bundle ...	1 0-3 0	Spinach, per bushel ...	3 6- ...
Cucumbers, each ...	0 6-0 9	Tomatoes, per lb. ...	0 9-1 3
Endive, per dozen ...	2 0-3 0	Turnips, per bunch ...	0 4-0 6
Herbs, per bunch ...	0 9-1 0		

SEEDS.

LONDON, Dec. 9.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., report the seed markets well attended this week, as a result of the Cattle

Show. Alsike continues exceedingly scarce, and is much inquired for. White Clover seed keeps dear. American cables come strong. For Trefoil and Rye-grasses there is an improved tone. Peas arrive slowly. Some very choice Canadian Blue boilers now offer at exceedingly tempting rates. Haricot and Runner Beans continue steady. Canary, Millet, and Hemp seed are firm. There is no change in Mustard or Rape-seed. The Board of Trade returns give the seed imports into the United Kingdom for the first eleven months of this year as cwts. 209,583 value £148,528 as against cwts. 358,911 value £709,658 for the corresponding period of 1890.

FRUITS AND VEGETABLES.

SPITALFIELDS: Dec. 8.—Quotations:—English Apples, 3s. to 5s. per bushel; American do., 10s. to 17s. per barrel; English Tomatoes, 4s. to 6s. 6d. per peck; foreign do., 1s. to 1s. 6d. per box; Seakale, 1s. to 1s. 6d. per punnet; Cabbages, 1s. to 2s.; Savoys, 1s. 6d. to 2s. 6d.; Cauliflowers, 8s. to 14s. per tally; Greens, 1s. 3d. to 1s. 9d.; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 1s. to 2s. 6d.; Parsley, 1s. 6d. to 2s. 6d. per dozen bunches; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Parsnips, 4d. to 8d. per score; Endive, 1s. to 1s. 6d.; Cabbage Lettuce, 4d. to 9d.; Leeks, 1s. 6d. to 2s. 6d.; Beetroot, 4d. to 1s. per dozen; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Bordeaux Onions, 4s. 3d. to 4s. 9d.; Spanish do., 5s. 6d. to 6s. 6d. per case; Belgian do., 3s. 9d. to 4s. 6d.; Dutch do., 3s. 6d. to 4s. 6d. per bag of 110 lb.; Celery, 6d. to 1s.; Horseradish, 1s. to 1s. 1d. per bundle.

BOROUGH: Dec. 8.—Quotations:—Cabbages, 2s. to 3s.; Savoys, 2s. 6d. to 3s.; Broccoli, 5s. to 9s. per tally; Spinach, 2s. to 3s. per bushel; Turnips, 1s. to 1s. 6d.; Carrots, 1s. to 1s. 9d. per dozen bunches; English Onions, 4s. 6d. to 5s. per cwt.; English Apples, 2s. to 6s.; Pears, 2s. 6d. to 7s. per bushel; Canadian Apples, 12s. to 25s.; Newtown Pippins, 18s. to 45s. per barrel.

STRATFORD: Dec. 9.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Savoys, 3s. to 5s. per tally; Greens, 1s. 3d. to 1s. 6d. per dozen bunches; Cauliflowers, 9d. to 1s. 3d. per dozen; do., 3s. to 6s. per tally; Turnips, 1s. 6d. to 2s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 3s. to 4s. 6d.; do., cattle-feeding, 2s. to 3s. 6d.; Parsnips, 60s. to 70s. 6d.; Mangels, 14s. to 18s.; Swedes, 18s. to 25s. 6d.; Onions, English, 100s. to 120s. 6d.; do., Dutch, 3s. to 4s. per bag; Apples, English, 2s. to 6s. per bushel; American, 14s. to 20s. per barrel; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; do., 1s. 9d. to 2s. 6d. per sieve.

POTATOS.

SPITALFIELDS: Dec. 8.—Quotations:—Magnums, 57s. 6d. to 75s.; Regents, 60s. to 70s.; Champsions, 60s. to 65s.; Imperators, 60s. to 65s.; Hebrons, 60s. to 70s.; Bruce Magnums, 60s. to 75s.; Main Crop, 70s. to 90s.; Abundance, 60s. to 80s. per ton.

BOROUGH: Dec. 8.—Quotations:—Hebrons and Elephants, 70s. to 90s.; Imperators, 60s. to 85s.; Bruce Magnums, 60s. to 90s. per ton.

STRATFORD: Dec. 9.—Quotations:—Magnums, 60s. to 85s.; White Elephants, 65s. to 75s.; Hebrons, 65s. to 75s.; Scotch Main Crop, 90s. to 100s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Dec. 5, and for the corresponding period last year:—1891, Wheat, 38s. 11d.; Barley, 30s. 9d.; Oats, 22s. 2d. 1890, Wheat, 32s. 5d.; Barley, 28s. 9d.; Oats, 17s. 10d. Difference: Wheat, +6s. 6d.; Barley, +2s.; Oats, +4s. 4d.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; do., inferior, 40s. to 75s.; hay, best, 60s. to 92s.; do., inferior, 26s. to 50s.; and straw, 20s. to 40s. per load.

NOTICES TO CORRESPONDENTS.

BOOKS: J. K. Thompson's *Gardeners' Assistant*, new edition. Blackie & Son, London and Edinburgh.
—MARKET FRUIT GROWING: *G. E. Fruit Growing for Profit*, by Mr. G. Bunyard, The Old Nurseries, Maidstone.

CATTELEYA GRUB: N. C. C. In all probability this is the grub of the *Isosoma*, figured in our columns November 1, 1890. The grub develops into a winged insect.

CLEMATISES, EARLY AND LATE, FOR TRUNKS OF TREES: A. B. Early, one of the lanuginosa type, as Alba Magna or Duke of Norfolk; late, Rubella or Magnifica. If a sweet-scented species is required, plant C. flammula. In your garden you must dig large

holes, afford good drainage, and not plant them deep, rather plant on a slight mound.

COLOURED SPAR: G. E. C. Try Mr. Rosher, Artificial Stone Manufacturer, &c., Church Street, Chelsea.

CORRECTION—CONFERENCE PEAR: In our account of this fruit in our last issue, we inadvertently stated that Miss Rivers drew the figure from which the engraving was executed, which was not the case.

DICKSONIA ANTARCTICA: *Constant Reader*. Lift it, if you can, without disturbing the roots, and put the drainage in good order, but deferring the retubbing until March.

ELMS FOR AN AVENUE: J. M. *Ulmus americana*, *U. campestris*, *U. glabra*, *U. campestris cornubiensis*, *U. montana*, Huntingdon Elm. The above make big trees, and would harmonise if planted in pairs in an avenue. There are many more Elms, but none that would harmonize with these in size, habit, &c.

GARDENING SITUATION IN U.S.A.: *Fred. G.* One of the best mediums for advertisements of the kind you wish to insert is *Garden and Forest*, published by the Garden and Forest Publishing Co., Tribune Buildings, New York. The *American Florist* has a big circulation: 54, La Salle Street, Chicago.

GREATEST WEIGHT PER ACRE OF STRAWBERRIES: G. E. Between 1½ and 2 tons, but the weight varies according to variety, soil, and method of cultivation.

INSECTS: G. P. H. The grubs of some kind of weevil, very destructive to the roots of plants. Catch the full-grown weevils, and hand-pick all potting-soil before using it.

MALFORMED APPLE: W. Brown. These freaks of Nature are not uncommon. In this case there had been a union of two blossoms, and later of the fruits—one well-developed in all its parts, the other not much developed. The former attained its normal size, whilst the latter remained small.

NAMES OF FRUITS: J. H. B. Striped Beefing.—*W. H. H.* 1, Blenheim Orange; 2, Fearn's Pippin.—*T. N.* Not recognised.—*A. G. G.* 1, Yorkshire Beauty; 2, Gravenstein; 3, 4, 5, not recognised; apparently worthless varieties.—*J. H. W.* 1, Grenadier; 2, Blenheim Orange; 3, Golden Noble; 4, Nelson Codlin; 5, Boston Russet; 6, Winter Strawberry.—*W. F. Beurid* Rance.

NAMES OF PLANTS: C. N. *Griselinia littoralis*.—*W. H.* 1, *Nephrolepis exaltata*; 2, *Adiantum cuneatum*; 3, *Cypripedium insigne*.—*H. G.* *Coelogyne fuscacens* (two varieties)—*J. T. L.* *Blechnum occidentale* (barren); 2, *Davallia pyxidata*; 3, *Blechnum occidentale* (fertile); 4, send a fertile frond; 5, *Abutilon marmoratum*.—*P. A.* *Retinospora plumosa aurea*; 2, *Thuia*, we cannot tell which from the scrap sent; 3, *Retinospora leptoclada*; 4, *Thuiopsis dolabrata*.—*MYNOGASTER: Major-General Berkley*. It is *Diachæa leucopoda*. The name that you employ is given to the British Museum collection, *W. G. S.*

SEEDLING BRIAR: H. P. It is a good stock for most kinds of Roses, and is excellent for grafting or crown-budding, so that the scion may in time come beneath the soil; and because the roots when young are small and pliable, it is a good stock for potting. See "Rosery" in this issue.

THE BEST STEWING PEAR: J. B. S. The Verulam is, perhaps, one of the best, of a crimson colour, and of good flavour when stewed. Season, January to March.

TOMATOS: A. B. Ham Green Favourite, the old red, or Hathaway's Excelsior, if you prefer good flavour to mere size.

COMMUNICATIONS RECEIVED.—C. D.—C. N.—T. F. R.—C. S. W. M.—H. R. M.—J. M.—B. H.—Canon E.—Professor McC., Cape Town.—A. Watt.—W. F.—Old Subscriber.—G. Rideout.—L. S.—E. L. Hillier.—W. E. D.—J. D.—W. J. G.—J. W. (2).—E. J.—J. G.—W. A. C.—R. A. R.—D. G. M.—W. A. C., York.—F. L. S.—W. K. W.—T. B.—E. C.—T. Smith, Timaru, N.Z.—E. Gilman.—J. W.—Robert McKee (the report could not be used in time).—Forester.—J. B.—F. R.—J. C. G.—A. Piper.

DIED.—On the 6th inst., at St. Albans, Kennoull, Perth, JOHN ANDERSON ANDERSON, in his 80th year.

SHRUBS and CONIFERÆ.—American Arbor-vitæ, 2½ feet, 20s. per 100; Berberis aquifolium, 2 feet, 16s. per 100; Box Tree, 1½ foot, 12s. per 100; Cotoneaster microphylla, 2 feet, 12s. per 100; C. Simonsii, 3 feet, 12s. per 100; Escallonia macrantha, pot, 2 feet, 24s. per 100; Laurel, Common, 1½ foot, 10s. per 100; 2 to 2½ feet, 14s. per 100; 3 to 3½ feet, 20s. per 100; rotundifolia, 2 to 2½ feet, 16s. per 100; Portugal Laurel, 2 to 2½ feet, 22s. per 100; Rhododendron ponticum, 1½ to 2 feet, 25s. per 100; 2 to 2½ feet, 32s. per 100; 3 feet, 50s. per 100, full of buds; Yews, English, 1½ to 2 feet, 24s. per 100; 2 to 2½ feet, 30s. per 100; Araucaria imbricata, 2 to 3½ feet, 30s. per doz.; 4 feet, 40s. per doz.; Cupressus Lawsonii, 2 to 3 feet, 20s. per 100; 3 to 4 feet, 30s. per 100; Erecta viridis, 2 to 2½ feet, 30s. per 100; 3 to 3½ feet, 40s. per 100; Picea Nordmannia, 2 feet, 60s. per 100; 2½ to 3 feet, 12s. per dozen; Retinospora plumosa, 2½ feet, 30s. per 100; 4 to 4½ feet, 50s. per 100; Thuia Lobbi, 3 to 4 feet, 30s. per 100; 5 feet, 50s. per 100; 6 feet, 70s. per 100; 7 feet, extra, 80s. per 100; Thuopsis dolabrata, 2 feet, 40s. per 100; 2½ feet to 3 feet, fine specimens, 24s. per dozen; 4 to 5 feet, 4s. each.

GARLIES MITCHELL, Nurseryman, Stranraer.

STANDISH'S GARDENIAS.—Well-grown plants, clean, and showing flower-bud, 21s., 30s., and 42s. per dozen, package free for cash with order.

Royal Nurseries, Ascot.

ROSES! ROSES!! ROSES!!!—The best and cheapest in the world. 40 Choice Perpetuals for 21s.; purchaser's selection from 400 best varieties; Catalogues free on application. Twelve Acres of Roses. 100,000 grand plants to select from; plant now.

JAMES WALTERS, Rose Grower, Exeter.

NEW HARDY PLANT CATALOGUE of HERBACEOUS, ALPINE, and SELECT PERENNIAL GARDEN PLANTS. Over 2000 Species and Varieties. Over 100 pages. Post-free for six stamps (free to Purchasers of plants), on application to—

MANAGER, Guildford Hardy Plant Nursery, Millmead, Guildford.

STRONG QUICK, 2 to 3 feet, 10s. per 1000.

OAKS, 2 to 3 feet, 12s. 6d. per 1000.
BEECH, 1½ to 2 feet, 1s. per 1000.
LARCH, 2 to 3 feet, 21s. per 1000.
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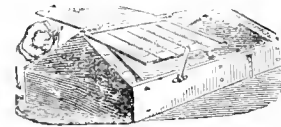
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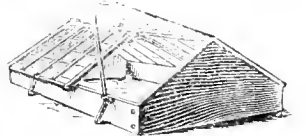


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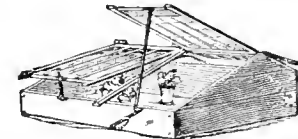
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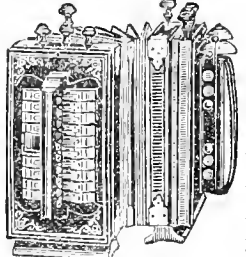
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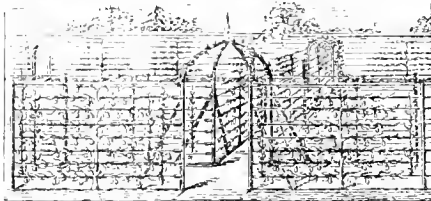
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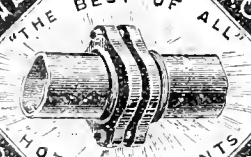
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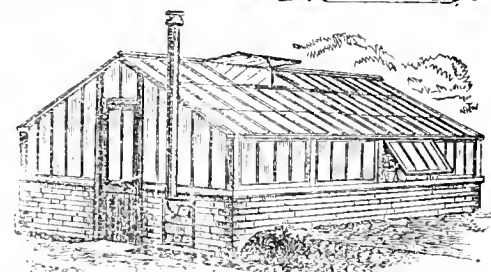
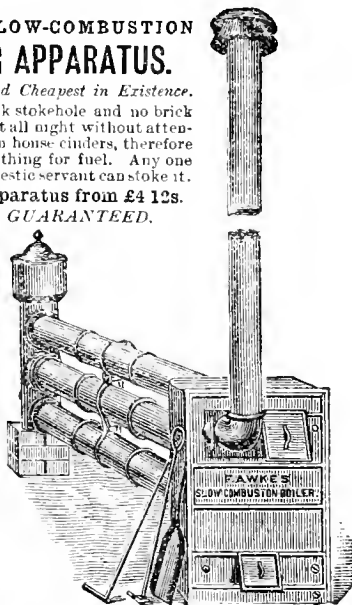
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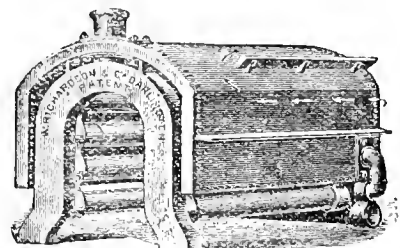
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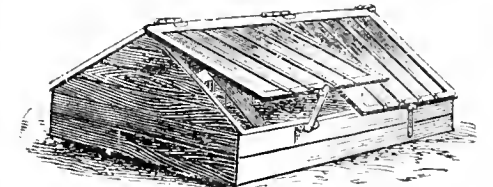
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MR. R. C. TOWNSEND, as Head Gardener to Colonel LLOYD, Aston Hall, Oswestry.

MR. G. W. D'ARCY, formerly of Reve-by Abbey Gardens, Boston, Lincolnshire, as Head Gardener to the Earl of KINGSTON, Killoonan Castle, Keddie, Carrick-on-Shannon.

MR. L. COLE, formerly Gardener to H. M. MACKUSICK, Esq., of Lyttel Hall Gardens, Nutfield, as Gardener to Mrs. RUSHTON, The Cedars, Milverton, Leamington.

MR. WILLIAM HICKS, Foreman to Mr. GILMAN, Jogestre, as Gardener to the Earl of AYLESFORD, Puckington Hall Coventry, and not Mr. C. STOCKING, as stated in our last

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BOROUGH OF WARRINGTON.

APPOINTMENT OF HEAD GARDENER.

The Corporation of Warrington require the services of an experienced gardener at the Bank Park and Gardens. Applications, stating age and salary required, and accompanied by not more than two recent testimonials, to be sent to me on or before Monday, the 14th inst.

Dated this 4th day of December, 1891.

J. LYON WHITTLE, Town Clerk.

Town Hall, Warrington.

WANTED, by the Corporation of Stockton-on-Tees, a thoroughly PRACTICAL GARDENER, to superintend the Laying-Out of the New Park, 40 acres in extent. He must have a good knowledge of Trees and Shrubs, and experience in their Planting; and possess an efficient method in the Management of Men. The person appointed would also be required to act as Urinator and principal Care-taker of the Park. Salary £100, with House, Gas, Rates, and Water Free. Applications, with three recent testimonials, to be sent to me by the 21st inst.

MAT. B. DODDS, Town Clerk, Stockton-on-Tees.

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Being a Description of the Country, the Manners and Customs of the Natives, and the many startling events of Four Years of Camp and Canoe Life in the Odontoglossum and Cattleya districts of Colombia.

A complete Volume of 300 pages, Illustrated by about 100 Woodcuts and Engravings made from

PHOTOGRAPHS TAKEN ON THE SPOT.

Also a Magnificent Coloured Chromo Frontispiece of Cattleya Mendelii.

CASSELL AND COMPANY (LIMITED), LUDGATE HILL, LONDON.



THOMAS GREEN & SON, LIMITED, SMITHFIELD IRONWORKS, LEEDS, AND SURREY WORKS, BLACKFRIARS ROAD, LONDON, S.E.,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

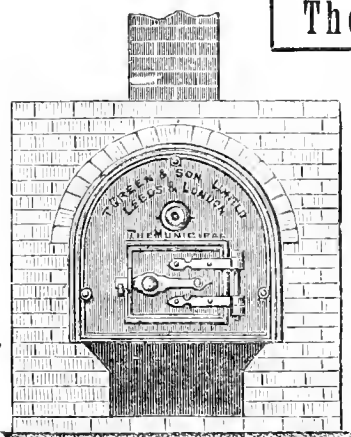
And others with **SHELVES**, and Hollow or Ordinary Cast-iron **GRATE BARS.**

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

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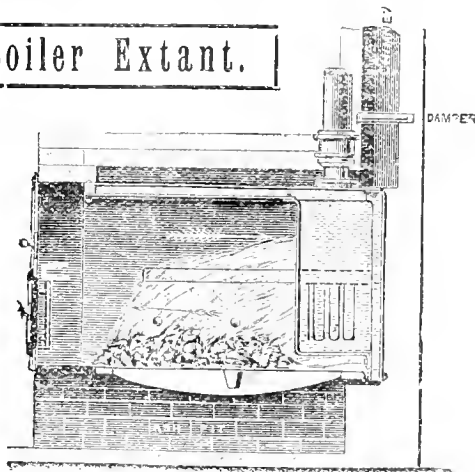
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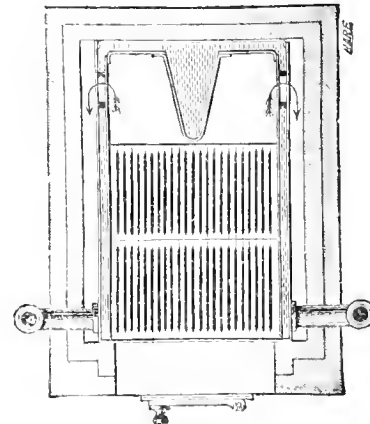
— FRONT ELEVATION —

The longitudinal section gives a view of the fire-box, water space, flues, &c.



— LONGITUDINAL SECTION —

The front elevation shows it set in brickwork, which is necessary for this class of boiler.



SECTIONAL PLAN.

SIZES AND PRICES.

MB 1	3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep	} Calculated to heat 4-in. piping as follows:—	1000 ft.	Price £15 0 0
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MB 3	5 0	by 2 3	by 2 6		2200	32 0 0
MB 4	6 6	by 3 0	by 3 0		4000	60 0 0
MB 5	8 6	by 4 0	by 3 9		7000	85 0 0

TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.

Re HEATING APPARATUS.

Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings. The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather. Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

Yours faithfully, (Signed) G. W. BASHFORD.

AND HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

Editorial communications should be addressed to the "Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed for the Proprietors by Messrs. BRADBURY, AGNEW, & Co. (Limited), Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by ARTHUR GEORGE MARTIN, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 12, 1891. Agent for Manchester—JOHN HEYWOOD.

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NOTICE to ADVERTISERS.—

It is particularly requested that all advertisements intended for Next Week's issue, should reach this Office not later than WEDNESDAY MORNING NEXT.

"Parson's Calendar." New Edition, "The Cottagers' Calendar of Garden Operations," Price 3d., post-free, 3½d. 41, Wellington Street, Strand, London, W.C.

DICTIONARY of GARDENING (Nicholson's), for SALE. First two vols. bound, half-morocco, gilt: the rest in parts. What offers? to—BOOK, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

To Persons Deaf, or with Head Noises. PAIR of NICHOLSON'S EAR-DRUMS, good as new, cheap.—A. L., 12, Salisbury Villas, Seaford Road, N., London.

Myatt's Prolific Kidney Potatoes. W. W. JOHNSON and SON, SEED GROWERS and MERCHANTS, Boston, offer the above in quantity. Price on application.

RASPBERRY CANES.—Norwich Wonder, Carter's Prolific, also Fastoff, strong and well-rooted. ALBERT BATH, Vine Court, Sevenoaks, Kent.

CARTERS' "VADE MECUM FOR 1892" has now been posted to Messrs. CARTERS' Customers. It contains seven elegant coloured illustrations, and will be found a most thorough book of reference by all who desire to cultivate successfully the choicest vegetables and the prettiest flowers.

Price 1s., Post-free, to unknown correspondents. CARTERS', SEED-MEN, by Royal Warrants, to H.M. The Queen and H.R.H. the Prince of Wales, 237 and 238, High Holborn, London, W.C.

B. S. WILLIAMS AND SON'S LILIUM AURATUM, 6s. to 15s. per dozen. LILIUM HARRISII, 6s. to 18s. per dozen. LILIUM LANCIFOLIUM ALBUM, 12s. per dozen. LILIUM LANCIFOLIUM ROSEUM & RUBRUM, 7s. 6d. doz. LILIUM LONGIFLORUM, 4s. 6d. per dozen. Victoria and Paradise Nurseries, Upper Holloway, London, N.

A. G. WATSON, FRUIT and FLOWER SALESMAN, ABERDEEN. CONSIGNMENTS SOLICITED OF POT PLANTS and CUT FLOWERS.

Fruiting Vines in Pots. **H. LANE AND SON** have, as usual, a splendid lot of extra fine, well-ripened Canes, suitable for Forcing, to carry heavy crops next season. The Nurseries, Berkhamsted, Herts.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. McARTHUR, The London Nursery, 4, Maida Vale, London, W.

Prize Cob Filbert Trees. **MR. COOPER, F.R.H.S.**, of Western Elms, Reading (late of Calcot Gardens), is the Largest Grower of PRIZE COB FILBERT TREES for SALE, in the Kingdom. 20,000 good Trees now ready for distribution. Descriptive Price LISTS, &c., on application.

SEAKALE, Extra Strong Forcing, 70s.; very Good, 60s., per 1000. Cash with Order. Apply—MYATT'S HEXTABLE HORTICULTURAL CO., Swanley Junction, Kent.

CHRYSANTHEMUMS.—Proved NOVELTIES in EARLY, JAPANESE, INCURVED, and other Select Varieties. New LISTS free. Gave great satisfaction last year. A. J. A. BRUCE, The Nurseries, Chorlton-cum-Hardy, Manchester.

150,000.—Special Offer of Kentias. **W. ICETON** has a large quantity of the above to offer, very reasonable, at from 47 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well-established, at £30 per 1000. W. ICETON, Putney, S.W.

2000 SEAKALE ROOTS for Forcing, a capital lot specially grown for extra fine produce, 19s. per 100 (cash with order). G. H. COPP, Gardens, Holmest Park, Sherborne.

The Best Present for a Gardener. **VINES and VINE CULTURE.** The most complete and exhaustive Treatise on Grapes and their Culture ever published. New Edition. Price 5s., post-free, 5s. 6d. A. F. BARRON, Royal Horticultural Society, Chiswick.

VINES.—VINES.—VINES. We hold a fine Stock of the above, both Fruiting and Planting Canes. Names and prices sent on application. JOHN PED and SONS, Roupell Park Nurseries, Norwood Road, London, S.E.

W. D. BUNDAY, of Covent Garden Market, and 37, Exeter Street, W.C., having commenced to SELL on COMMISSION, is OPEN to RECEIVE TOMATOS, GRAPES, &c. Good references.

WANTED, RHODODENDRON GRAFTS (Greenhouse varieties). Price, Varieties, and quantity to W. HURST, Carlton House, Clevedon.

WANTED, 6 True HUNGARIAN OAKS. B. COCHRANE, Slade, Bideford, Devon.

SUTTON'S "AMATEUR'S GUIDE IN HORTICULTURE FOR 1892," NOW READY.

SUTTON'S "AMATEUR'S GUIDE IN HORTICULTURE FOR 1892," NOW READY.

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Price 1s., Post-free; Gratis to Customers ordering Goods value 20s. and upwards, from **SUTTON AND SONS**, THE QUEEN'S SEEDSMEN, READING.

Trade Offer of Large Palms. **W. ICETON** has a large Stock of the leading kinds of Decorative PALMS, from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracenas, Bamboos, & Foliage Plants. Lowest Prices quoted on application. W. ICETON, Putney, S.W.

PALMS—For CHRISTMAS—PALMS. Silver's Special Offer for Christmas, Church, and Room Decorations: 12 Latania borbonica (the Fan Palm), beautiful plants, 1½ to 2 feet high, for 10s.; 2 to 2½ feet high, 15s. Package and packing free for Cash with Order. J. W. SILVER, Streatham and Norbury Nurseries, S.W.

FOR SALE.—Large quantity of DEUTZIA GRACILIS, 10s. to 21s. per 100. FLETCHER BROTHERS, Ottershaw Nurseries, Chertsey.

TELEGRAPH CUCUMBER, TELEGRAPH. The Old TRUE Stock of Kollisson. A Prodigious cropper, and unsurpassed for Market Work. Seed, just harvested, 1s. per packet; 25 Seeds, 1s. 6d.; 100 Seeds, 4s. Post free, Cash with Order. Price per ounce on application.—C. A. LE TALL & CO., Seedsmen, &c., The Approach, Charing Cross, W.C.

DOBBIE'S CATALOGUE and COMPETITORS' GUIDE for 1892.—25th Annual Edition, 160 pages, illustrated. Described by one of the greatest authorities in England as "the most useful list published in the trade." Will be ready on January 1, and will be sent gratis to all who apply for it and enclose 3d. to cover postage.—DOBBIE AND CO., Seed Growers and Florists, Rothsay, Scotland.

POT ROSES.—A Bargain; room wanted. Several thousand Niphetos, Catherine Mermet, Perle des Jardins, Isabella Sprunt, Madame Falcot, Safranau, Souvenir d'un Ami, and Marie Van Houtte. Splendid stuff. Established in 9 and 11-inch pots. Inspection invited. Price £5 and £6 per 100. GUIVER BROS. and LAWSON, Durant's Nursery, Pouter's End, Middlesex.

ROSES! ROSES! ROSES!—Plant now 100 strong dwarf, H.P. Roses for 30s. The finest in the Trade. Send for Sample Dozen, 5s. Cash with Order. CATALOGUES, free on application. C. H. GORRINGE, Roselands Nursery, Eastbourne.

CHRYSANTHEMUMS.—Our new Illustrated LIST, now ready, includes every novelty really worth having. J. K. PEARSON and SONS, Chilwell Nurseries, Notts.

10,000 EUONYMUS (Green), bushy, well-grown, 18 inches to 30 inches, 6s. to 15s. per dozen. Less by the 1000. Cash with Order. J. J. CLARK, Goldstone, West Brighton.

J. WEEKS and CO., HORTICULTURAL ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers. King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney. **WM. THOMSON and SONS**, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Chinese and Japanese Curios.

IMPORTANT SALE of a large and valuable consignment, including a fine Japanese iron and inlaid JEWEL BOX, CABINETS, two pairs of Chinese BRONZE CASTINGS of ELEPHANTS with PAGODAS, BRONZES; splendid folding embroidered and other Screens, Cloisonne enamel-on-copper VASES, several choice PANELS, EMBROIDERY, SPILLS, TRAYS, PLATES, and VASES in Satsuma; Kish, Kagis, and other Wares, especially adapted for Christmas and other presents.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 22, at half-past 12 o'clock, by order of the Consignees.

May be viewed between 10 and 4 o'clock the day preceding and on morning of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Tottenham.

Opposite the White Hart Lane Railway Station.

CLEARANCE SALE. TUESDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by Auction, on the Premises, the Clock House, White Hart Lane, Tottenham, on TUESDAY NEXT, December 22, at 1 o'clock precisely, the land having been let for Building Purposes, the erections of 8 GREENHOUSES, 850 feet of HOT-WATER PIPING, 3 BOILERS, SLATE SLABS, TILES, SLATES, GLAZED LIGHTS, PAVING, GARDEN EDGING, SLATES, the CLOCK TURRET and BELL, 2 FOUNTAINS, IRON FENCING, STABLE FITTINGS, GATES, FLOORING, SUMMERHOUSE, large CEDAR TREE, and a number of EVERGREENS, suitable for Christmas decorations.

May be viewed day prior to and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

12,436 LILIES.

Immense importation of 167 Cases of LILIES and IRIS, received direct from Japan, consisting of—

4900	LILIUM AURATUM
2156	.. SPECIOSUM RUBRUM
300	.. ALBUM
2400	.. KRAMERI
2100	.. LONGIFLORUM
200	.. AURATUM VIRGINALE
100	.. RUBRO VITTATUM
180	.. MACRANTHUM
100	.. RUBRUM ORIENTUM

and 16 Cases of JAPANESE IRIS.

The whole for Sale absolutely without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above important consignment of LILIES by AUCTION, at their Rooms, on WEDNESDAY NEXT, December 23, at half-past 11 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday, January 8, 1892.

PRELIMINARY ANNOUNCEMENT.

LINDEN'S

GRANDEST DISCOVERY:

CATTLEYA REX,

JAMES O'BRIEN.

THE MOST FAMOUS ORCHID EVER INTRODUCED.

J. LINDEN, the discoverer and first introducer of nearly all the finest Cattleyas in cultivation, viz., CATTLEYA AUREA, AMELYSTOGLOSSA, GIGAS, ELBORADO, TRIANÆ, WAROCQUEANA (LABIATA AUTUMNALIS), &c., confidently recommends—

CATTLEYA REX

as the
FINEST OF THE GENUS.

CATTLEYA REX FLOWERS IN DECEMBER and JANUARY.

Some amateurs have stated CATTLEYA REX to be a good form of Cattleya aurea, with white sepals and petals, but it is a QUITE NEW TYPE.

CATTLEYA REX is described by JAMES O'BRIEN in the *Gardeners' Chronicle*, December 13, 1890.

Sepals and petals are creamy-white. The labellum is of the richest crimson, of various shades—from the rose hue to the purple tint—veined in a beautiful manner with golden-yellow, all worked in to form a richly-colouring marbling. "It is a Wonderful Piece of Colouring."

Mr. R. JOHNSON, Stand Hall Gardens, Whitefield, Manchester, writes to Messrs. LINDEN:—

"The CATTLEYA REX has flowered with us, and a grand thing it is. We have had some of the principal importers of Orchids here to see it; they think your plate in *Lindena* (English edition, Part I., 1891) a true representation of the flower, but the lip of our flower is FINER than your Plate."

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Messrs. LINDEN, L'Horticulture Internationale, Brussels, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY January 8, 1892, at half-past 12 o'clock, the whole of the above importation, just to hand in capital condition.

The plants have been collected by Messrs. Linden's intrepid collector, M. C. Ellner, with the greatest difficulties, who has searched with hundreds of natives for two years after this grandest Cattleya, and only succeeded in discovering those offered.

He states that "it is impossible to find any more."

A portrait made from a plant flowered in Monsieur Warocque's collection will be on view on the day of Sale.

On view morning of Sale, and Catalogues had.

Wednesday Next.

AZALEA MOLLIS and CAMELLIAS from Belgium, 200 PALMS in variety, and 40 lots of FERNS for Christmas decoration, Standard and Dwarf ROSES, 200 lots of English-grown LILIES, HARDY PLANTS and BULBS from well-known Growers, Standard and Dwarf ROSES, LILY OF THE VALLEY, 200 lots of HYACINTHS, TULIPS, and other DUTCH FLOWER ROOTS, and 300 fine imported Bulbs of LILIUM SCOVIKIANUM, just arrived from the Caucasian Alps.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 23, at half past 11 o'clock.

On view morning of Sale, and Catalogues had.

Wednesday Next.

DOUBLE and SINGLE BEGONIAS.

A splendid strain, embracing the best-named varieties, the whole forming a grand collection, being sold by a successful and ardent Seed Raiser, who is now giving up their cultivation. All are English grown, strong healthy Bulbs.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT December 23, at half-past 11 o'clock.

On view morning of Sale, and Catalogues had.

Friday, January 1, 1892. Preliminary Notice.

IMPORTANT SALE OF ESTABLISHED AND IMPORTED ORCHIDS, from a well-known Private Collection.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, January 1, 1892, at half past 12 o'clock, about 60 or 70 lots of fine ESTABLISHED ORCHIDS, from a private collection, including some grand Cypripediums, amongst them Niobe, Grande, Leanan superbum, Ophanthum superbum, Sobralia xantholeuca, 35 bulbs; Sobralia virginalis, and several large plants of *Cologyne cristata*.

81 lots of DENDROBIUMS, CATTLEYAS, ODONTOGLOSSUMS, and CYPRIPEDIUMS, from another private collection. 100 lots of ESTABLISHED ORCHIDS, another Property, including Cypripedium Morganianum, Harrisonianum superbum, *Cologyne cristata* alba, *Laelia elegans* Bluntii, *Odontoglossum elegans*, *Laelia albidula*, and other valuable species; an importation of 500 *Dendrobium* McCarthiae, 500 *Vanilla spatulata*, 500 *Vanilla Phalenopsis*, received direct for unreserved Sale.

On view morning of Sale, and Catalogues had.

Monday Next.

100,000 FRESH SEEDS OF KENTIA BELMORIANA and FOSTERIANA.

25,000 COCOS WEDDELIANA, and 25,000 ARECA LITESCENS Seeds just received.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 21.

On view morning of Sale, and Catalogues had.

Monday Next.

Five cases of ARAUCARIA EXCELSA, as received; LILIUM AURATUM, from Japan; fine Bulbs of LILIUM LANCI-FOLIUM RUBRUM, from Holland; South African TUBEROSES and AMARYLLIS, 50,000 SPIREA JA-PONICA; 100,000 LILY OF THE VALLEY CROWNS and CLUMPS; LILIUM HARRIS and CANDIDUM; AZALEA MOLLIS, BORDER PLANTS. Fine Collections of Home-grown LILY-CUPS, DAFFODILS and NARCISSUS GLOXINIAS, and a large quantity of DUTCH BULBS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on MONDAY NEXT, December 21, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.

1000 choice named Standard and Dwarf ROSES, 300 Pyramid and Dwarf-framed FRUIT TREES, BORDER PLANTS, HARDY SHRUBS, LILIUM AURATUM from Japan, AZALEA MOLLIS, Collection of STOVE and GREENHOUSE PLANTS, HYACINTHS, TULIPS, CROCUSES, and other Dutch Bulbs, LILY OF THE VALLEY Crowns and Clumps, SPIRÆAS, LILY-CUPS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY NEXT, December 23, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

THOMAS B. JAMES will SELL by AUCTION, at his Rooms, Bull Ring, Birmingham, on TUESDAY NEXT, December 22, at half past 12 o'clock, a grand selection of ORCHIDS in FLOWER for Christmas decoration, also a large and varied consignment of PALMS and other PLANTS from BELGIUM.

Catalogues post-free.
N.B.—Choice CUT BLOOM WANTED, CHRISTMAS WEEK. Good market empties and labels found.

WANTED, a FLORIST BUSINESS, in a thriving provincial town. Terms moderate.
R. W. J., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a NURSERY, for Fruit Growing under Glass. No Stock. Good Dwelling-house, &c. State Rent, &c., to—
ALPHA, Mr. E. Bennett, Harefield Gardens, Uxbridge.

WANTED TO RENT, within easy distance of London, a few GLASSHOUSES for Growing Market Produce. With Cottage preferred.
State lowest terms to H. J. P., Mr. Shaw, 5, Featherstone Buildings, High Holborn, W.C.

ADVERTISER REQUIRES a SMALL NURSERY, immediately, 6 Greenhouses, and 1 Acre of land. Price Low. Must be genuine.—State particulars to R. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, a NURSERY of 2 Acres, and seven Greenhouses, 600 feet run. Apply,
F. H., 5, Gladstone Villas, Fairfield Road, Edmonton.

TO BE LET, 14 miles from London, on the Bath Road, HEATHROW FARM, Harmondsworth, Middlesex, from Michaelmas next; contains 438 acres of good Arable and 44 of Meadow Land. Let as a whole, or divided into three or four Market Gardens. The House and Buildings are 3 miles from West Drayton and Hayes Stations (G. W. R.), also Feltham and Ashford Stations (S. W. R.). No Agents need apply.

For particulars, apply to WALTER C. RICHMOND, Wrotham Park Estate Office, Barnet, Herts.

Tottenham.—To Nurserymen, Florists, and Others.

TO BE LET, close to White Hart Lane Station, about 1a, 2r, 20 p. of LAND, suitable for Glasshouses. For further particulars apply to Mr. ALFRED RICHARDS, Estate Agent, High Road, Tottenham; or, Messrs. DANIEL SMITH, SON and OAKLEY, Land Agents, Surveyors and Auctioneers, 10, Waterloo Place, Pall Mall, S.W. (328.3).

To Florists, Rose Growers, and Others.

TO BE SOLD, as a Going Concern, proprietor retiring from business, about 5 Acres of well-stocked ROSARY GROUND, with two excellent DWELLING-HOUSES thereon; all freehold. Ten miles only from Covent Garden Price, £3200.

Address, by letter, ROSARY, Messrs. Crossley Moir & Co., Advertising Agents, 57A, Coleman Street, E.C.

THE TOWER FURNISHING COMPANY

(Limited), SUPPLY GOODS ON HIRE, direct from the Manufacturers; one, two, or three years' Credit without Security. Purchasers have the choice of 100 Wholesale Houses. Call or write for Prospectus.

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CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 4 to 7 inches.
CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
Double White, 14 to 16 feet, girth 6 to 8 inches.
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Spanish, 12 to 14 feet, girth 4 to 5 inches.
ELMS, English, 10 to 12 feet, girth 3 to 9 inches.
Quernsey, 16 to 18 feet, girth 7 to 9 inches.
LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
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LIQUIDAMBAR, 6 to 10 feet.
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OAK, English, 12 to 14 feet, girth 4 to 5 inches.
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PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
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Purple, 14 to 16 feet, girth 6 to 7 inches.
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Scarlet, 8 to 10 feet.
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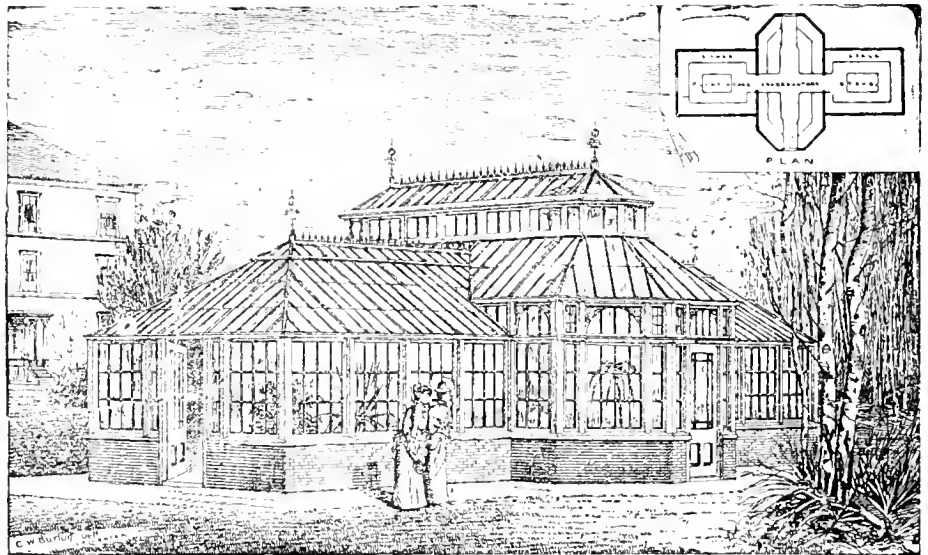
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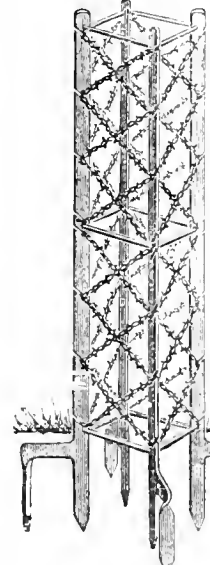
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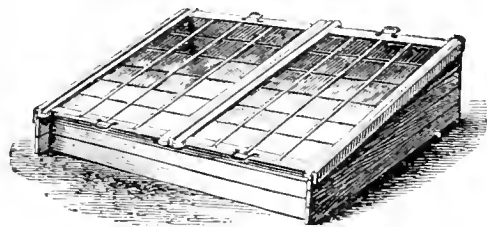
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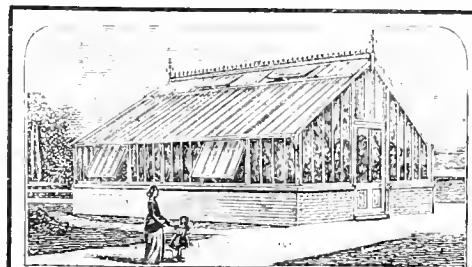
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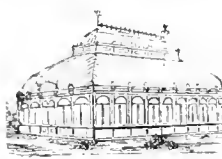


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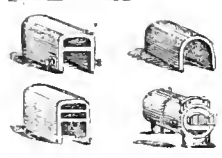
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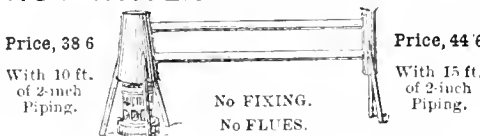
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are even excluded by some from their list of hybrid Teas.

Bunnert Fridolin (T.) is a grand new climbing Rose of distinct colour, being a very pretty and deep carmine-rose, deeper in the centre, and with a lighter base to each petal. This is thoroughly distinct from everything else among Roses.

Henriette de Beauveau (T.), a pure yellow, of splendid habit; sweet-scented, and a continuous and free bloomer.

Kaiserin Friedrich (T.) is a clear saffron-yellow, one of the prettiest "Dijon Teas" ever introduced. There is a grand future before the three Roses named above. This variety resulted from Gloire de Dijon \times l'arle des Jardins, and is thoroughly worthy of its fine parentage.

Caroline d'Arden (H.P.) is by no means an exhibition Rose, but for garden decoration, or for making a grand show where massive banks of cut flowers are required, it is a very useful and lasting Rose. The colour is a bright rosy-pink, which grows much softer as it ages; very sweetly scented, and a showy pot Rose.

Cleopatra (T.), pink, with the edges of the petals tipped and splashed with light rose; a thoroughly distinct and unique flower. This kind has probably the longest buds of any Rose; and, although rather few-petalled, it opens into a Rose of grand form and size.

Souvenir de S. A. Prince, syn. The Queen (T.)—I have grown these side by side ever since they were introduced, and fail to discover the slightest difference. Both resulted from Souvenir d'un Ami, and were singularly sent out in the same year, one being an English, and the other an American novelty. Having every good quality of Souvenir d'un Ami, and being of the purest white colour, this is a Rose that is rapidly becoming very popular.

Climbing Niphetos has had the benefit of a recent discussion in this journal, but I am constrained to give it further notice, as it is such a grand white Rose; in fact, I may call it the grandest of all.

Souvenir de Rosieriste Gounod (H.P.)—A good shaped Rose, very full, free, and of a bright cherry-red shade.

Sir Rowland Hill (H.P.), is a grand Rose during a dull season; sunshine is apt to burn it in much the same manner as we find Pierre Notting and others served during bright weather. This Rose is very correctly described as being an exceedingly dark maroon-coloured Charles Lefebvre.

Duchesse d'Auerstadt (T.), has proved a grand Rose with me this season, and will soon be known as one of our best climbing Teas. Colour, pale yellow in the bud, changing to a pretty nankeen-yellow as it expands; very distinct.

Ernest Metz (T.), all growers of Tea-scented Roses should possess this grand variety. It is of wonderfully robust habit, and carries its flowers on a strong and upright stem well above the foliage. It is also quite new in colour, being a very pleasing rosy-carmine, deeper in the centre of the petals, and brighter still on the reverse side. One of the finest exhibition Tea Roses sent out for a very long time.

L'Écôle (N) is one of the finest Noisette Roses imaginable, quite a rival to the grand William Allen Richardson. Yellow, splashed and tinted with beautiful metallic shades of copper and gold. This is a very free-flowering variety, and one of the best Roses for cutting from.

Madame Hoste (T.) has much of the splendid habit found in Anna Ollivier, and is also very much like a pure yellow specimen of that superb Rose. This is one of the most useful Tea-scented Roses grown, and sure to please all who give it a trial.

Gustave Piganeau (H.P.) is one of the very largest Roses grown, and good in every respect. During the past Rose season this variety gained the silver medal as being the best hybrid Perpetual Rose exhibited by nurserymen at the Crystal Palace exhibition of the National Rose Society. When a new Rose beats such as A. K. Williams, La France, Marie Baumann, Mrs. John Laing, and other tried and standard varieties, there can be little need for any further

praise; and yet I must say it is indeed a grand Rose, and one of the very best of its year (1890). Its colour is a brilliant carmine-lake, while it has every quality of size, substance, and form, and is also a grand habited Rose.

La France of '89 (H.P.) is a perplexingly named Rose, and is certain to get confused with the old La France as regards names, although it is altogether distinct from that variety. There is a strong suspicion of the China Rose about this variety, and I should class it among the H. Chinas if I had the task of allotting it its position among the various sections of Roses. It has long buds, which open into large and brilliant red-coloured flowers. It will make a grand garden Rose; I do not expect it to ever take rank among the grand exhibition kinds.

Earl of Dufferin (H.P.) is one of the best all-round Roses ever sent out. It is an excellent grower, carries a large and full flower of most exquisite shape; in fact, perfect in that respect. Colour a very rich and velvety-crimson, with deeper shadings, while the reverse of the petals is a pretty and clear maroon. The petals reflex upon themselves in a most pleasing manner, and so show up the grand and intense scarlet shades against the deep maroon of the reverse side of its petals—quite first-class.

Mrs. John Laing (H.P.) is hardly at home among new Roses now, but as it was only introduced in 1887, and is the best Rose of recent years, I must include it in the eighteen I name as being worthy of anyone possessing. There is no purpose to which Roses can be put that this grand variety will not adorn. It is one of the Gold Medal Roses, and when one reflects that this honour is only won by the best Rose in the show, there can be little need to say more respecting its merits. One point I may add, however, and that is, there are more plants of this kind sold since its introduction than of any other two new Roses of equal age. This fact speaks for itself.

I am not claiming that the eighteen Roses named are the best, but they are the best of those which I have given a thorough trial to in Sussex, and are certain to do in any soil and locality where the Rose will flourish. A. P.

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM GODSEFFIANUM, *hyb. nat.*

THE number of undoubted natural hybrids in the genus *Odontoglossum* is somewhat considerable, though several of them are still very imperfectly known, and others have received distinctive names to which they are not properly entitled. The present hybrid is a very handsome one, and appeared with Messrs. F. Sander & Co., of St. Albans, last May. It was at once pronounced to be a natural hybrid between *O. triumphans* and *O. Lindleyanum*. It might be described as *O. triumphans* with acuminate segments and the lip of *O. \times Coradinei*, its resemblance to the latter being due to the fact that both are derived from *O. Lindleyanum* on the one side. In *O. \times Coradinei*, however, the other parent is *O. crispum*, while in the present hybrid *O. triumphans* stands in this relation. In almost every respect it is remarkably intermediate in character, and its relation to each parent is seen at a glance. Both parents have a very long column, in which our hybrid also agrees; the wings, however, like the lip, are nearer to *O. Lindleyanum* than to *O. triumphans*, though respecting the sepals and petals just the reverse may be said. A form with narrower segments, but with evidently the same parentage, appeared with Messrs. James Veitch & Sons, of Chelsea, in May, 1888. R. A. Rolfe.

DENDROBIUM PHALÆNOPSIS, LEE'S VARIETY.

OUT of some plants of Messrs. Sanders' importation of *D. Phalænopsis Schröderianum*, there has flowered a richly-coloured form, which is much darker than the original. The front view of the flower is of a glowing purplish-crimson, without a trace

of white being visible, except in a slight marbling on the lower halves of the sepals. The reverse side of the sepals and the middle part of the reverse of the petals and under-side of the labellum are white, which renders the dark colour more striking; and in the same way, the bronzy-purple colour of the base and side lobes of the labellum serves to show up to advantage the bright purplish-crimson front lobe. Up to the present, I know of no *Dendrobie* to equal this one for bright-tinted and well-formed flowers. It flowered with W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester. J. O'B.

THE GLADIOLUS.

ON August 25, at the Drill Hall, I heard a very interesting discussion on the ailments of this fine plant. Great difference of opinion was expressed regarding the supposed disease to which the *Gladiolus* was said to be subject. Some said it was caused by insects, some by fungus, others by too much dampness. A good deal of difference of opinion was also expressed regarding its treatment. Some stated that the *Gladiolus* was benefited by manure at the bottom of the trench, others said too rich a soil kills it; one gentleman stated that his were planted on soil that had not seen any richness for years, and most of his died after growing to a certain stage. The lecturer stated that dampness could hardly be a cause of failure, as on one occasion he lost a number in a very dry season. There appeared to be a suspicion that some disease had got into the *Gladiolus* corms; these corms are nothing but the expanded base of the stem.

Now, along one side of the hall there were about a hundred magnificent spikes of *Gladioli*. Well, to look at these spikes and connect them with diseased corms in any way was out of the question. Then it is still more out of the question to visit Mr. Kelway's nurseries, during the *Gladiolus* season, and see positively thousands of plants. If the *Gladiolus* growers of England can do all this, it seems absurd to fancy that others cannot grow a hundred plants without losing a number of them. There must be some good reason for all these disappointments when the plant is grown on a small scale.

From what I have seen, I find it impossible to believe that there is any disease in the English race of *Gladioli*, any more than I can believe that the disease called small-pox is in the marrow of the British race of people, and for this reason. On one occasion, in a field at Langport, which may have contained a million or more of young *Gladioli*, divided into plots, each ticketed with the name of the variety, this is what I observed: most of the plots in that field were as green as grass; but a few plots, of a different variety, only a few inches from the green ones, were yellowish and sickly. It could scarcely have been the soil or drainage that were at fault; it could scarcely have been a disease spread throughout the race of corms, for they were all descendants from the stock with which Mr. Kelway commenced the raising of this strain. Then what was it that made the difference between a lot that was as green as grass and an adjoining lot that was sickly? It was evident to me that it was the surroundings of that particular variety, which were unable to meet the needs of that constitution. It could not stand the conditions upon which the adjoining varieties thrived.

The Secretary of the Royal Horticultural Society mentioned that his experiment was made with *G. Brechleyensis*, and all died but two, before they flowered. Now, this variety is probably not raised at all in England; certainly, Mr. Kelway does not raise it, and all the *Brechleyensis* corms which are sold in England at 2*d.* and 3*d.* a corm, probably come from France, yet it can be seen at cottagedoors and elsewhere dazzling you with its spikes, and all florists' shops in London have little else but *Brechleyensis* in their windows. Mind you, all the *Brechleyensis* family are descendants, by bulbils, of the one great-ancestral progenitor! Does not all this distinctly say, that it is the surroundings and not

the corms, which are at fault, when the old *Brenchleyensis* fails? Moreover, is it likely that when so many hundreds of varieties are being raised from seed every year, that all would be of an identical constitution? The experience of every horticulturist will distinctly reply, that nothing of the kind happens; and is not the whole of the Darwinian theory based on this very difference of constitution? Is it likely then, that a plant indigenous to South Africa, could stand the British climate in all years, and under all conditions? Is it possible that *Brenchleyensis*, which is so common as to be

surroundings and not the corm that were at fault. Naturally, when the plant begins to decay, all sorts of fungoid growths, and may be insects also, will dispatch it. All vegetable and animal tissues, when decaying, will be so attacked.

I have some suspicion that too much wet will hurt some varieties, especially if the locality be badly drained; and what piece of ground is there that will have every square foot equally well drained? On the other hand, Mr. Kelway will tell you, that in some years he lost acres of *Gladioli* from drought, which proves that too much dryness will injure them.

another. Moreover, damp and drought, and insects and fungi are not the only possible causes of ailment in plants. We never suspect that electrical changes can have anything to do with health, yet every day the opinion is becoming strengthened that electricity has to do with everything, and more especially wherever what we call life is concerned.

Whatever the cause of failures in the hands of certain individuals may have been, the great fact remains, that Mr. Kelway every year succeeds in growing immense numbers of *Gladioli* without losing anything but a very small percentage. After the first growth, the plant depends on the roots, and not on the corm, for sustenance, and if these perish from whatever cause, the plant must suffer. The new corm, being a part of the plant, is subject to attacks of fungi when decay sets in. Further light is needed on the subject. *E. B.*



FIG. 105.—HABENARIA CARNEA: FLOWERS, WHITE AND PINK.

sold at such a low figure, could be so rotted with disease as to fare, from inherent causes, in the way the secretary described? Is it possible that if there were widespread disease in the corms, that Mr. Kelway could grow such fine *Gladioli* by the tens of thousands? Why, the whole thing is unbelievable.

Mr. Kelway, if I remember rightly, told me that on one occasion, as an experiment, he took up some corms, the plants of which were turning yellow, and dried them. Next year these same supposed diseased corms produced healthy plants! If there be no mistake about this point, it would prove that the corms were sound, and that the roots, from some cause yet unexplained, had perished. It was the

In its own country this corm is never lifted, and yet it grows up again every year; and there are many people who will say that they never lifted their *Gladioli* (possibly *Brenchleyensis*), and they came up regularly every year at the proper season.

In order that the *Gladiolus* may thrive in such a changeable climate as this, in every soil, and in every situation, and under all circumstances, it requires to have an iron constitution, and in an exceptionally wet season, such as this, it is not surprising that so many, even of the hardier sorts, failed. In some places the *Gladioli* may have been killed by one cause, and by a different cause in other places. One variety may perish in one place, and thrive in

HABENARIA CARNEA.

This is a new and attractive species, which has been in flower at Kew recently. Although bearing the name of *carnea*, the only portion of the flower which seemed to justify this was the hooded or helmet-like upper segment, which was of a soft pink colour, the other portions being almost pure white. Each bloom is furnished with a pale brown spur, about 2½ to 3 inches long, at the base of the large three-lobed lip. The leaves are small, dark green, paler in the centre and at the edges, and heavily covered with small white spaces, which give them a charming effect. The plant is a native of Singapore. *J. W.*

FOSSIL RESINS FOR VARNISH-MAKING.

THE connection of varnish-making with gardening pursuits is at first sight not apparent, except that varnish as a manufactured article is perhaps as much used by gardeners as by other people. The basis of all varnishes, however, is resin of some kind or other, and as resins are vegetable products, there is another reason why the subject of varnish-making may be referred to in the pages of the *Gardeners' Chronicle*. The manufacture of varnish is a science but little known or understood by those not concerned in the mysteries of the industry, and therefore the appearance of a work devoted to the subject may be fitly alluded to here. Under the title of *A Few Notes on Varnishes and Fossil Resins*,* Mr. R. Ingham Clark has succeeded in producing not only an accurate record of the resins used in varnish-making, but also a readable book, treating on the early origin of varnish, its preparation, and use on ancient pictures; its demand, growth, and commercial extension, &c. On these subjects, the author remarks as follows:—“It is difficult to trace the period when varnish first became known to commerce, although it is of necessity allied to the art of painting. The manufacture, as now understood in Europe, is of comparatively modern date; but a crude knowledge of the article must have been existent at a very early period, for so-called varnishes have been taken from the wrappings of Egyptian mummies, though these were more probably prepared resins or natural balsams. . . . Pliny states that Apelles invented a varnish, the composition of which was known only to himself, and it is also certain that the varnishes which had been made for many centuries by the inhabitants of the eastern parts of Asia were in part known to and employed by the Romans. . . . The works of Apelles, and of those who preceded him, disappeared with the period which saw them produced, and there is no monument in existence to enable us to solve the question as to whether the preservation of the colouring matter employed by these early painters was attributable to varnish or any substance of a similar nature. . . . It may readily be believed that the discovery of varnish was the fruit of repeated

* *A few Notes on Varnishes and Fossil Resins.* By R. Ingham Clark, F.L.S., F.R.G.S., &c. Illustrated by James West. (Charles Letts & Co., 3, Royal Exchange, London.)

trials; and though those who made it had continually in their hands the essential materials, yet there was still a motive wanting—that of sustained demand, which was, however, soon created among peaceable and industrious nations by a taste for luxury, and extended by commercial intercourse."

Mr. Clark of course refers to the art of varnishing or lacquering in Japan, and points to it as being of very ancient origin, though it is considered doubtful whether the art existed previous to the time of the Emperor Jimmu, n.c. 581 to 560. Plantations of *Rhus vernicifera*, however, were established during the reign of the Emperor Mommu, A.D. 701 to 704, when an edict was issued that each farmer employing six hands should plant eighty lacquer trees on his grounds; one employing four hands, seventy, and so on; and also that the annual taxes should be paid in lacquer. This law led to the founding of plantations in every village. The information regarding Japanese lacquer and the references to detailed works on the subject, will be valuable now that fresh interest on the subject has been awakened by Professor Rein's experiments in the trees planted at Frankfort. Mr. Clark next treats rather fully of the much-vexed question of the composition of the varnish used by the old violin makers, and concludes the first part of his book with the statement that of fossil and semi-fossil resins used in varnish-making "the total annual imports into England, a part of which is re-exported, amount to about 4,000 tons, two thirds being represented by the Kauri gum of New Zealand; about 400 tons come from our west African colony of Sierra Leone; 400 or 500 tons from the Philippine and adjacent Islands; and the remainder from various parts of the world, principally that portion of Africa bordering on the torrid zone.

In the second part of the book we find much information on these fossil resins, or gums as they are always known in commerce. A good deal of attention has been paid to this part of the work, and much information carefully brought together, therefore the very few mistakes that occur are the more to be regretted. Thus on p. 36, under the figure of *Hymenæa Courbarii*, the pod is described as enlarged about one-fifth natural size when it should have been reduced. Again on p. 67, *Pistachia* is printed for *Pistacia*, and *Perebinthææ* for *Terebinthacææ*. These are simply misprints, but in a book so well got up, and so extremely well printed, it is a pity for it to be marred even by these slight faults.

NOTES FROM HATFIELD.

HATFIELD is celebrated for its connection with past history and its antiquity, but it is not my intention to notice that part of the subject now. A special supplement of the *Gardeners' Chronicle* appeared on May 9, 1874, which dealt with this matter at some length; still I found many things worthy of notice during a recent visit. The chief feature at the time of my visit (September 23) was the crop of hardy fruit. Abundance of Apples and Pears was to be seen in most gardens this year, but at Hatfield the crops were unprecedented.

The trees in the garden are mostly in the form of huge pyramids or bushes, many of them 16 to 20 feet high, and are composed of a varying number of long branches, like natural cordons—from twelve to twenty on most of the trees; and herein lays the secret of success. When Mr. Norman took charge of the gardens, these trees were about 3 or 4 feet in height, and had been regularly cut back to form round-headed bushes, looking anything but healthy and prosperous, and giving but little fruit. They were allowed to grow away until they reached the size they are now. The growths were kept thinned out, so that all parts of the trees get abundance of light and air, and now they are in perfect health, and most prolific. Some of the best croppers among the Apples this year were Dutch Codlin, Mère de Ménage, Lane's Prince, Albert, Bismarck, Nelson's Codlin, Lord Suffield, Red Astrachan, Hoary Morning, Yorkshire Beauty, among the pyramids; and

Caldwell or Rymer, Sturmer Pippin, Adam's Pearmain, Dutch Mignonne, Mannington's Pearmain, Peasgood's Nonsuch, Lady Henniker, Ribston Pippin, very healthy on standard; Round Winter Nonsuch, Belle Dubois, and Cox's Orange Pippin, on espaliers and standards.

Pears also were borne in large quantities. The best croppers as pyramids were Beurré Clairgeau, Clapp's Favourite, Louise Bonne of Jersey, Knight's Monarch, Doyenné du Comice, Emile d'Heyst, and Crassane, the latter being conspicuous for its heavy crops all over the garden. Among espaliers and trees on walls, the best were Marie Louise, Fondante d'Automne, Van Mon's Leon le Clerc, Josephine de Malines, Passe Colmar, and Comte de Lamy; the latter variety was bearing a fine crop, but the fruit had been thinned out, as had also several of the other varieties of Pears, and smaller Apples, such as Dutch Mignonne, Cox's Orange Pippin, &c. Such varieties as these generally crop too heavily in a good season, and the fruits do not swell to a large size, but timely thinning evidently makes a vast difference.

Peaches and Nectarines on the walls had also some good fruit on them, and a large quantity had been gathered. The walls are built of concrete, and wired; thus, the trees get very little benefit from absorbed sun-heat, as they would do on a brick wall. The branches of the trees are kept well thinned out, especially the shoots of the current year; none are allowed to grow unless they are required, and thus all of them get a chance of ripening. Tomatos were well grown outdoors, the variety being a selection from Ham Green Favourite.

Plants for decorative purposes are grown in very large quantities under glass. All looked remarkably clean and healthy, as did also a fine lot of *Cœlogyne cristata* and *Cypripedium insigne*, and a miscellaneous collection of *Dendrobiums*, &c. Plants of *Saccolabium Blumei* growing in baskets hung up near the glass in a large plant-stove were particularly noticeable. One large house full of *Adiantum canescens* with *Eulalia japonica variegata* dotted amongst it formed a very pretty sight. In the long conservatory, *Salvia coccinea* was flowering well, and is well worth attention for early autumn work for its distinct appearance. *Passiflora Constance Elliott*, *Solanum jasminoides*, *Brugmansia sanguinea*, *Cassia corymbosa*, were also full of flower. A large quantity of healthy *Camellias* were well with flower-buds, and Mr. Norman attributes his success to affording all the water they require overhead so as to thoroughly wash the plants. In a stove adjoining, I also noticed a healthy lot of *Eucharis amazonica*, some plants being in pots, others planted as an edging to the path.

Chrysanthemums are grown in great quantities for producing a large supply of flowers for decorative purposes. A fine batch of the new *Marguerite Carnations* from seed, had been lifted and potted for early winter use, for which purpose it seems admirably adapted, the plants being full of flower-buds. Among many other things, *Canna Madame Crozy* deserves especial mention for its large flowers of a showy but refined appearance, also a fine lot of *Nerines* just commencing to flower.

In the fruit-houses some fine bunches of *Madresfield Court*, *Alicante*, *Lady Downe's*, *Raisin de Calabria*, &c., were hanging. *Peachea* had borne very heavy crops, and looked promising for another season. The demand for Strawberries in early spring is enormous, and many thousand plants are forced annually. *Vicomtesse Héricart de Thury*, *Sir C. Napier*, *Sir J. Paxton*, and *Noble* are the kinds principally grown; *Sir C. Napier* produces extra fine fruit here in pots, but is almost a failure in the open quarters.

Vegetables require to be grown in very large quantities, especially Brussels Sprouts, Celery, Cabbages, &c., and some fine braves of them were noticeable, Veitch's Exhibition and Nowthaw Prize are the varieties of Brussels Sprouts most in favour. Large quantities of Lettuce, Endive, Parsley, &c., were also doing well, and I especially noticed a fine

row of *Cardoons*. Flower-gardening is also carried out on an elaborate scale at Hatfield, early-flowering *Chrysanthemums* being used extensively for an autumn effect. *W. H. Divers, Ketton Hall, Stamford.*

ORCHID NOTES AND GLEANINGS.

LÆLIA AUTUMNALIS FROM Highbury.

SPECIMENS exhibiting the wide range of variation in these, come from the collection of the Right Hon. Joseph Chamberlain, M.P., Highbury, Birmingham. The two extremes are represented by a large narrow-petalled form, and a stout highly-coloured variety, broad in all its parts. In the former, the segments are over 2 inches in length, and not more than half an inch in width. The whole of the lip but the extreme half of the front lobe is pure white, except a few brown dots at the base, and a pale primrose tinge on the front of the keels running down its centre. The column, also, is white, with a rose-coloured tip. The other, the darker and broader flower, exhibits but little white, the base of the lip and keels being yellow, profusely and showily streaked with dark red. Were it not for the known and endless variation in this species, these two would well merit varietal names.

CATTLEYA LABIATA, Lindl.

Two varieties of Messrs. F. Sander & Co.'s importation of autumn-flowering *C. labiata* are now in flower at St. Albans, which exhibit a marked improvement on any other forms of autumn-flowering *labiata* in having a greater breadth of petal, and in one instance a rich, violet-tinted crimson colour in the labellum different from anything observed in the old forms of this species. *J. O'B.*

BIRDS OF THE COMMONS AND WOODLANDS.

UNDER the above heading, we may include nearly all the various birds whose songs help to make English country life so enjoyable. These birds are nearly all small; most of them are dull in colour, and harmonise so closely with their surroundings, that it is extremely hard to detect their presence but for their voices. They are rightly called "warblers," for their singing is by far the most noticeable point about them. Birds of this class are almost entirely "summer visitors," arriving here in spring to build their nests and rear their young, leaving us again in autumn for a warmer climate.

THE WARBLERS.

To this family of warblers belong the two most accomplished songsters heard in England—the nightingale and the blackcap. The former has the bigger reputation, still it always seems to me (although it is high treason to say so), that of the two, the blackcap is the greater artist. The nightingale gives forth its utterances with such an agony of fervour, that for the time—especially if you are a lady—you are quite carried away. Still, his singing is hardly of the highest style; it is rather too sensational and operatic. The blackcap, on the other hand, always keeps the most perfect control over his voice; the notes are deliciously rich, and you do not bear any effort. The two birds are very different in appearance—the one is reddish-brown above and white beneath, while the other is of a dark grey hue, with a neat little black crown on the top of his head, and greyish-white on the under parts. The nightingale frequents the thickets, whereas the blackcap is perhaps most at home in fruit-gardens, where the young birds, who, unlike their mother, have chocolate-coloured crowns instead of black, may constantly be seen in the Raspberry bushes.

The garden warbler is another fine singer. This bird arrives in England rather later than others of its class, generally making its appearance in May. And in addition to the three warblers already mentioned, we are visited every spring by two white-

throats—greater and lesser; and by three little green birds, closely resembling each other, called the wood-wren, willow-wren, and chiff-chaff, all of which may fairly be called birds of the woodlands. The two whitethroats have both white throats, but their colouring is very different in other respects, the larger bird having a reddish-brown back, while the corresponding portion of the lesser whitethroat is dark brownish-grey. The former has rather a sweet song, which it gives forth with great energy usually from the top of a thicket, while the song of the latter is rather loud and monotonous. The wood-wren, willow-wren, and chiff-chaff, as we have said, bear a very close resemblance to one another. They are all of them green above and light underneath. The wood-wren is the largest and the least common, being essentially a bird of the wooded districts, and it prefers Beeches to other trees, consequently it is more local than the other two. All three birds build domed nests; but that of the wood-wren may always be distinguished by the fact that it is never lined with feathers. The willow-wren is a very common species, and has a bright little song in a descending scale, which it repeats over and over again; while the chiff-chaff can only utter two notes which it constantly repeats, usually from the top of some high tree. You can distinguish the willow-wren from its relatives by its yellow under-parts; and the chiff-chaff, besides being the smallest of the three species, is the first to arrive in England, and it has moreover as a rule dark legs. The colours of the legs of birds are, however, a most unreliable test for identification, as they vary very much in different individuals of the same species. Only a few days ago, I had in my hand a chiff-chaff which had been stunned by flying against a window-pane; its legs, instead of being dark brown, were of a bluish slate-grey.

THE GOLDEN-CRESTED WREN.

In localities where Fir woods abound, you will sometimes come upon a flock of minute birds uttering a curious little call, which is more of a squeak than a note; these are golden-crested wrens—the smallest British species. This tiny bird only measures 3½ inches from the tip of its beak to the end of its tail, and yet enormous flocks frequently arrive in England in autumn on the east coast. How these fragile weak little creatures perform a journey across the North Sea is truly wonderful. It is certainly a great strain upon them; for they sometimes alight in swarms on fishing-boats in order to rest, and those which gain the shore are greatly exhausted. It is impossible to estimate the loss of life which such a crossing must cause, but this only makes us wonder all the more at the strength of the hereditary instinct which compels them to start on the journey. In colour the golden-crested wren is green, with the crown of the head orange in the male bird, and lemon-yellow in the female. The nest is a most exquisitely-made hammock of moss.

There are two birds of the warbling class which are essentially birds of commons rather than woodlands: one is a resident species, the Dartford warbler, and the other a summer visitor, called the grasshopper warbler. The former owes its name to the fact that it was first discovered, about 120 years ago, near Dartford; it has, however, since been found in most of the southern counties of England. In appearance it somewhat resembles the wren, but it has a long fan-shaped tail, which it frequently opens while fitting about furze bushes, its favourite haunt. This bird suffered terribly in some places during the cold winter of 1880 to 1881, and no doubt the frost at the beginning of the present year caused a great diminution in its numbers. *A. H. Macpherson.*
(To be continued.)

CLUBBING IN WALLFLOWERS.

SOME short time since, some seedling Wallflowers were submitted to the Scientific Committee of the Royal Horticultural Society on account of the curiously swollen condition of their roots (see p. 621).

Surmising that the appearances were due to a slime-fungus, such as that which causes clubbing in Cabbages, the specimens were sent to Mr. Arthur Lister, who has made a special study of the Myxomycetes, and whose report is printed at p. 621. Mr. Lister has also furnished us with a drawing representing the swollen condition of the root, together with the enlarged cells containing the spores. From this drawing it would seem that the fungus (if fungus it be) is closely allied to the Cabbage root-fungus, but differs



FIG. 108.—CLUBBING IN WALLFLOWER. (SEE TEXT.)

somewhat in the size of the spores. The following references illustrate the cut:—

- A. Young plant of *Cheiranthus Cheiri*, with "clubbed root."
- B. Transverse section of the clubbed root, taken through \times - \times mag. 18 diam.
 - c. Cortex.
 - vc. Vascular cylinder.
 - p. Pith.
 - MR. Medullary rays.
 - v. Reticulated vessels scattered through the inner mass of enlarged parenchyma.
 - PL. Enlarged cells, filled with spores of *Plasmodiophora*.
- C. Transverse section of central part of swollen root, showing two large cells (PL) filled with spores of *Plasmodiophora*; these are here arranged radially, while in the cortex they are arranged tangentially to the main axis of the host plant. Mag. 250 diam.
- PL. Two large cells emptied of *Plasmodiophora* spores.
- D. Three isolated spores of *Plasmodiophora*. Mag. 250, diam.

PYRAMID APPLE AND PEAR-GROWING.

SEEING that no one has replied to the request of "B. B." (p. 316) on the above subject, I venture to pen a few lines, with the hope that the information desired may be forthcoming in this article. What are often termed pyramid trees of both kinds would be more rightly named bushes; indeed, but few of the former are now-a-days to be seen in new plantations as compared with the latter, and for aught I know, bushes are the best for the majority of gardens. Granted, if stiff ornamental fruit trees are wanted for appearance as the chief point in their favour, then grow correctly-grown pyramids. But, I take it, the bulk of owners prefer trees ornamented with fruit, rather than forms of the individual tree only. Pyramids of either Apples or Pears differ only from bushes in the manner in which pruning and training are carried out. In pyramids the leading shoot is allowed to advance but slowly to preserve the shape, side-shoots below it are restricted in the same manner; while in bushes more freedom is allowed, and to the benefit of the fruit crop too. I would not advise that pyramid trees of either fruit be planted in preference to bushes, for the reasons stated, especially in the case of Apples, for more fruit is obtained from trees which are allowed an extended growth than from that which is restricted, but in the case of Pears it differs somewhat; fruit on closely-pruned trees is obtained much more freely than Apples.

There are two other advantages in growing bushes, as compared with correct pyramids, viz., they are cheaper to begin with, and require less labour in training—two points worthy of consideration. Apples will succeed in soil where Pears will hardly exist, certainly not with advantage; and before planting pyramids, or even bushes, some consideration ought to be given to their future progress. It is more a question of soil than aught else in the culture of both Apples and Pears. Some sorts of the former succeed admirably here, while others will barely exist; while in the case of Pears, but few varieties will give crops at all in the open, while with the advantage of a wall, they succeed fairly well. It is then more a matter of selection of varieties for the kind of soil in which they are to be planted; but where the soil is heavy, cold, and retentive, it seems almost useless to plant Pears at all in the open. For instance, in Apples, Warner's King never fails, while Cellini and Wellington do quite the reverse. With Pears, Marie Louise, on the wall, is always good, while in the open the trees will not grow, let alone fruit. I might go on giving instances of varieties, but these will suffice to show the desirability of making enquiries on the spot before planting largely of either.

To obtain success with either of these fruits, the ground must be thoroughly prepared before planting. In the case of soil which is sandy, deep digging is all that is necessary; but in heavy cold soils, clay or gravel, the stations must be trenched fully 2 feet deep, and 4 feet square on the surface. The top spit must be kept by itself, to be returned to the surface of the hole in which the trees are to grow. The subsoil ought to be broken up thoroughly, and left there. Where the soil is stony, draining will not be necessary; but in the case of clay, provision ought to be made for getting rid of superfluous moisture. A cold wet base for the roots is more productive of canker than anything else. Deep planting is one of the worst evils to be avoided, therefore the stations should be prepared early enough, so that the soil will have time to settle down before planting takes place. In heavy soil the trees should stand on the surface, and be mounded up enough to cover the roots at that time, because in a couple of years it will be found that the soil has settled down so much, that the trees then planted on a mound will only be level with the surface-soil. Trees that are about two or three years from the maiden are best to plant, those which are much older do not start away so freely the first year as do younger ones,

especially when they have to travel some distance. No time should be lost in getting them into their permanent position after November 1. Any bruised or broken roots should be neatly pruned to a sound part, as from clean cuts fibrous roots are freely made the first year. In the case of heavy soil, some compost ought to be provided for covering the roots to give them a start, such as old potting soil, wood-ashes, and decayed vegetable refuse; but in sandy soil it is not necessary, although no harm will be done by adding it.

Manure should not be mixed with the soil at planting time, it has a tendency to create a soft, sappy growth, and which, in a cold heavy soil, invites canker wholesale; the roots are encouraged downwards after the manure instead of the reverse. A dry day if possible should be chosen for the planting, but if no choice is to be had, and the soil is wet, do not make it firm about the roots; rather wait for a time until it dries a bit, but in light soil this is not so imperative.

If there is any fear of winds moving the newly-planted trees, they must be staked at once; nothing is more detrimental to newly-planted trees of any sort than to have their roots loosened by wind and wet. A mulching of partly decomposed horse manure should be laid on 3 inches thick, covering the whole 4-foot space; frost will not injure the roots of established trees, but those that are newly planted are under different conditions.

Pruning newly-planted trees is a subject which does not meet with a quite unanimous opinion as to the proper method to adopt. I am in favour of cutting hard back the first year of any long shoots; my idea is, that the base eyes do not break freely if the length of the shoot is more than 6 inches, and if the eyes remain dormant one year, they seldom if ever grow another. In this way bare stems are often seen in fruit trees. In the case of bushes, the growth made the next year may be allowed more extension, which will induce fruitfulness, simply removing the point of shoots 18 inches or so long, at the same time training the shoots outward with a view of keeping the centre of the tree open to admit light and air. Any weakly, cross-growing shoots are better cut out altogether, giving more space to those retained. Pyramids must be pruned more severely every year to maintain a rigid outline. The leader must not be allowed to extend too fast, or gaps will be formed in the tree, which are bad to fill up afterwards. More attention must be paid to the shape of the tree than to fruitfulness, which is more easily obtained by extension than by restriction of the growth. Summer pinching of the shoots is desirable, as it induces a more correct growth, and by the removal of useless shoots, which would be cut out at the winter pruning, allows more air and light to visit the branches and assists in forming fruit spurs. Where branch space is not limited, as in the case of bush-grown trees, root-pruning to induce fruitfulness in vigorous-growing trees may be avoided. Hard-pruning of shoots which are strong only induces still stronger growths the next year if the roots are not interfered with, but by allowing them to extend such vigorous growths are checked, and end in fruitfulness, even though the roots receive no check; although it is advisable to sever strong fibreless roots 2 feet from the stem all round. In the case of pyramidal growth, root-pruning must be practised to induce fruit at all to be borne; indeed, replanting strong-growing trees is the best plan to follow to effect a speedy cure.

Although mulching with manure of newly-planted fruit trees is absolutely necessary to give the best results, it becomes hurtful if not carried out with some consideration and tact. To lay on a 3-inch thickness in November, leave it there until it has thoroughly rotted in, say May, and then replace it with as much more, is not mulching with common sense. What is mulching applied for, and what are its attendant consequences when wrongly carried out? In the first place, manure is laid on the surface, and termed mulching, to prevent the frost injuring inactive roots, and to maintain the soil in a moist state during dry weather,

so that the roots are induced to remain near to the surface, where it is moist, owing to the presence of the manure, instead of their going down deeply after the moisture they need, and will search for it denied them on or near to the surface. This aspect of the case is all right, but when the manure is left on entirely, so that the roots are kept in one cold state all the spring and summer through the absence of sun, then mulching does positive harm. The proper plan to follow, is to remove the manure when the sun gains power, say in May, if only for a couple of weeks, returning it if there is danger of the roots—which ought to be near the surface, especially in newly-planted trees—becoming dry or parched. I am an advocate of suiting the circumstances of the case to the influence of the weather; if it be wet, cold and sunless, remove the mulching, replacing it upon a change in the atmosphere. *E. Molyneux.*

FORESTRY.

COVERT PLANTS.

(Continued from p. 700.)

THE long-leaved *Gaultheria* (*G. acuminata*) is indigenous to South America, and is found to be hardy in most places of Great Britain and Ireland. Its leaves are of a larger size than *G. Shallon*, and it is best adapted for planting in woods under the shade of trees, where it makes excellent covert. It is, however, not confined to such places, as I find it answers very well in mixed shrubberies, more especially in places where the soil is of a soft open texture, rich in organic matter. It produces its pretty white flowers in early summer, and fruit in autumn, which make a fine contrast with its green, glossy foliage. The best time to plant these shrubs in dry ground and rocky places, is autumn or early winter, and it is likewise an advantage to have the plants prepared in a home nursery, so that they can be lifted and planted where they are to remain on the same day. *J. B. Webster.*

ALASKAN FORESTS.

THE whole of the south-eastern portion of Alaska lying westerly of the coast-range of mountains is a dense forest.

One of the peculiarities of Alaska forest scenery that first impresses the observer is the lack of variety which it presents. The whole forest area is composed of less than half-a-dozen species, and these for the most part are evergreen trees. The Hemlock, white Spruce, and *Arbor-vitæ* are the most prevalent—so prevalent that few would perceive there were anything else. The Hemlock Spruce, to the common eye, would appear to be the same as our eastern species, *Abies canadensis*, but the botanist notices a distinction, and names it *Abies Mertensiana*.

English botanists endeavoured to honour their Prince Albert in the same way, and in some of the catalogues of Pacific trees it figures as *Abies Albertiana*. The white Spruce, though resembling the Eastern, is also distinct, and called *Abies Sitkensis*, because the Russian botanist who first named it found the trees in the vicinity of the Russian settlement, Sitka. The *Arbor-vitæ* is there called Cedar, and is again different from the *Arbor-vitæ* of our Eastern States (*T. occidentalis*), by its paler green tint, and by the enormous size to which it grows. On this account, botanists have named it *Thuja gigantea* (Lobbi of English gardens). The Douglas Spruce is found here and there, as is also the twisted Pine, *Pinus contorta*. There are said to be others here and there which I did not see. In a general way, we may say that the three first named make up the forests of Alaska. Among the deciduous trees, the Oregon Birch (*Betula oregona*) and Alder (*Alnus viridis*) make fine trees, and often form dense woods on river bottoms, or along the wake of receding glaciers. Then there are a few strong-growing Willows, and these together make up practically the arborescent growth of Alaska. Now and then on the high ridges

would be a solitary specimen of the Canoe Birch, Red Maple, and Elder-leaved Mountain Ash, indicating that east of the mountain ridge they might be found in quantity; and among the driftwood along streams, trunks of *Populus canadensis*, one of the Cottonwoods, would occasionally be seen, so that somewhere that may be found in some numbers.

Unfortunately, in the matter of timber, the Alaska forests, as far as I saw them, are of little value. The trees grow so thickly together that, so far as the soil is concerned, they starve one another, and good logs would be very rare indeed. One can scarcely imagine from usual forest experience how closely these trees are packed together. I and my wife undertook to walk 4 miles by an Indian trail through one of those woods to a point where we might head off our vessel. So thick was the mass of vegetation on each side of us, the path being wide enough for one of us at a time to travel single file only, that we could not have seen a bear 10 feet away from us, and only for the rifle carried by the good Presbyterian missionary who piloted us, we would not have trusted ourselves amidst the jungle of foliage which made up these Alaskan forests.

One reason for the dense covering of the land with trees is the favourable conditions for seed germination and the apparent scarcity of seed-eating creatures. The warm temperature given off by the sea of Japan, which comes up south-westerly to break against the Alaska shores, meets the snowy-cold of the mountain peaks, condensing the moisture so that the surface of the ground—or, indeed, anything else—is never absolutely dry, and every seed that falls to the earth has a chance to sprout and grow.

TOTEMS.

In the old Indian village were white Spruces, 20 feet high, growing out of the top of totem poles. These poles are themselves 30 or 40 feet high, and seem to have been selected from the largest trees. They are stripped of their bark, and have carved on them series of likenesses of creatures, real and imaginary, representing the genealogical descent of members of the tribe. It was a curious sight to see the white Spruces, like huge Christmas trees, growing from the flat tops of these poles. In some cases the roots from these living trees had split the poles in their descent to the earth, into which the roots had, in some cases, so thoroughly penetrated, that, should the poles finally rot away, the trees would probably on these stumps of roots continue to grow on as trees high up in the atmosphere. Nothing but a climate continually saturated with moisture would permit of a seed sprouting, and the tree continuing to grow out of the top of a pole in this manner.

THE AWFUL SILENCE.

The woods themselves seem to have the quiet of the grave. Ravens, which for religious reasons the natives here as in most countries protect, may once in a while startle you by a croak so near you as for the moment to make you believe it is the whoop of a wild Indian with scalping proclivities; or you possibly may see a young bear standing on its hind legs, grasping for steadiness a small tree with one of its paws, while it uses the other to gather in a whole armful of branches of wild Gooseberries, from which it plucks with its mouth, somewhat delicately, the fruit. Possibly, also, here and there a snake suddenly crossing your path may, in your ignorance of its character, lead to a sudden "Oa, my!" and a little extra perspiration on your travels. Beyond this, there seems little life to interfere with forest seeds or any other thing.

These favourable conditions favour underbrush also. The *Shallon* grows 3 or 4 feet here, and the evergreen *Berberis* or *Mahonia*, which we have brought into our gardens from that region, and grows a couple of feet or so when transplanted, is 3 or 4 feet there. Then there is a form of our Devil's Club, *Aralia spinosa*—which certainly beats the most Satanish specimens of its eastern relative, and which some botanist has, with excellent discrimination, named *Aralia horrida*—with Raspberries, called Salmon Berries, and prickly Gooseberries of many species, and we have a thicket of vegetation forming

the forest of Alaska, absolutely more impenetrable than anything we can experience in eastern woods.

Still there are cases when from some cause the trees are not overcrowded, and then it is wonderful what magnificent specimens, considering the high northern latitudes, the trees will make. I measured trees of the white Spruce, near Kaigan, that were over 20 feet in circumference, while the *Arbor-vitæ* averaged the size that our Hemlocks would generally do in a Hemlock grove.

HOW DUG OUTS ARE MADE.

The favourable nature of the climate for forest growth may be further illustrated by the enormous size which Birches and Alders reach in Alaska. The *Alnus viridis*, which on the high mountains of North Carolina I have found as mere bushes, grow in Alaska as large as our ordinary forest tree. Wandering through the woods in Chilcat Harbour, I came on what might be termed an Indian boat-yard. They were making "dug-outs" of these Alder trunks. It was customary for our steamer on entering a "port" to fire a cannon, so that the Indians might hear at a distance, and come to the wharf to trade. While they had left the "boat-yard" for the wharf I was deprived of the chance to see them at their boat-building work. It was apparent, however, that they hacked out the log until it was no more than half an inch thick in any part, then filled it with water. Near by they heated stones red hot, which were dropped into the water until it became highly heated and softened the wood. Then stretchers, such as the gables our butchers use for expanding hogs and sheep, were used to spread apart the upper portion of the boat, which in that way was brought to a beautiful form, which a naval architect would consider well adapted to good sailing character, and the pretty dug-out canoe was completed. I had never before thought the Alder good for anything but to make fine gunpowder.

In like manner my estimation of the value of the *Thuja gigantea* for timber was increased by my Alaska experience. In Metlakatla, a town on the borders of Alaska, founded by Indians civilised by the missionary Duncan, a large and beautiful church had been built out of this—their so-called "Cedar-wood." The perfume given to the whole building by this wood was fully equal to the incense of Roman Catholic churches. It is said that, in some countries, Sandal wood, so highly esteemed for making perfumed caskets, is nearly exhausted. When Sandal-wood timber becomes something of the past, Alaska can furnish a good substitute in her gigantic *Arbor-vitæ* or "Cedar."

FLOWERS OF THE FOREST.

The wild flowers of the forest, or, as would be said, the forest flora, cannot be numerous or striking when we consider the density of the arborescent growth, as described. If we go to the woods at all we have to look for the wild flowers on the borders, or where an extra severe cold winter current, or a forest fire, may have destroyed the arborescent growths. One would hardly suppose there were forest fires in a wet climate like this, but they are purposely kindled by the Indians for various purposes. To this destruction by fire succeeds the Fire weed, *Epilobium angustifolium*, but instead of 2 or 3 feet it reaches 5 or even 6 feet in height. Other species of *Epilobium* grow tall and rank. A scarlet Columbine, *Aquilegia formosa*, reminds one of our *Wissahickon*, while the blue Aconite, a form of the European *Aconitum Napellus*, is quite gay, and is suggestive of the woodland scenery of the Old World. Buttercups are there, not yellow, but of a coppery tint, named by Hooker as *Ranunculus orthorhynchus*. Where the woods are not too dense to allow anything to grow, a violet, *Viola sarmatosa*, is found. Like ours, they only make real flowers in the early spring, and from thence on till winter bear seed vessels and seed without blooming. Botanists style these cleistogeme. There is also a "Spring Banty," but not as pretty as ours. It is *Claytonia sarmatosa*. The Indians eat it if they do not admire it. Our wood *Geranium, G. maculatum*, is there represented by a more showy

species, *G. erianthum*, but it does not make the same show, as only here and there on a moist rock, in company with our own Blue Bell of Scotland, *Campanula rotundifolia*, can it find a chance to live. The shooting star of our prairies, *Dodecatheon Meadia*, is also in the same company.

The Nutka Rose, *Rosa nutkaensis*, gives something like our scenery to the borders of woods, but a very peculiar form, *Rosa gymnocarpa*, is almost climbing. It will send its slender branches up among shrubbery 10 or more feet, and in the trails through the woods arch over the path, and with its numerous small scarlet haws give a bright character to the otherwise gloomy path. The wood Strawberries are white, belonging to a different species to ours, and are known as *Fragaria chilensis*. It was first discovered on the South Pacific, whence its name. The most surprising wild flower of the borders of Alaskan woods is, perhaps, the Touch-me-not of our *Wissahickon* drive, *Impatiens fulva*. As it is killed by the first white frost, it would be wonderful to see it in the Arctics only for the knowledge that the seeds are frost-proof. It will sprout, flower, and seed all within a short sub-Arctic summer. Many Ericaceous plants are similar to our own, illustrating the point I desire to make, that, allowing for a slight change in species, the Alaskan forest traveller might readily believe he was in a forest in Maine.

Of course, in a humid atmosphere like that of Alaska, mosses abound. There is this difference between a moss picture there and with us, that when the earth is washed away from a moss-covered bank in our country, the moss will die and falls away too. But the moisture of the Alaskan climate permits the moss to live on, and one may see occasionally what appear to be ropes of moss extending like wreaths or garlands from bank to bank, or hanging in festoons down the sloping sides. In the forests the feet often sink deep in beds of moss, just as they often do in the forests of Canada or our Northern States. *Thomas Mehan.*

CHEMISTRY OF THE APPLE.

(Continued from p. 612.)

In continuation of the chemistry of Apple-tree foliage, we next have to consider the individual constituents of their chemical composition, and the significance of each element upon the welfare of the tree as a fruit producer.

Moisture.—With the exception of the Fameuse variety, the percentage of water in all the specimens of Apple leaves taken May 25, lies between 71 and 72. The Fameuse is more succulent, and contains 75½ per cent. water. In the leaves gathered September 20, we find a general diminution in the amount of moisture, the loss being about 12 per cent. It is interesting and perhaps instructive to note that with regard to the proportion of water, the leaves of May 25 fall into the same order with those of September 20 the Duchess of Oldenburg containing least, and the Fameuse most water, showing clearly that while all have followed the general law in loss of moisture, each has retained its own characteristic individuality. Average percentage of water in young leaf, 72.36; average percentage of water in mature leaf, 60.71.

Organic Matter.—This includes all the combustible material of the leaf, and is composed of carbon, oxygen, hydrogen, and nitrogen. In the leaves of May 25, those of the Duchess of Oldenburg and of the Wealthy, the percentage of organic matter are almost the same, and head the list. The Telosky and Northern Spy also contain almost identical amounts, or somewhat less than the two first-mentioned, while the Fameuse contains the smallest quantity of organic matter. This order is preserved in the leaves plucked September 20. It may be observed that there was a general diminution of water, and increase of organic matter, as the season advances, and that any special variety maintains its relative position to other varieties in this respect throughout the growing season. Average percentage of organic matter in young leaf, 25.31;

average percentage of organic matter in mature leaf, 35.83.

Ash.—The percentage of all the inorganic or mineral constituents of the leaf are included in the ash. With the exception of the Wealthy, we find the amounts of mineral matter of the leaves of May 24 closely approximating to one another. The leaves of the Wealthy fall about one-half per cent. below the others in ash constituents. In those of September 20 there is a general increase in the quantity of ash, amounting from 0.5 to 1.5 per cent. over those of May 25. Average percentage of ash in young leaf, 2.33; average percentage of ash in mature leaf, 3.46.

Phosphoric Acid.—With regard to the composition of the ash, it is difficult to discover in many cases what principle, if any, underlies the distribution of the mineral constituents throughout the tissues of the leaf during its growth. Without reading too much, however, into the results of a single analysis, the results show most clearly that the young leaf contains in its ash a much larger percentage of phosphoric acid than the maturer one; in some instances the phosphoric acid in the latter is but one-half, or even less, than that of the younger leaf. This would lead us to suppose that, as the season advanced, there was a retrograde movement of the phosphoric acid of the leaf to other parts of the tree. As the seed is well known to contain a relatively large quantity of this acid, we may certainly be allowed to think that the food elaborated in the leaf finds its way finally, in part, at all events, to the fruit and other portions of the tree. And this undoubtedly expresses a truth (though probably not the whole truth), as the results show that the average number of pounds of phosphoric acid per 1000 lb. of the younger leaf is higher than the corresponding amount for the maturer leaf, and this in spite of the fact that the percentage of ash in the latter is considerably higher than the former. Average percentage of phosphoric acid in the young leaf, 10.47; average percentage of phosphoric acid in the mature leaf, 5.82.

Potash.—It would not be safe, from the results obtained, to advance strongly any theories regarding the disposition of this important element in the leaf. The percentage of potash in the young leaf is somewhat lower than that in the mature leaf. When we, however, consider the increased amount of ash in the latter, we find that, per 1000 lb., the older leaves contain 1.5 lb. more potash than the younger leaves. On comparing the amounts of potash obtained in these analyses with the quantity as found in leaves of other trees, it is at once apparent that the leaves of the Apple tree are exceptionally rich in this ingredient.

Lime.—The average percentage of lime in the ash of the young leaf is 17.4, while that in the mature leaf is 27.9, an increase of 10½ per cent. This increase would also appear to be regular throughout the varieties examined.

Magnesia.—While the percentage of lime increases during the growth of the leaf, the results show that the percentage of magnesia decreases during that period. Thus, in the young leaf we have magnesia 9.77 as the average percentage, and in the mature leaf this amount is reduced to 4.81. This fact is the more remarkable and interesting when we remember that the percentage of phosphoric acid diminished in the same ratio during the same period. It seems quite possible that these two elements of plant-food are intimately related in the economy of the growing tree, and that in the elaboration of the plant-food within the tissues, and the distribution of this food to the different parts of the tree, these two play a very important rôle.

Oxide of Iron and Silica.—Throughout the whole series the amounts of these constituents are found to be very similar, and the average in the young and the mature leaf closely approximate each other. The iron, after it has performed its functions in the chlorophyll of the leaf, appears to remain in the leaf, and the results show that there is no extra deposition of silica in the cells of the leaf as it grows older.

Nitrogen.—The only constituent of great importance that remains to be discussed is nitrogen. The differences in the amounts of nitrogen contained in the organic matter of the leaves of the different varieties examined are so small that one would not be warranted in drawing any conclusion therefrom as to differences in this constituent between the varieties. On taking the averages, however, of nitrogen of the leaves in the two stages of their growth, a considerable difference is at once apparent—a difference that corresponds to 3 per cent. of albuminoids. The figures are:—Nitrogen in young leaf, 2.94, corresponding to 18.61 per cent. albuminoids; nitrogen in mature leaf, 2.48, corresponding to 15.50 per cent. albuminoids.

The amount of nitrogen per 1000 lb. of the mature leaf is 887 lb., as against 742 lb. in the young leaf. This is due to the increased percentage of organic matter in the older leaf. It is evident from these results, that changes which affect the relative percentage of nitrogen in the organic matter take place in the leaf during its development.

Phosphoric acid, potash, and nitrogen are the three constituents which above all others must be put back into the soil if we are to preserve its fertility. Plants of certain orders require more of one or other of these ingredients than plants of other orders. Some soils are specially rich or poor in one or more of the materials, and, consequently, in the rational mode of application of fertilizers much intelligence and patience must be exercised.

That the leaves of the Apple trees draw a large amount of food from the soil annually has been shown. This must be replaced in excess for the vigorous growth of the tree. The leaves of the tree play no unimportant part; respiration and digestion are their two chief functions, which, if they do not perform well, the tree cannot live and bring to perfection its fruit. Therefore, when we feed the leaves we are indirectly feeding the fruit.

The results of these analyses seem to point in the direction of mineral fertilizers, and specially of potash, as being more particularly required for the growth of the leaves, and, therefore, for the vigorous development of the tree, including an abundant crop of fruit.

FLORISTS' FLOWERS.

THE CINERARIA.

We grow our Cinerarias mostly from offsets, in order that the plants should be true in colour, habit, &c., and our plants fill the side stages of a house that is 50 feet long. These plants continue in flower from about Christmas to May. Visitors when beholding the plants have sometimes remarked that they did not care to grow Cinerarias because of their liability to the attacks of greenfly, which might be a good reason if the sphis could not be kept off. I must admit that it is difficult to keep these plants clean when they are badly attacked, and plants produced from cuttings or offsets are even more difficult to keep clean than seedlings; but both may be kept in good health, and the present is the proper time to have them cleaned. We fumigate with tobacco about once in three or four weeks as a precautionary measure. Another parasite, of a still more insidious kind, is mildew, which will generally show itself in November at the edges of the leaves, which it causes to curl up, and spreads on the under-sides of them. It has a downy appearance, that might by some persons be taken for a natural one, for the slender white threads of the mildew are scarcely to be observed without a lens, and yet it is capable, if not speedily destroyed, of permanently injuring the plants. Our plants became infested to some extent with greenfly when in the cold frames, and they could not be fumigated until they were placed in the houses. They had to contend with greenfly, as well as with mildew, and, as a remedy, I mixed tobacco dust with an equal portion of flowers-of-sulphur, and having laid the plants on their sides, puffed this mixture amongst the leaves with a distributor.

This treatment, together with fumigation on two or three occasions, made a clean sweep of both destroyers. Some growers keep the plants during winter in low lean-to pits, but the larger leaves will, in such structures, sometimes damp off, and when this happens, the full beauty of the plant is gone. A span-roofed house is the best place for Cinerarias, and whenever the outside temperature is higher than 40°, there ought to be ample ventilation by means of the top and side ventilators. Even in very cold weather, a small amount of air should be afforded at the top of the house, the hot-water pipes being slightly warmed, to cause a gentle circulation of air, if it be but for two or three hours about noon. Should the specimen plants not yet be in their flowering pots, it ought not to be longer delayed. It is better to repot Cinerarias when the weather is mild, as at that time root action is more active than in cold weather. An 8 or a 9-inch pot is not too large for a strong plant, and the potting soil may consist of fibrous loam four-sixths, leaf-mould one-sixth, decayed manure one-sixth, and coarse sand in quantity to keep the compost open. Cinerarias should be grown on steadily without check, but never "drawn up," as it is termed, for want of free air. It is not a hardy plant, and a few degrees of frost would destroy some of the leaves, or, if this did not happen, the growth of the plants would be seriously checked. During growth, the shoots should be tied out, and some of the older leaves tied down to allow them to push out quite freely. Let the plants be placed near to the glass, as there the circulation of air is best; but vicissitudes of temperature in such a situation must be carefully guarded against. Gardeners and amateurs doubtless find it much easier to raise plants from seeds than to propagate by means of offsets; but if, at any time, a particularly good variety is obtained, I would advise that, as soon as the flowers are past their best, the stems be cut off an inch or two above the soil. The plant so treated will soon make fresh growths from its base, and these, when large enough, can be taken off with their roots, and planted in small pots. *J. Douglas.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

BOX-EDGINGS.—Although the planting of Box, like that of other evergreens, may be performed at almost any time in the year (weather permitting), the interval from October to March is the best time; and bearing this in mind, any gaps in the lines may now be made good. To do this expeditiously and well, remove a little of the gravel and soil to the depth of about 6 inches, make the soil level and very firm, and dibble in, or lay in, rooted pieces of Box, in thickness and height equal to the bulk of the line, and replace the soil and gravel, and tread it firmly together. If much, or the whole, of the Box-edging has become unsightly, it should be taken up, and laid in a convenient spot, the ground dug, trodden, and levelled in accordance with the gradient of the walk, but making each side level with the other, and the centre of the walk. This done, measure the width of the walk at both ends, putting four stiffish sticks firmly in the ground (two at each end) to mark the position of the edgings. Then strain the line from stick to stick on one side, and with a spade cut away the soil perpendicularly on the walk side of the line to the depth of about 4 inches, and in this trench lay the Box after the roots have been shortened and the tops trimmed evenly, and made about 2 inches thick. Press the soil firmly about the roots or slips, as the case may be, and after the soil has been trodden down the entire length of the edging, fill up the gutter-like space with gravel, a coat of which should also be laid on the walk at the same time, raked over, and then rolled.

THE PRUNING, CLEANSING, AND TRAINING OF CLIMBERS.—The present is a good time to prune, clean, and rearrange any climbers that may require attention in that direction. Roses, Cotoneasters, Pyracanthas, Ceanothus, and such like plants, should, when used as a covering for walls and fences, have their shoots in the first instance trained regularly over the space allotted to them. The lateral growths

of the Rose, some Clematis, and other deciduous climbing plants, should be pruned back to one bud every year soon after the fall of the leaf, pruning those trained against walls and fences having south and west aspects first, and those occupying less favourable positions at a later period. Sometimes brown-scale effects a lodgment on climbers, especially Roses, Cotoneasters, and Pyracanthas. Where this is the case, the insects should be removed with a pointed stick, afterwards well washing the shoots and every part of the tree with a solution, consisting of about 6 oz. of soft-soap dissolved in a gallon of warm water, and a wine-glassful of petroleum; a half-worn out paint-brush free from paint, or a stiffish brush made of bast, are good for this purpose, the mixture being well stirred meanwhile. This done, the trees can be re-arranged, tying or nailing—as the case may be—the shoots in their proper places, not too closely together, doing the work in a manner that will commend itself to good taste.

SUITABLE EDGINGS FOR WALKS UNDER TREES.

—It is lost labour to try to get turf to grow well under trees, especially as an edging for walks. Where this is the case, I know of no plants so suitable for covering the otherwise bare ground alongside roads and walks in the pleasancess as St. John's Wort and Ivy, whichever plant is used, and there is no reason why both should not be used separately at different points. They should be planted, and allowed to extend over any bare space that may be within view of the walk, and simply preventing its encroaching on the gravel space. The present is a capital time for doing such work. All that is required is to thrust a spade into the ground, press it forward, and then drop a few rooted pieces of either plant into the opening thus made, withdraw the spade, and tread the soil about each plant.

BAD-WEATHER WORK.—Advantage should be taken of the too-frequent wet days to make a good stock of labels of various sizes, and pegs for marking out designs, &c.; also to prepare Rose and Dahlia sticks, and other flower supports. *H. W. Ward, Longford Castle, Salisbury.*

THE HARDY FRUIT GARDEN.

Owing to the extreme wetness of the weather, planting will be much delayed, and the workmen set on to the pruning and nailing of bush and wall trees, pushing forward this work while the weather keeps mild. All kinds of fruit trees, with the exception of the Peach, Nectarine, and Fig, may be pruned and nailed.

PYRAMIDS, bushes, and cordons should be so kept thinned of young shoots that light may pass freely amongst them. As frequently seen, these forms of trained trees have an excess of branches, and as a consequence, large fruit is an exception. Much of the annual growth should be shortened back to a few buds at the base, and where crowding is likely to occur, some of the larger branches should be cut out. Pyramidal trees should have the leading shoot fastened securely to a stake, that should reach some distance beyond the tip, and in pruning, this leader should be shortened back each year somewhat; and if growth is weak, it may be shortened back to 15 inches, and to a bud on the opposite side to which it was cut before. Much newly-planted trees slightly, and secure them against wind-rocking. For greater safety in naming the trees in newly-planted orchards, prepare a plan of the planting, and have each tree named on the plan, which should then be kept as a reference.

APRICOTS.—These trees may now be pruned and put in order for the season. If scale be present, brush it off, and then dress the trees with a weak solution of petroleum and soap-suds. Reserve plenty of young wood wherever there appears to be space for it all over the trees, as it is on this that some sorts mostly carry fruit; and do not stick in more nails than are necessary to hold the branches in their place. If the trees are few and time permits, all the old shreds should be removed. Where time is precious, remove only the most decayed or those which are nipping the bark too closely. The main branches of young Apricot trees should be shortened back to the well-ripened portions, and forerights spurred back to a few basal buds, but reserving some of those which are near to the wall of good length. Topdress the border with fresh pasture loam, and when planting make use of burnt earth, wood-ashes, old plaster, and loam.

FIGS.—Preparations should be made for winter protection, notwithstanding the present mildness,

and for this purpose use Spruce boughs, Bracken, or straw thatch. [In southern counties no protection is needed. En.] Root-prune any Fig trees that make much wood and afford but few fruits. *H. Markham, Mereworth Castle, Maidstone.*

THE KITCHEN GARDEN.

PEAS.—Protect the plants as soon as they appear above-ground with Spruce Fir boughs of about 16 or 18 inches in length, stuck on each side of the rows. Failing Spruce, cuttings of Box, Laurel, or Yew may be made use of. A sharp watch should be kept for mice, which commit much mischief in a short space of time, and where cats cannot be employed to catch mice, traps must be set. Slugs may be kept at bay by putting fresh sifted coal-ashes and lime in small quantity mixed together at the side of the rows. These remarks apply also to Broad Beans.

POTATOS.—The sets, when shoots from 2 to 3 inches long have grown, may be planted in 10 or 12-inch pots, or in beds of light soil over a mild hot-bed, at from 4 to 7 inches apart, and 5 inches deep, 12 to 15 inches being allowed between the rows in beds, according to the habit of the variety. Cover the sets at first with a layer of soil 3 inches thick; and later, make the drills level with the surface of the bed. Water sparingly during the first stages of growth, but as the plants increase in size, water may be afforded more liberally. Never use cold water. Give air freely whenever the weather is favourable; and at night, and in frosty weather, cover the sashes with mats, Fern, or straw, and maintain a mild and nearly uniform temperature. If in pots, they should be kept up near the glass, so as to attain a sturdy growth.

YOUNG ONIONS.—These are sometimes asked for in winter, and to be prepared, some seed may be sown thickly in boxes or pans of warmed soil. [Old seed may be watered-in with water in which camphor has laid for a few days, its germination being favoured thereby. Ed.] Seed of good germinating power may be sown on the surface, after the boxes, &c., have been watered, and allowed to get a little dry on the surface; cover lightly with dryish mould, press firm and level, and stand in a forcing-house or pit, having a warmth of 55° to 65°. A sowing may be made of Onions at fortnightly intervals during winter and spring. Sprouting Onions may be planted in pots and boxes, and forced for the sake of the tender leaves.

RADISHES.—These roots are always the best when grown alone. The Olive-shaped Scarlet and Wood's Early-frame among the long-rooted varieties, and the red and white turnip-rooted, are the best for forcing. The soil of the hot-bed should be light and rich, and of the thickness of 6 or 8 inches. The bottom-heat may be 75°, and the top-heat 55° at night, and 65° by day. One ounce of seed will sow 20 square feet, and the seeds are best put in with the finger and thumb just under the surface, at about 2 inches apart. If three seeds are sown in a patch now, thin out to one when it is seen which will make the best plant. Treat like Potatoes. Sow again at intervals of three weeks. *C. J. Waite, Glenhurst, Esher.*

PLANTS AND THEIR CULTURE.

THE STOVE.—*Pentas carnea*, any plants of which had attention in regard to repotting and the denudation of the flower-heads during summer and early autumn, will be found very useful in decoration and cutting from at this season. Their pink-coloured flowers are generally much admired although the habit of the plant is rather stiff and ungraceful. The plants should be grown in a light position, and in an intermediate temperature. The earliest *Poinsettias* plants will be showing their gorgeous bracts, and all damp, which is an enemy to them, should be dissipated by artificial heat in addition to careful ventilation, avoiding as much as possible the needless slopping about of water. The plants, intermixed with Palms and Camellias, are well set off by the green foliage of the latter. Later plants, whose bracts are only partially expanded, should be afforded a little weak manure water occasionally, which will help materially to increase the size of these. At the same time, keep the plants in as light a position as possible.

EUPHORBIA JACQUINIÆFLORA will require the same kind of treatment as the *Poinsettias*, one neat stick being employed in each pot to keep the plants contained in it from getting loosened at the surface of the soil. It is best to strike this plant several together in one pot, and repot with division. Allow

the shoots to hang naturally. Avoid the common error of keeping the soil over-moist, this being a fertile cause of the plants damping off between wind and water. Pay close attention to keeping clean all such subjects as Palms, Anthuriums, Aralias, Crotons, Dracænas, Pandanus, &c., freeing them of all insect pests, most of which plants are liable to be infested with scale insects, not readily seen when few in number, but soon making their presence known when numerous by the shabby appearance of the foliage. *Clerodendron Thompsonianum*, various *Allamandas* and *Dipladenias* at rest often get infested with scale; this pest is more easily destroyed now than after the plants commence to grow in early spring. Now that sunshine is at a minimum, the temperature should be kept as low as is consistent with the health of the plants, say 58° to 60° by night and 65° to 68° by day. On frosty nights it is economy to cover the roof with tarpaulin, mats, Frigi Domo, &c., and if not the whole roof, at least some 7 or 8 feet up from the eaves. *R. Milner, Penrice Castle, Swansea.*

FRUITS UNDER GLASS.

FIGS IN POTS.—Some weeks ago, the preparation of the early lot of Figs for forcing was advised, the earliest crop being taken from plants in pots, if these are annually started at this time of the year, they give a good return in fruit. The buds will be about to burst, and the plants will require to be kept steadily moving, replenishing the bottom-heat materials, so that the temperature may range from 70° to 80°; this is readily managed by ramming the old material closer together, and adding some new, for which purpose fresh sweet leaves are best, if got into a warm state first. When stable-dung is used, as it heats quickly and is not lasting, much care is needed. The trees should be damped over twice a day in bright weather, and in dull sunless days it is advisable not to syringe; or, at any rate, to get the shoots dry before dusk, and to damp the floors, walls, and dry parts of the house instead. A night temperature of 50° will be a safe one, although 52° to 54° in mild weather will do no harm, as outside conditions should be taken into consideration, in regard to the degree of warmth kept up. The day warmth may range 10° or 15° higher if the weather be bright; air should be sparingly afforded on cold days, and cold draughts avoided. The timely thinning of the fruits is important, as nutriment is to a certain degree limited, and too many being left sometimes results in the loss of many fruits. The first house should now be in readiness for forcing; trees started in the first half of December usually give good crops if forced slowly, and the trees afforded time to finish a second crop. See that there is no trace of white scale on any of the trees. The borders should have the layer of the top soil removed, replacing it with a rich dressing if the trees are old, or do not make too much wood. In training Figs, lay in the wood thinly. In later houses, or in those without artificial heating, the pruning of the trees may be done forthwith, and the prunings made use of for increase.

ORCHARD-HOUSE.—If the trees here are wanted to fruit early, place them in the house without further delay, partly plunging the pots. In placing the trees, endeavour to keep those kinds requiring more air near the ventilators or the colder parts of the house. A temperature of 40° to 45° at night, with a 10° rise by day will be ample for the present, syringing the trees with tepid water twice a day in mild, and more sparingly in dull weather. The roots must be thoroughly watered at the start, whether the fresh soil on the surface be moist or not. If early fruits of Strawberries are looked for, plants may be started gently on a mild hotbed of leaves, keeping the plants as close as may be to the lights. If the plants are dry, water them; they will not, or should not, want watering again before the flowers show. A temperature of 40° by night and 45° to 50° by day will suffice. *G. Wythes, Syon House.*

THE ORCHID HOUSES.

THE CATTLEYA-HOUSE.—Plants of *Cattleya Skinnerii* which are maturing their growths in the greater warmth of the *Dendrobium*-house, should now be brought back to their proper quarters, otherwise the season of rest will be curtailed, and the result of next year's growth suffering. I have pointed out how necessary it is, where a great number of Orchids are grown satisfactorily, that there should be more than one house. The *Cattleya*-house affords a good resting-place for *Dendrobiums*, *Bensonias*, *Devonianum*, *foracium giganteum*, *Dalhouseianum*, and the hybrids of *Ainsworthii*, which

should not be placed where there is a low temperature, or the foliage of the current year will be injured, and the strength of the plants impaired. A pretty *Cattleya* now in flower, and a free grower, is *C. Walkeriana*; it is a species that will bloom without fail twice in the year, i.e., midsummer and Christmas. The plants do very well when planted in baskets in peat and sphagnum moss, and placed where there is full sunlight; our plants are shaded for only a few hours in the morning, even in the warmest and sunniest part of the year. The flower-spikes usually carry two flowers each, but when they are very strong, I have known them to show three flowers. The growth of the plant being weak, a number of flowering leads may be grown in an 8-inch basket. The varieties of this plant are considerable in number, and the colours are also much varied. The red varieties of *Lælia anceps* now in flower fail to fulfil my hopes, for although growth is good, the flowers themselves are wanting in size. *Cattleya chocoensis* is a species that comes into flower at this season.

The affording of water to the *Cattleyas* is now a most difficult matter to do aright, but when there is doubt as to the need of water, it is better to err on the side of dryness. The growing sphagnum is a poor guide in the matter, and the plants must be daily under observation before the cultivator is sure that water is needed. Shrivelling of the bulbs is also no guide, as it may be brought about by too much as well as too little water. The temperatures given in the last Calendar will still hold good. Atmospheric moisture must be kept at a low point, as it will be understood by our readers that the lower the temperature of the house, the more it will be loaded with moisture. *A. G. Catt, Parkfield, Hallow, Worcester.*

THE APIARY.

PLANTING FOR BEES.—It is a great advantage to have plenty of pollen-bearing plants in close proximity to the apiary in early spring, as it causes colonies to go ahead much faster when there is no lack of natural supplies of nitrogenous food, so much of which is required for feeding the larvae. Also, when the workers do not have far to go for it, they stand less chance of succumbing to the elements than when they have long distances to fly, the mortality among foraging bees from this cause being very large at that early season, and anything to mitigate the evil is a gain to the colony, the life of every bee saved as early as this materially helping the stock to reach the necessary strength to take full advantage of the first honey flow that arrives. Colonies ought to be strong enough to yield a good surplus from fruit blossom, but in the majority of cases this source of income is lost to the bee-keeper through his stocks not being advanced enough at the right moment to profit him by it. The Willow (*Salix caprea*), Hazel, Crocus, and Wallflower, are the most useful of the earliest-flowering plants for pollen-bearing, and any supplement that can be made to the number of these existing in the neighbourhood of the hives would be a gain to the bee-keeper. To follow this subject further into the season, it is utterly useless for any bee-keeper with limited ground at his disposal to grow small patches of honey-producing plants, thinking that his yield of honey will be perceptibly influenced thereby. It is, however, possible for farmers and agriculturists who are bee-keepers, or in sympathy with them, to do useful service in various ways. It would be practicable to systematically prolong the flowering season of the Clovers by having *Trifolium incarnatum* to bloom in May, followed by the white, or Dutch, the succession being kept up nearly to the end of July by Alsike, the latter having been previously cut for greenmeat; or perhaps a few acres could be devoted to such valuable honey-yielding plants as Prickly Comfrey, Lucerne, Sainfoin, Buckwheat, *Melilotus alba*, &c., so as to serve a double purpose by being useful alike to bees and ordinary farm stock.

FEEDING STOCKS, ETC.—The weather having been so mild up to the present, much greater herds will have been made on stores than would have been the case if it had been more wintery, and candy must be given where any insufficiency is suspected. This can either be slipped under the quilt, or placed above it, over the feed-hole, or if a section of honey can be spared, this may be laid over the latter instead of the candy, afterwards covering all up warm and snug. Quits that have got damp should be replaced by dry ones. Keep a look-out, so that mice do not gain an entrance to hives, and prevent tits from taking the bees, either by trapping them, or keeping them from of the alighting-board with wire-netting. *Expert.*

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed but kept as a guarantee of good faith.

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

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Advertisements should not be sent to the Editor, but to the Publisher, at the above address.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

- MONDAY, DEC. 21. { 150,000 Palm Seeds, Lilium auratum, Lilies, Home-grown, Tuberoses, Bulbs, Dutch Bulbs, &c., at Stevens' Rooms.
- TUESDAY, DEC. 22. { Glass Fretions, Hot-water Piping, Boilers, &c., at the Clock House, White Hart Lane, Tottenham, N., by Protheroe & Morris.
- WEDNESDAY, DEC. 23. { Roses, Fruit Trees, Border Plants, &c., at Stevens' Rooms. Large Consignment of Lilies, Begonias, Palms, Bulbs, &c., at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—38°.9.

THIS, like most things in America, is to be a "big thing," some five times greater in extent than the last great exhibition in Paris! The last number of the *Journal of the Society of Arts* contains a paper by Mr. JAMES DREDGE, containing full details of the condition and prospects of the Exhibition. As there is a large and increasing trade between this country and the United States in horticultural matters, we deem it well to lay before our readers the following particulars relating to the horticultural department, and to suggest that it would be well for the Royal Horticultural Society to call a meeting of those interested to see in what manner the interests of our horticulturists can best be served.

HORTICULTURAL BUILDING.

"Opposite the wooded island in the lagoon will be erected the Horticultural Building, a great conservatory, 1000 feet in length, and 287 feet in maximum width. The general features of this building are to be a central dome, 187 feet in diameter, and 113 feet high. At each end is a large rectangular pavilion, and these wings are connected with the central rotunda by the main body of the building, each side of which is divided into two courts, 88 feet wide by 270 feet long. The courts facing the wooded island are constructed entirely of iron and glass, and will be used for especially tender plants. The rear courts, while they will receive abundance of light, are not entirely glazed; they will be specially adapted for fruit-growing exhibits which may require a cool temperature. A large section of the courts will be devoted exclusively to the exhibition of Orange culture in California and Florida. The central dome will be chiefly given to Palms, Bamboos, Tree Ferns, Cacti, Eucalyptus, &c. Ten miles of 1½-inch piping will be required to heat the dome alone, and a still greater length will be wanted for the high temperature courts. The ground floor of each pavilion will be chiefly used for fruit exhibits, collections of seeds, and horticultural appliances.

Broad galleries will run around these pavilions about 25 feet above the ground. The greater part of this area will be used for cafés and restaurants, and as the architectural treatment of the buildings includes an exterior arcade running around three sides—this arcade being extended to the upper storey in the pavilions—an additional amount of open-air space will thus be obtained, whence some of the most attractive views in the grounds will be seen. It is the intention of the chiefs of the horticultural department to encourage the best possible displays of all meritorious exhibits in the various groups of pomology, viticulture, floriculture, culinary vegetables, seeds, arboriculture, methods and appliances of horticulture, &c. As the available space is very limited, a careful selection will be made of the objects accepted. The classification of this department will embrace everything of professional interest to horticulturists, whether they are engaged on a large or a limited scale, and there can be little doubt but that the display will give us as great an impetus to the gardener's art as did the similar but much more limited exhibit at the Centennial Exhibition of 1876. Already the applications for space in this conservatory from the United States alone would fill the building several times over, and a system of the most rigid selection is therefore necessary. From Australia and New Zealand, from Latin America, and from China and Japan, applications are already arriving; the most curious exhibits from the last-named country will be the dwarf fruit and other trees, over a century old, and not more than 2 feet high. Many of the States and territories have arranged to make a complete herbarium of their flora, and wax-models of all their fruits; it is the intention of the chiefs of this department to make a great collective exhibit of these objects.

I think that there is every reason to suppose that this section will receive very warm and practical support from English horticulturists. Not only is our pre-eminence in the art fully recognised in the United States, but the importation of plants is not saddled with the heavy taxation that applies to most other objects to that country; in fact, all plants intended for indoor cultivation, for the production of cut flowers, and for decorative purposes, are admitted free. In the same way, many garden seeds are equally unenumerated, and, as will be seen from the following list of exports for 1890, a very large trade is done in them by seed-producers in this country:—

UNTAXED EXPORTS.		Value.
Flower and other seeds	...	£27,000
Trees and plants	...	114,100
TAXED EXPORTS.		Value.
Bulbs	...	73,730
Garden and agricultural seeds	...	60,400
Plants, &c.	...	934,990

It will be within the remembrance of many persons who visited the Centennial Exhibition at Philadelphia in 1876, that the Rhododendron displays made by British growers gained the wonder and admiration of millions of American visitors; this exhibit laid the foundation for a large and constantly-growing trade in this particular shrub, and I was recently informed by one of the chiefs of this department in Chicago—an eminent horticulturist—that, despite the advance that has been made in America in this branch of culture, we still maintain the lead that we had nearly twenty years ago. In 1876 there were less than 1000 nurserymen in the whole of the United States; this number has been increased more than fourfold at the present time, and the trade in

America with cut flowers and decorative plants is enormous. At the beginning of this year there were 4650 floriculture establishments in the United States, with nearly 39,000,000 square feet of glass. The value of these establishments is about £8,000,000 sterling, while the value of the plant sales during 1890 amounted to £2,500,000 sterling, and that for cut flowers to nearly £3,000,000. With this very extensive business, with the acknowledged fact that we, as floriculturists, are far in advance of the United States, and with the very favourable conditions that exist, there is every reason to suppose that in this department, at least, British exhibitors may go to Chicago without the least doubt as to the commercial success of their undertaking.

Before dismissing the horticultural building, it may be added, that extensive grounds will surround it; that these grounds will be laid out in the most elaborate manner, and be adapted for flower displays which will also form exhibits. The art of carpet-bedding has been carried, according to our more sombre eastern ideas, to theatrical extravagance in the United States, and while one cannot but admire the ingenuity which tortures foliage plants and brilliant flowers into "Gates Ajar," terrestrial globes, canoes, sundials, and the like, the British landscape gardeners will probably be content with admiration, and refrain from imitating these curious triumphs of floral decoration."

"THERE is a glut of Apples in the market," said a morning contemporary, the other day; and "the Canadian crop of Apples is this year estimated at a million barrels," an evening journal had previously stated. All this, of course, writes a correspondent, means a bad lookout for low-class English products—first-class will always hold their own anywhere; and in these few words the grower may read his lesson. As time goes on, all the weedy sorts will have been cleared from the market, and Apples worthy of the name will be "worth money," as the saying is. By the month of March next, people will begin to sigh for a toothsome and cheaper Apple, and then—on come the beautiful varieties from Hobart, in far Tasmania. We have been threatened with supplies from Australia; they would be very welcome, but they have yet to be grown, and it is just possible that Australia is not an Apple-growing country. This, however, from all accounts, Tasmania is; we can readily take this for granted, with the vivid memory of what has reached us from that far-off British colony, rapidly rising in importance, for much of which it is indebted to its Fruit-Growers' Association, and the Agent-General, located in the Broadway, Westminster—a gentleman with a firm belief in the future of his country, and quite able to direct the operations of those of his friends at the Antipodes who seek to find favour for their wares in the English markets. A pleasant interview with this gentleman a few days since was productive of much information concerning the Apples of Tasmania, from which we reproduce the following, almost in the words of our informant.

Three years since, the import of Apples into this country from Hobart was some 30,000 bushels; in the year following—1890—the figures had risen to 40,000; this year the importation had risen to 140,000 bushels! It may be stated here that during the season of 1891 considerable space was secured in the cool chambers of steamers loading fruit at Hobart beyond the first-class fruit then at the disposal of the shippers. To

save absolute loss of freight, inferior fruit was shipped, with the consequence that the price fell from the average of 16s. to 18s. per bushel of 1889 and 1890 to 8s. to 10s. in 1891. It has been stated in the English press that the Tasmanian growers are satisfied with this lower rate; but they are not satisfied. The actual cost to the shipper in freight, &c., excluding the price of the

need not anticipate the arrival from Tasmania of any but first-class Apples.

Respecting the area over which Apples are grown in Tasmania, the Agent-General informed us that the acreage under gardens and orchards in 1889-90 was 9808, against 6459 in 1880-81, and this increase is likely to be maintained. It is anticipated, says our informant, that in ten

OUR ALMANAC.—Secretaries of Societies and others are earnestly requested to forward, at once, the dates of show fixtures, and meetings of horticultural societies of any kind for 1892, for insertion in the Almanac to be published in our issue for January 2.

THE LARGE EUCALYPTUS GLOBULUS AT TRESKO ABBEY, ISLES OF SCILLY.—I send you a photograph of the Eucalyptus globulus, a victim of the late gales, which may be of interest to your readers. It was planted in these gardens about forty years ago, and was probably the oldest Gum-tree in England, if not in Europe. The stem, 3 feet from the ground, is 9 feet in circumference. Its height, a very little over 40 feet, the top having been constantly blown off by the wind, which gave it a bushy appearance, in contrast to the usually erect habit of the tree. It was blown down on the morning of November 11, in a severe north-west squall. A well known gardener advised me to clear some of the undergrowth from around it, so as to show the trunk. This I did, with a result that the draught was let in, and half the tree killed; hence, the crevice seen in the illustration. I have been told by some Australians that if you grow a Gum tree in the bush, and cut the bush away, it invariably kills it, and this was the result with one-half of my tree, the other half was apparently improving till blown down, then only one side of the undergrowth was cut away in the case of my tree. Of course, I do not mean you cannot grow Eucalyptus in the open. We only registered frost two nights last winter, and did not lose much—Pelargoniums cut down. I had 500 young *Metrosideros* ready to go out; these were pretty well destroyed; they will not stand frost in their younger stages, but stand the wind better than anything else I know, and grow in rock—anywhere, in fact, where there is ever so little soil. The Palm shown in the illustration, near the Eucalyptus, *Areca Bueri*, was also considerably damaged by the fall of its neighbour. *T. Algernon Dorrien Smith, Tresko Abbey, Isles of Scilly, Nov. 23.*

CHAMBRE SYNDICALE DES HORTICULTEURS BELGES.—At the meeting held on December 8, in the Casino, Ghent, the following plants were awarded First-class Certificates, *Cypripedium (Spicerianum × barbatum superbum)*, shown by M. C. VUULSTÈKE; *Abutilon insignis* Duc de Malakoff *foliis marmoratis*, shown by M. L. DESMET DU VINIER; *Asparagus retrofractus arborescens*, shown by MM. DURIEZ FRÈRES; *Cypripedium insigne* Moense, shown by M. le Notaire MOËNS; *Cypripedium decorum (Sallieri Hyeatum × Lawrenceanum)*, shown by M. J. HYE; *Adiantum nebulosum*, shown by M. E. PANSART; *Cattleya Bowringiana*, shown by MM. BOELEN FRÈRES; *Dracena Veitchii foliis variegatis*, shown by M. E. ERHAUTE; and an Orchid Herbarium, shown by M. A. MEULENAIRE—unanimously.

THE POTTING CONTEST AT MADISON SQUARE GARDEN.—The plants used were really dummies, say *Peter Henderson & Co., in the Florist's Exchange*, as it was impracticable to supply rooted cuttings; we therefore took tips from an Arbor-vitæ hedge, and trimmed them so as to leave them about the size of *Verhena* cuttings. On most of them was left a small "heel" where they were pulled off the main stem, so that they bore as close resemblance to rooted cuttings as could be found. The pots used were 2 inch, of the old style; these were used in preference to the standard pot, because more rapid work could be done with them, the rim on the latter interfering with the transferring of the pots after the plant has been placed in them to the flat. Each of the contestants had a helper, whose duty it was to keep him supplied with empty pots and to take away the flat after it was filled, so that the man who did the potting did not have to stop from the time he began until he finished. Every enquiry we received asked us to explain the motions, and we cannot do better than detail the manner of potting which the two leading contestants adopted. Both of them worked in the same way. In this connection it



FIG. 107.—EUCALYPTUS GLOBULUS IN THE SCILLY ISLES, OVERTHROWN BY THE STORM OF NOV. 11, 1891.

fruit, is over 7s. a bushel, and the 1s. to 3s. remaining over is less than the price which can be realised in the colony. The Government have noticed the mistake of putting anything but first-class fruit on the English market, and there is no probability that the Tasmanian Fruit Growers' Association, which conducts the fruit exports, will allow such a blunder to be repeated. In the season of 1892 and thereafter, the British public

years hence the acreage will be extended to some 12,000 acres. To our thinking the increase will be greater. Our informant hinted at the possibility of an early start in the production of Peaches and Apricots for this market; certainly the fruit would be eagerly bought up if in good condition; and here, surely, what has been done may fairly be accepted as an earnest of what remains to be accomplished.

might not be amiss to say that their style of potting is the same as the late JAMES MARKEY'S, the man who, it will be remembered, potted 10,000 *Verbena* plants in a day of ten hours, and right here it may not be amiss to say that it is a matter of history now that, on a later trial, JAMES MARKEY potted 11,500 *Verbena* plants in a day of ten hours, although this fact was never publicly announced so far as our knowledge goes. GEORGE MARTIN, the man who won the first prize by potting 1277 in an hour, works in this manner. The empty pots are at his left hand, the first motion is to reach for a pot, and at the same instant he takes a handful of soil; placing the pot in position, he unloosens sufficient soil from his hand to fill the pot to overflowing; while doing this he reaches for a cutting, and at the same instant, with the index finger of his right hand, makes a hole in the filled pot to receive the cutting; into this hole, with his left hand, he inserts the cutting to the required depth, and at the same time puts in the remaining soil which he held in his hand, this is to fill the hole. He then takes the pot between the index and middle fingers of both hands, and presses the soil in the pot with both thumbs, first on one side of the cutting, then on the other, to thoroughly fix it. With his right hand he then transfers the pot to the box in waiting, and in doing so reaches with his left hand after another pot and goes through the same operation again. This may seem complicated to anybody who does not use this system of potting, yet nothing can be simpler, and we are satisfied to say that it would be very difficult to improve upon it, as the quality of work done by it will attest. Potting, say, 10,000 plants in a day of ten hours by this system we are satisfied that, when well done, as many plants will grow as if only one-third of it was done, because the motions from constant practice will become so perfect that it is as thoroughly done in a rapid as in a slow manner. The work of the man who won the third prize, DENNIS BRYNES, is rather difficult to describe, as it lacked the system of the other two men, and it seemed to us that he made a great many false movements. Although he did 1238 plants, yet his work was so poor that the judges decided he was entitled to only third prize as against ENRIGHT, who won the second prize with a record of 1155. MR. JACOB D. EISELE, superintendent for H. A. DREER, and MR. JOHN SMITH, superintendent for ROBERT CRAIG, who were two of the judges, said, after it was over, that about one-third of his work should be disqualified. We are satisfied that the main cause of his poor work was the want of a thorough system; his movements were as rapid as those of the other men who won the first and second prizes, and, we believe, with proper training he might equal their record.

THE WEST INDIAN FLORA AND FAUNA.—We take the following extracts from the Report of a Committee of the British Association, charged with reporting on the natural history of the West Indian Islands:—

St. Vincent.—Of the botanical collections received from St. Vincent, the vascular Cryptogams have been determined by MR. J. G. BAKER, F.R.S., and an account of them, with two plates, printed in the *Annals of Botany*, vol. v. (April, 1891), pp. 163-172. Amongst the Ferns, the most striking novelty is a new species of *Asplenium*, named *A. Godmani*, BAKER (pl. xi.), found in damp forests at the extreme top of Morne à Garou. Other new species are *Hymenophyllum vincentinum*, BAKER (pl. x.), and *Acrostichum* (*Elaphoglossum*) *Smithii*, BAKER. The total number of vascular Cryptogams found recently in St. Vincent amounts to 163 species. Most of these are widely spread through tropical America, and only four are endemic. In addition to the above, a new species of *Hepatica*, also from St. Vincent (*Kantia vincentina*, C. H. WRIGHT), was described in the *Journal of Botany*, vol. xxix. (April, 1891), p. 107. Of the Phanerogams from St. Vincent and some of the Grenadines, the work of determining these is being carried on as expeditiously as circumstances permit. The collection is a very large

one, and the results so far attained are recorded in the following memorandum prepared by Mr. R. A. ROLFE:—"The flowering plants have been determined as far as the end of Rutaceæ. Those from St. Vincent number slightly over a hundred species, of which about thirty, consisting for the most part of common West Indian plants, were not previously recorded from the island. The most interesting plant is a species of *Trigynia* (apparently new), a small tropical American genus of Anonaceæ not hitherto detected in the West Indies. A *Clusia* and a species of *Tetrapterys*, which cannot be identified, may also prove new. The remainder have been fully determined. The three most interesting of these are *Norantea Jussiei*, TR. and PL., previously known only from Guadeloupe and Dominica; *Zanthoxyla microcarpum*, GRISEB., from Dominica and Trinidad; and *Z. spinosum*, SW., from Dominica, Jamaica, and Cuba. The composition of the flora of the Lesser Grenadines, situated between St. Vincent and Grenada, was previously almost unknown. The plants hitherto determined are as follows: From the Island of Bequia, thirty-four species; from Mustique, eighteen; from Canouan, five; and from Union, the nearest to Grenada, five. They are, without exception, common West Indian plants, and are all also natives of St. Vincent. From the results hitherto obtained, it seems clear that the flora of the Lesser Antilles is tolerably uniform throughout, although the larger islands of Dominica, Martinique, St. Lucia, and possibly St. Vincent, appear to have each a very small endemic element."

Grenada.—The collections made by MR. SHERRING at Grenada consist of nearly 6000 specimens of vascular Cryptogams, and about 1000 specimens of Phanerogams. The number of species of Ferns is about 140, and of these two are new, viz., *Alsophila Elliottii*, BAKER and *Acrostichum Sherringii*, BAKER. The Phanerogams have not yet been worked out. Sixty species of Ferns were previously known from Grenada from collections made by Mr. G. R. MORRAY, F.L.S., and Mr. W. R. ELLIOTT. MR. SHERRING has increased this number to 140. The species of greatest interest, other than those known to be new, are *Asplenium Godmani*, BAKER, recently found in St. Vincent; *Polypodium Hartii*, JENMAN, first described in 1886, and known only in the mountains of Jamaica and Dominica; and *Acrostichum Aubertii*, widely spread in continental America, but new to the West Indies. Other interesting plants collected by MR. SHERRING are *Schizæa fluminensis*, MIERS, new to the West Indies, but believed to be only a shade variety of *S. dichotoma*, and *Danæa polymorpha*, LEFRIEU, a critical form of which but little is known.

PROPOSED GARDENERS' INSTITUTE FOR NEWCASTLE.—At a meeting of the Newcastle and District Horticultural Mutual Improvement Society held at the Lit. and Phil. Inst. under the chairmanship of Mr. HESLOP, the committee, per Mr. J. HOOD, jun., Hon. Sec., reported in favour of establishing a Gardeners' Educational Institute in Newcastle.

M. CRÉPIN.—The Director of the Botanic Garden at Brussels, the main-spring of the Royal Botanic Society of Belgium, whose quarter-of-a-century of work was, as we mentioned in our last issue, celebrated on the 6th inst., at Brussels, is well known by his excellent manual of the Belgian flora now in its fifth edition, by his admirable *Manuel du Botaniste*, which should be in the hands of all botanical students, and particularly by his numerous publications on the genus *Rosa*—one of which, a most acceptable summary, was first published in the *Journal of the Royal Horticultural Society* on the occasion of the Rose Conference in 1889. In addition, M. CRÉPIN has been an ardent student of fossil botany. These and other services to botany and to horticulture were alluded to by Professor GRAVIS, of Liège, who presided at the meeting to which we have already alluded—a meeting at which a "Prix Crépin" was established. The Minister of Agriculture endorsed Professor Gravis' eulogium, and

M. DOUCET called attention to the services rendered by M. CRÉPIN to the Botanic Garden at Brussels since the period of his appointment, in 1876. M. DE SÉLYS LONGCHAMPS, speaking on behalf of the Academy of Sciences, echoed the praises that had been uttered by other speakers, whilst Professor BERTRAND, of Liège, became the interpreter for the foreign botanists desirous of adding their testimony to the value of the work of M. CRÉPIN. In his reply, M. CRÉPIN alluded to the years he had passed in the School of Horticulture of Ghent, and the advantages he had received from such men as DOMORTIER and VAN HOUTTE. The banquet was necessarily to a large extent a repetition of the morning's formal proceedings, but a dramatic touch was afforded by the Minister of Agriculture affixing to the breast of M. CRÉPIN, the insignia of Officer of the Order of Leopold. This was received, our correspondent says, with "explosions of enthusiasm, and frenzied applause"—it was after dinner! Count KEACHOVE DE DENTERGHEM presented, in the name of the staff of the *Revue de l'Horticulture Belge*, of which M. CRÉPIN is an old contributor, a magnificent bouquet. That is the way things of this kind are done in Belgium. We cannot equal our friends on the other side of the Channel in manifestations of this kind.

MR. W. J. GRANT.—We greatly regret to learn that Mr. W. J. GRANT, whose appointment by the Monmouthshire County Council to superintend the Departments of Agriculture, Horticulture, and Forestry, was notified in our issue for August 15 last, met with severe injuries on the railway near Monmouth, having been struck by an engine, fracturing the base of his skull.

THE TRADE IN FRUIT BETWEEN FRANCE AND GERMANY.—We read in the trade notices in MÜLLER'S *Gärtner Zeitung*, that, according to a recent official statement, the total imports into France of table fruit for the year 1889 is valued at 64,000,000 fr., and the imports in 1890 at 83,000,000 fr. Against these figures, there was an exportation of 32,000,000 fr. in 1889, and 38,000,000 in 1890. German imports of table fruits amounted to 23,261 double cwt., in value 673,391 fr., whilst France exported to Germany 52,972 double cwt., in value 3,124,733 fr. The fruit imported into France costing per double cwt. 30 fr., whilst that exported to Germany was reckoned at 60 fr.

GARDEN DIRECTORIES.—Two of these indispensable handbooks have reached us, viz., the *Horticultural Directory and Year Book for 1892*, from the office of our contemporary, the *Journal of Horticulture*, 171, Fleet Street; and the *Garden Annual and Almanack*, from the Garden Office, 37, Southampton Street, Strand. Both contain very complete lists of gardens, with the names of the gardeners who have charge of them. Also lists of the new plants that have received Certificates from the various large societies during 1891, and much information that is of value to all who may be engaged in horticulture and horticultural journalism.

THE MIDLAND CARNATION AND PICOTEE SOCIETY.—The committee have issued their first annual report, in which they say that the prospects of the Society for 1892 are most encouraging. The committee's great hope and ambition is to have an annual exhibition that shall be one of the most representative in the kingdom, and that everything possible shall be done to encourage the small as well as the large growers. They request, in consequence, suggestions for any improvement to the present existing state of things. The Botanical Society of Birmingham have offered to hold the show again in their gardens. The Society have under consideration the desirability of giving special certificates to all meritorious honorary exhibits, also silver and bronze medals for any exhibits of superior merit, somewhat after the style of those of the Royal Horticultural Society of London; but as these will only be awarded where the exhibits distinctly deserve it, the committee hope that these medals may be

looked upon as of great value from an exhibitor's point of view.

THE BOTANICAL LIBRARY AT KEW.—In the current number of the *Bookworm* is a lengthy account of the library at Kew, from which, when the exigencies of our space permit, we may be tempted to make some extracts.

IMPATIENS HOOKERI.—The above plant, of which a shoot and flowers were kindly sent for our inspection by the head gardener at Chatsworth, has some value as a decorative plant at this season. Mr. N. E. BROWN, of the Royal Gardens, Kew, to whom we forwarded the flowers and shoot of the plant, in his reply to our note, says:—"The name is correct, but I do not remember to have seen it in flower before; probably it would do so freely enough, if kept pretty dry, in a dry hot atmosphere, and exposed to the light as much as possible for a few weeks each year."

TECHNICAL EDUCATION.—It may interest some of our readers to know that Messrs. NEWTON & CO., the opticians of Fleet Street, have in course of preparation sets of slides for lanterns for the use of lecturers giving technical instruction in various subjects.

"BOTANICAL MAGAZINE."—The 117th volume now completed is dedicated by its Editor, Sir JOSEPH HOOKER, to Sir MOUNTSTEWART GRANT-DUFF, latterly Governor of Madras, and who when Under-Secretary of State for India, and afterwards for the Colonies, rendered important services to botany and horticulture.

— The December number contains figures of the following plants:—

Agave albicans, t. 7207.—Leaves oblanceolate mucronate, finely toothed, with a central stalk bearing a dense cylindrical tuft of purplish flowers.

Bolbophyllum macranthum, t. 7208.—A curious species, with creeping rhizome, oblong-acute leaves, one-flowered peduncles, flowers more than 2 inches in largest diameter: flat segments, lanceolate, spotted; lip narrow, curved, jointed in the middle. Mr. RIDLEY gives an interesting account of the method of fertilisation, of which a summary is here given.

Trochetia Blackburniana, t. 7209.—A highly interesting shrub, with oblong, strongly-ribbed leaves and stalked flowers, like those of an *Abutilon* in form, white, deeply tipped with crimson. The plant is a native of Mauritius, in the Indian Ocean, its congeners being found only in Madagascar and in St. Helena, in the Atlantic Ocean. The species are thus separated by 2000 miles of ocean and the interposed continent of Africa. How the distribution was effected, and whether any species are or were once in existence in the intermediate territory, are matters for speculation. This curious plant flowered in the garden of Trinity College, Dublin, under the care of Mr. BURRIDGE.

Veronica Lavanduliana, t. 7210.—A shrubby species, figured in *Gardeners' Chronicle* of the present year, i., p. 934, fig. 154, from specimens grown by Mr. BURRIDGE in the Trinity College Botanic Garden, Dublin.

Arisema anomalum, t. 7211.—A species with a perennial root-stock, solitary, three to five-foliolate leaves, and stalked inflorescence, with a purplish spathe marked with white veins. See *Gardeners' Chronicle*, 1890, vol. i., p. 321.

AMBROSE BALFE—It is with much regret that we have to chronicle the death of this gentleman, which took place at his residence, 28, Westland Row, Dublin, on the 7th inst., at the age of seventy-seven. Mr. BALFE was for many years the genial and efficient Secretary of the Royal Horticultural Society of Ireland, and also for a considerable period he edited the horticultural columns of the *Irish Farmers' Gazette*. Originally educated for the church, he elected gardening as his profession, and, as many other celebrated horticulturists have done, he graduated in the College Botanical Gardens, at Ball's Bridge. Here he met as young

men, or in their prime, many who in after life were most successful, such as the late Dr. DAVID MOORE, Mr. CHARLES MOORE, his brother, now Director of the Sydney Botanical Gardens; the late Dr. J. T. MACKAY (*Mackaya bella*); FRASEN, the landscape gardener and author of a capital road-map of Ireland; WILKIE, then Superintendent of the Phoenix Park; the late Mr. NINIAN NIVEN; Professor WM. HARVEY, M.D.; Mr. JOHN BAIN, A.L.S., and many others. The late Archbishop WHATELY was a constant visitor to the garden in those days, and many are the stories still told of his witty and original manner. Mr. BALFE was a sound botanist and gardener, and took many prizes during the palmy horticultural shows held in the Rotunda in former years. He was one of the first observers to direct attention to the sclerotia of the Potato fungus. He had retired from the secretaryship of the Royal Horticultural Society of Ireland some time previous to his death, and his loss will be much regretted by all who knew and respected him—and they were many.

THE PHARMACEUTICAL SOCIETY.—The first evening meeting of the society in Edinburgh was marked by an excellent address from Professor BAYLEY BALFOUR. He took as his subject "Botanical Enterprise in Relation to Pharmacology." After referring to the origin and functions of botanic gardens, and their relation to Pharmacy, the Professor gave an admirable summary of the work done at Kew in collecting and diffusing not only useful information but also the plants themselves. The story has often been told with admiration in these columns, and we are pleased to find in other quarters so just an appreciation of the work of Kew in departments that the general public was not of.

NEW BOUQUET-HOLDER.—Messrs. J. TAVERNER & Co., of Mount Street, Grosvenor Square, have introduced a new holder for an opera bouquet, of which a figure is given in the *Queen*. It is made flat on one side, so that it can be laid on an opera-box cushion or elsewhere without injury to the flowers. The holder is in shape like a "sugar-paper," slightly cut down at the top in front to form a sloped aperture for the flowers, and left high at the back to support them.

IRON v. WOOD FOR GLASSHOUSES.—The tendency in America, as we learn from *Garden and Forest*, is steadily toward the most durable material for greenhouses. The fear of losing heat by radiation from metal is considered groundless.

THE LATE GALES.—Much damage has been done in parks and gardens in the western and southern parts of the country. In South Wales, the force of the wind approached that of a tropical cyclone. In one case, a glass-house 350 feet by 20 feet, erected last spring, was, with several others, completely overturned by the force of the wind. The big house contained 6000 flowering Chrysanthemums, which of course were ruined. At Sion, the Duke of NORTHUMBERLAND's residence in Brentford, much damage was done, and amongst other trees blown down was the old *Sophora japonica*, which had long been in a crippled condition, and bound together with about one ton of iron chains, bands, &c.

HORTICULTURAL CLUB.—The periodical monthly meeting was held at the Club-rooms, Hotel Windsor, on December 8, the chair being occupied by Mr. JOHN LEE. There was a good attendance, and amongst those present were the Rev. W. WILES, the Rev. F. H. GALE, Messrs. CHEAL, DRURY, C. E. PEARSON, A. H. PEARSON, &c. The Rev. W. WILES gave an interesting lecture on "Fruit Trees in Pots."

ROYAL HORTICULTURAL SOCIETY'S MEETINGS IN 1892.—Following are the dates of the committee meetings and shows for the forthcoming year:—January 12; February 9, annual general meeting; March 8 and 22; April 12, April 19 (Auricula and Primula show); May 3 and 17; 25 and 26 (Temple Show); June 7; 21 (Rose show); July 12; 26

(Carnation and Picotee show); August 9; 23 and 24 (exhibition and conference on Begonias, Apricots, and Plums at Chiswick); September 6 and 20; October 4 and 18; November 1 and 15, December 13.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The fifty-third annual meeting will be held at SIMPSON'S, 101, Strand, on Friday, January 15, at 3 P.M., for the purpose of receiving the annual report and of electing seven candidates. Six others will be placed of right on the list by virtue of their previous subscriptions. We regret to find that the total number of candidates is not less than thirty-five, whilst as above stated, only thirteen can be elected. The necessity for increased support is thus made manifest, and we most earnestly hope it will be forthcoming. The Secretary's address is G. J. INGRAM, Esq., 50, Parliament Street, London, S.W.

PUBLICATIONS RECEIVED.—*Travels and Adventures of an Orchid Hunter*, by Albert Millican. Cassell & Co., Limited, London.—*The Miniatur Fruit Garden and Modern Orchard*, by Thomas Rivers and T. Francis Rivers. Longman, Green & Co., London.—*La Rose: Histoire et Culture*, par J. BEL, Paris Librairie. J. B. BAILLIÈRE ET FILS.

PLANT PORTRAITS.

- AERIDES SUAVISSIMUM*, *Lindenia*, t. 307.
CROTON MADAME LUCIEN LINDEN, *Illustration Horticole*, t. 140. A broad-leaved form, with green leaves and yellow veins, and flushed with red on the under-surface.
CYRIPEDIUM DACTHYLI var. *POGGIO GHERARDO*, *Bulletin d. R. Soc. Toscana di Orticol.*, t. xi, 1891.
DISA GRANDIFLORA, *Lindenia*, t. 308.
DORYANTHES PALMERI, *Revue Horticole*, December 1.
ERYTHRINA CRISTA-GALLI, *Garden*, December 5.
LILIA SCHRODERI var. *DELICATA*, *Illustration Horticole*, t. 139.
PELLEA PRINGLEI, Davenport, sp. nov., Mexico. *Garden and Forest*, November 25, 1891.

NOTICES OF BOOKS.

BRITISH FUNGI: PHYCOMYCETES AND USTILAGINEÆ. By George Masee. (L. Reeve & Co.)

The two groups of which Mr. Masee has here undertaken to give an account are of interest alike to the botanist and to the cultivator. They comprise many forms which are most injurious, e.g., the Potato mould (*Phytophthora*). The time has gone by when the mere inspection of a fungus by the aid of a pocket lens or even of a compound microscope was deemed sufficient. Nowadays it is requisite to trace the life history of every species, from its earliest stage to the period of maturity. In many cases there is no direct continuity of form and appearance, but the plant in one stage of its growth is totally different to what it is at another; moreover, its habits and mode of life are correspondingly different. To study such plants successfully, it is therefore needful to cultivate them and watch their progress in every stage and under every variety of condition. All this has only been made out, broadly speaking, within the last quarter of a century, and, of course, only a fragmentary portion has yet been studied in this exhaustive manner. To those who have to deal with the numerous diseases of plants, to prevent or palliate the injuries inflicted by parasitic fungi, such a study is essential. The facts, as, for instance, that a mould like a *Botrytis* can have any genetic relation with a *Peziza*, are so surprising, that we need not wonder if they appear incredible to some folk, but as the facts become more and more established and a new generation arises, to whom they will be familiar, so we may confidently expect that the power of dealing with these pests will be strengthened. Mr. Masee's little book, though it deals with a limited portion only of the subject, will serve as an excellent introduction, and as such we heartily commend it to the student.

THE EVOLUTION OF PLANT-LIFE, LOWER FORMS.

By G. Massee. (Methuen & Co., 18, Bury Street, London.)

In this little work, after a preliminary chapter dealing with the general characteristics of plants, the author proceeds to show what has been and is the probable course of development from simple to complex. He begins with the Mycetozoa or Myxomycetes, a group which, nevertheless, he concurs with others in assigning to the animal, rather than to the vegetable kingdom. Of almost equally doubtful position are the protophytes or bacteria and their allies. From these we pass to groups whose nature is not doubtful, such as the Diatoms, the Protococcus, and from these we proceed gradually upwards to the brown Seaweeds, which are distinguished by the presence in their tissues of sieve-tubes and sieve-plates, such as occur in the bast of higher-flowering plants. As to lichens, the author adopts freely the notion of the interdependence of the fungus and the alga, the alga supplying from its chlorophyll what the fungus otherwise would not be able to obtain. A "perfect balance and division of labour between two originally distinct plants, to form a third possessing marked peculiarities of its own, with a corresponding loss of the individuality of its components, suggests to the mind the analogy with the formation of a chemical compound." Whether this relation is anything more than a superficial analogy remains to be seen.

The author, as will be seen, ranges the orders in the sequence in which he presumes them to have originated, but beyond this he does not offer much evidence from embryology and other sources as to the actual course of events. Nevertheless, Mr. Massee's book will be very serviceable to those who desire to obtain a general notion of the principal groups of plants and their sequence.

MANIPULATIONS DE BOTANIQUE MÉDICALE ET PHARMACEUTIQUE. Par MM. J. Heraud et Valère Bonnet. (Paris: Baillière.)

This work, though especially addressed to druggists and doctors, may also be recommended to botanists in general, whilst it is not without interest even to horticulturalists. The introductory chapter gives a good account of the minute anatomy of plants, and of the manner in which it should be studied by microscopical and by chemical means. Then follow details concerning the minute anatomy of the roots and other organs of plants, illustrated by excellent woodcuts. The latter half of the volume is filled with special details relating to the anatomical structure of drugs in common use, such as Sarsaparilla, Valerian Jalap, &c., the descriptions being supplemented by excellent plates, showing the minute structure. These are useful in affording means for the detection of adulteration, and are of great importance with reference to the conditions under which plants grow, and therefore as to the manner in which they can most effectively be cultivated.

SELECT EXTRA-TROPICAL PLANTS READILY ELIGIBLE FOR INDUSTRIAL CULTURE OR NATURALISATION. By Baron Ferdinand von Mueller, K.C.M.G., &c. (Melbourne: Printed for the Victorian Government by C. Troedel & Co.). Price, 5s.

The eighth edition of a book, which has been translated into German and French, adapted for Indian climates and modified for that of New South Wales, needs no recommendation. The mere mention of a re-issue is all sufficient. A book of this character, though to a large extent a compilation, is one which demands unusual knowledge and consummate judgment on the part of the compiler. Its great success indicates that these requisitions have been met. Indeed, it is a book which should not only form part of the library of every cultivator, but one which should be on the shelves of all those in any way interested in economic botany. As a condensed encyclopædia of the latter subject, the book, within its prescribed limits, has a value for a class of readers as numerous, or more

so, than those for whom it was more immediately destined. Those plants which are of special interest or value are marked by an asterisk. In all, 2485 plants are mentioned, besides very many others, of which incidental mention only is made. In the appendices, details are given as to the temperature and rainfall in various parts of the colony of Victoria. Lists are also supplied of the genera, arranged according to the purposes for which they are used, alimentary, textile, constructive, medicinal, and so on. A systematic index is also provided, in which the genera are arranged under their respective natural orders. A list of synonyms and a geographical index follow, and these are succeeded by detailed lists of plants which furnish a crop in one, two, three, or more years, as the case may be. Plants adapted for very cold or very dry regions are separately enumerated, whilst the work ends with an index of vernacular names. The mere mention of some of the contents of this volume is sufficient to justify our remarks as to its utility. But its author is not yet satisfied, nor, indeed, would he or could he ever be. Accordingly, we find him, while approaching the eighth decade of his life, hoping not, indeed, that he may see "many more editions of this work brought up to the newest standard," but that he may "perhaps still be able to publish one more edition before passing away." To this end he solicits that assistance which all who are able will cheerfully give to so valiant and indefatigable a worker as Sir Ferdinand von Mueller.

BRITISH EDIBLE FUNGI: HOW TO DISTINGUISH AND HOW TO COOK THEM. By M. C. Cooke, LL.D. (Kegan Paul, Trench, Trubner & Co.)

Thanks to the zeal and energy of fungus-hunters, public interest in these plants is increasing, and people are manifesting that interest in a practical fashion. The necessity for caution in discriminating the wholesome species from the poisonous ones has had the good effect of stimulating observation and intelligence. Some not inconsiderable risk is thus compensated for by the increase and diffusion of knowledge. Sixty-five species are mentioned by Dr. Cooke as having been tried by him, so that he is a guide who may be safely followed on the score of practical experience. As to scientific competency, Dr. Cooke is too well known to fungus-lovers for any doubt to arise on that score. In the present book, the explanations and descriptions are given with the clearness and authoritativeness begot of long experience.

While certain species are unmistakably injurious, it is open to doubt whether in many other cases the injurious effects are not due to the method of cooking. Excess of butter and toughness of texture alike create symptoms of indigestion, as we had lately the opportunity of observing in the case of the Horse Mushroom, which is universally allowed to be harmless, but which if badly cooked, or too freely partaken of, is capable of inducing unpleasant symptoms.

With some experience of edible fungi, though less in extent than Dr. Cooke's, we venture to think the forced Mushroom of the gardens is by far the best of all the tribe. Next in goodness we should class the great white puff-ball, *Bovista gigantea*, which is so unmistakable that a blind man could not mistake it, and which has a peculiarly delicate flavour. *Agaricus procerus* and champignons are by no means to be despised, but some of the fungi over which enthusiasts expend their superlatives are, to our palate, not worth the trouble entailed in cooking them—for instance, the beef-steak fungus. But this is only a matter of individual opinion. We should gladly hear of the more general use of fungi for food, provided the picking out of the wholesome species could be done with facility. The present book will serve that purpose excellently, for the descriptions are clear, and great care has been taken to guard against errors and mistaken identifications. The text is, moreover, supplemented by several excellent coloured illustrations, concerning which we have only to express our regret that no scale of proportion is given. About the time when this article was penned, we had before us a specimen of *Agaricus*

procerus three times the size of the one figured on tab. 2, inasmuch that we had difficulty in persuading others that the species was really the same.

Ample details are given as to the various methods of cooking fungi; the necessary preliminaries of collecting them are also dealt with, the author giving full information as to the locality and season at which particular species may be expected. A good index completes what we may commend as an interesting and trustworthy book.

FÖRSTLICHE BOTANIK. Von Frank Schwarz. (Forest Botany.) (Berlin: Paul Parey.)

This is a compact volume, devoted to the subject of forest botany, and comprising in the introductory chapters details concerning the structure of plants and the morphology of their organs, copiously illustrated with excellent woodcuts. Among them we find, at p. 69, an illustration of the perforation of a young Oak plant by the rhizomes of the common Twitch, *Taticum repens*. We have frequently seen such a transfixion in Potatos, but have not observed them in seedling Oaks. The manner in which this was effected has also recently been elucidated. The construction of the wood, of course, receives special attention. A separate section is devoted to the physiology of trees, and another to wounds and injuries from frosts, insects, fungi, &c. A general view of the vegetable kingdom is then given, beginning with the fungi, and going upwards, the illustrations being naturally such as have special reference to forestry. The illustrations in this part of the volume are specially good, and render the volume of value even to those who do not read German. The geographical distribution of plants, and the climatal conditions under which they grow, are treated of at some length. The chapter devoted to this subject is followed by a series of synoptical tables, constructed for the purpose of facilitating the recognition of trees by means of their leaves or buds. The seedling plants are duly described and figured, and the work ends with a description of the appearances of the wood in the principal forest trees. A copious index completes a book of great value to the student of forestry.

A MARKET-PLANT COLONY.

Amongst the earliest settlers of what has now become one of the most noted market-plant, flower, and fruit-producing districts or colonies about London, that of Hampton, Middlesex, is Mr. Denning, an well known amongst gardeners some years ago, and still a prominent member of the Floral Committee. I called upon him the other day, finding his place eventually, after some difficulty, the chief of which was found in the state of the roads and lanes, such as would have disgraced a backwoods' trail, and was absolutely inconceivable in a suburban district, under that modern governmental blessing in disguise—a Local Board. About Mr. Denning's neighbourhood have clustered several other not unknown gardeners, amongst whom are Mr. Horsefield, formerly of Heytesbury; Mr. Bowlea, of Richmond; Mr. Heickle, of Twickenham; and others. "We have just started to day the beginning of the twenty-ninth market-plant and flower-growing establishment on this Tangley Park side of the Thames Valley Railway," said Mr. Denning, "and all these have sprung up within very few years." Then over on the New Hampton side of the line are many others, so that it is no exaggeration to say that fully fifty of these market-places, many of them having very extensive areas of glass, are now within the boundary of Hampton parish. The Cockney term, "happy Hampton," has now lost its old significance, but it does seem to present to the market-grower a sort of happy hunting-ground for his particular purpose. I asked Mr. Denning to give a reason for this particular flocking together of birds of a feather, and he said that he thought it was due chiefly to the excellent atmosphere of the locality. Hampton is, as the crow flies, perhaps not more than from 10 to 12 miles from the most populous western and

southern metropolitan districts, and under ordinary circumstances would have between it and London various populous small towns and suburbs; but it so happens that, between Hampton and London, there exists, and will so remain for a long time, various great open spaces, such as Bushy Park, Hampton Court Park, Richmond Great and Home Parks, and Kew Gardens, and more to the right, Wimbledon Common; so that, whatsoever of a foul or smoky atmosphere may pass south or south-west from London, is, in passing over these wide, open areas, materially purified, hence the Hampton fogs are not prone to be nearly so black or sooty as they are in other districts. Of course, the theory may be taken for what it is worth. One thing, however, seems certain, and it is, that the district is endowed with a fine deep, retentive soil; and, judging by the awful condition of what seemed to be cinder-dressed roads, gravel must be at a premium. However, there is the fact, that the district is being literally settled by market growers, and whether there be room in the market for more of plants, flowers, and fruits, or not, there is area at Hampton for plenty more of plant and flower establishments. Mr. Denning has eight large span-houses, all devoted to the produc-

tion of flowers for cutting—that is his particular forte. It seems generally to be the case, that at Hampton particular fortes are found to pay best. The latest of the eight houses just erected, 65 feet by 20 feet, and a light graceful span, is to be specially employed for winter-forcing of bulbs, Spiræas, Lilacs—in fact, of anything which will force well and give good results. This house has in it not fewer than twelve rows of 4-inch piping, to furnish the heat-making with, and turns and feeders about 600 feet, enough to maintain a very high-forcing temperature with ease. Mr. Denning, who does all his own building and heating, holds that it is far wiser to have an abundance of piping, so as to maintain a high temperature in the coldest of weather, than to be firing hard all night, and living in a state of anxiety lest the boilers should fail. The boilers used are saddles, but set so that the flues carry the smoke first over and beneath the boilers, so that all the warmth from the fire is fully utilised. Fires banked up at 9.30 p.m. in the hardest of weather keep up the required warmth all the night without difficulty. In the new house there is a block of four pipes along the centre, and the plants were either stood on the floor, or on a stage above. On either side of the house brick-pits have been made, about 3 feet wide. In the bottom of each run a couple of pipes to give bottom-heat, and at



FIG. 108.—CENTAUREA MARGARITÆ: FLOWERS, PURE WHITE.

the back, nearly up to the glass, are two other pipes. Such a house will force flowers, grow pot-Vines, Melons, Orchids, or anything needing a high tropical temperature. There is a huge cistern in the floor of the house also, for plenty of tepid water is essential. In another house there was a large batch of Japanese Chrysanthemum Fulton, a rich deep yellow. These plants bloom most profusely rather later than the general run of yellows, and the flowers are highly favoured in the market. Anything more charming for domestic floral decoration than bunches of Fulton can hardly be conceived. Full flowers are grown, too, but not yet very largely, and C. Mr. H. Cannell is being tried, although its incurved flowers do not look so pleasing as are those of C. Fulton. Of white Chrysanthemums, the sorts grown are Elaine, Lady Lawrence, practically a white incurved Japanese, but exceedingly fine and pleasing; and a tinted white sport, which Mr. Denning has obtained, but not yet named, not unlike a very broad-petalled Elaine, that produces fine clusters and blooms profusely through December; this will, no doubt, in time make a standard Christmas blooming variety. Gardenias are very finely done, nearly an entire house is devoted to these, the centre being filled with huge

plants reaching to the roof in 14-inch pots, in splendid condition, and covered with flowering-buds. These plants are kept from five to six years, and then are succeeded by younger ones, of which there is a fine batch in 9-inch pots. Callas, too, are wonderfully well done, a big batch now flowering freely. I noticed that all the plants were stood upon other inverted pots, and Mr. Denning said, when asked for an explanation, that it was difficult to give a practical reason for the procedure, but that he had always found the plants to thrive better when elevated from the floor than when stood upon it. Winter-blooming Carnations are largely grown, the best being the primrose-coloured Andalusia, a pure white sport from it, and wonderfully free; Miss Jolliffe, and the deep scarlet Lucifer. Raspail; double-scarlet Pelargoniums, in 6-inch pots, form a perfect mass of foliage and flowers; and the Ivy-leaved double-flowered Pelargonium, Madame Carousse, trained overhead just at the doors of several houses, gives very beautiful bloom all the year round. Paper-white Narcissi, planted thickly in boxes, stand on the floor of one house blooming abundantly, so also do Tuberoses; and of Tea Roses the best are Niphetos, and Souvenir de S. A. Prince, white, and the ever-beautiful pink Catherine Mermet, which is largely planted out; Eucharis amazonica is well done; and of

Bouvardias the rich-coloured President Cleveland is the most favoured, and yet in abundant bloom.

Stephanotis floribunda grows most freely, and could, if needed, fill houses in no time. There seems to be no evidence of scale or other parasite about this plant, or any other indeed, Mr. Denning laughingly asserts, that such creatures are not acclimatised at Hampton. He has gone in for numerous Orchids also of late, having a big collection, but still in small pots, of Dendrobes, Cattleyas, &c., and some big pieces of Coelogynes. These give a good return in bloom in proper season. In one house were growing Tomato plants, some 4 feet in height, and not only blooming well, but carrying fruits, which should be ripe at Christmas. It looked as if this lot of plants would thrive well. I noticed that they were not put out on to any made border, but planted in holes made in the hard raised soil, on which plants had been standing all the summer, that may be conducive to the present fruitful aspect of the plants. A. D.

CENTAUREA MARGARITÆ.

THROUGH the kindness of Messrs. DAMIAN & Co., San Giovanni a Teduccio, near Naples, we are enabled to portray a very pretty novelty in the form of a variety of Centaurea odorata, with pure white fragrant blossoms. The plant is an annual or biennial, according to treatment, and offers excellent material for pot culture, beds, and bouquets (fig. 108).

HOME CORRESPONDENCE.

ELMS FOR AVENUES.—In your Notice to Correspondents in the *Gardeners' Chronicle* for December 12, I notice the names of several varieties of Elms for an avenue. Your correspondent, I think, omitted to name the Chichester, or as I believe, it is sometimes called the Cornish Elm. During the past autumn I was staying at Eastbourne, and was much struck with the Elm avenue in the streets and also in Devonshire Park, this I took to be the Chichester Elm, and if I am right in my judgment I consider it one of the very best for planting in towns, or for avenues generally. J. B.

— I would suggest to "J. M." that a great number of varieties of Elms planted in the same avenue, would, when they came to maturity, show considerable differences in the width of head and height, and prove very unsightly. "J. M." can have variety—but I would recommend him to plant either a collection of the large and wide-branching varieties, or choose the smaller Elms. For an avenue of large and spreading trees, I would recommend *Ulmus campestris*, *U. montana* the Wych Elm, the Huntingdon, and *U. alata* the Winged Elm. The smaller species of Elm which grow into pyramidal form are *Ulmus stricta*, Cornish Elm (in some nurseries called the Jersey Elm), Dutch Elm, and *U. parvifolia*, a small-leaved variety. I have planted a number of avenues of Elms, and if I can render "J. M." any assistance in this matter, I have requested the Editor to give him my name and address. Forster, Hereford.

WINTER HELIOTROPE.—Coltsfoot, *Tussilago fragrans*, or, as it is sometimes called, *Petasites fragrans*, is flowering uncommonly well on a border with an eastern aspect, where there are clumps of it about 8 feet square. In our heavy soil it thrives amazingly, and in a mild autumn flowers abundantly. The present seems to have suited it well; it does not mind rain, although the flowers look a bit bedraggled; a few hours' of drying wind soon restores them. It is one of the few flowers to be had out-of-doors at this season, and for that reason deserves to be planted about a garden. It will succeed fairly well under the shade of tall deciduous trees, but, of course, it is much better in the open. E. Molyneux, Swanmore.

CHRYSANTHEMUMS.—We send you a few flowers, in different stages of blooming, of a Chrysanthemum we have growing here. The parent-flower is deep yellow, called with us "Golden Horn one." It sported last year, and we have since grown the sport from cuttings, and the plants have continued true to the sport. You will observe the young flowers come tinted yellow, expanding as they grow into pinkish-white. We think it a very pretty sport,

but will be glad to have your opinion of it, and whether it is worth propagating. *R. & A. M.* [A pretty Pompon, which we should think is worth propagating. Ed.]

DR. HOGG PEACH.—I planted in the year 1885, in a midseason house, a tree of Dr. Hogg Peach, which grew luxuriantly, but set a few fruits in 1888 and 1889, which dropped in stoning. I adopted the usual treatment in such cases, and got it to carry in 1890 about thirty-six fruits, which were gathered at the end of August, and of which one weighed 17 oz., and several over 12 oz.; the flavour, however, was not very good. This last season it set its fruits fairly well, and these I reduced to sixty, at about 1 foot apart. They appeared fine healthy fruits of about 6 to 12 oz. weight, but not one of them ripened. I cut several right through, and found the flesh spongy, tough, and discoloured, and consequently worthless. Should any reader of the *Gardeners' Chronicle* have grown this variety, I should feel obliged if he will kindly give his opinion of its merits and failings. I may state that its neighbour, a Noblesse, had fruit which for size and flavour could not be easily beaten. I read with interest the correspondence of Mr. Divers, Mr. Shepherd, and others this year on the subject of Peach growing, and perhaps they will kindly give me their valuable advice. *J. Blayne, Huntley Manor Gardens, Gloucester.*

LARGE PITMASTON DUCHESS PEARS.—Your correspondent, of Barton Seagrave, writes of some heavy fruit of the above Pears, and we have here two trees on a wall facing south-west, from which were gathered on October 17 ninety-five fruits from one, and forty from the other. The six largest weighed 8 lb. 6½ oz., two of them turning the scale at 3 lb. One measured 7½ inches, the other over 7 inches in length. The total weight of the 135 fruit was 125 lb. The trees were planted in 1881 by Mr. Howe, the late gardener, who exhibited fruit from them, and secured 1st prize several years. The fruit from one of the trees resembles the old Duchess in form and colour, but in flavour they are identical. The trees received last autumn copious supplies of manure-water. *J. Howard, Benham Gardens.*

— I have two trees of this variety of Pear, one of which was planted three years ago. The tree produced this year 120 good fruits, of which six weighed 6½ lb., and some were sold to a local fruiterer, who got 7d. each for them. In planting my trees, I always put some brickbats or other hard material at the bottom of the hole, and keep the roots as near the surface as possible. Our soil is about 18 inches deep, resting on gravel. This tree is planted by the side of a walk with an arched wire-trellis over it, the trees being tied to the trellis, one side having Pears, the other Apples. A fruit of Warner's King growing on this trellis weighed 14 oz. *J. Currey, Milford Hill, Salisbury.*

BOCCONIA CORDATA.—Judging by recent communications to the columns of the *Gardeners' Chronicle*, it would appear there are some who have a doubt respecting the perfect hardiness of the above plant. This, however, is set at rest by the editorial footnote at p. 651, and if any further evidence were needed I may be allowed to state that with a twenty years' experience of it, in all sorts and conditions of soil, I do not remember a single death from frost or cold. It is one of the handsomest herbaceous plants that we possess, and which everyone may plant with perfect safety on any exposure. Given fair plants to begin with, it is but little trouble to the cultivator after, and where needed for standing alone on the lawn, &c., for which it is capitally adapted, a bed fully 6 feet across should be given it; and by planting roots about 18 inches apart, an effective group would be secured. It may interest some at least of your readers to know that it may be increased rapidly from root cuttings, indeed the main roots are thickly furnished with buds, and if these main roots are detached during winter, cut into lengths of an inch or so, and placed in slight warmth, plants may be secured by the end of April, ready, if they have been grown on freely, to plant in the open ground. The inclination of this plant to break freely from the root is not generally known, as they do not send forth stolons as freely as many things while attached to the parent plant; those, however, who transplant it periodically for trade purposes, are familiar enough with it. To me it appears as though the main growths by their very vigour keep these underground buds in subjection; and I arrive at my conclusions from the fact that, whenever I have had occasion to

remove it to another bed, young plants quickly and freely spring up in the old place, and it is hardly possible to get out all the roots as they descend so deeply, and are very brittle. *E. Jenkins.*

HUMMING-BIRD HAWK-MOTH.—For years I have found insect-life a pleasant study, and seeing that the daily occupation of a gardener brings him in contact with insects, some of which are enemies, and others friends, it ought to be part of his daily avocation to watch their habits, and so learn to discriminate between friends and foes. It does not need much argument to convince the gardener that he has constantly to be on the alert in case some of them steal a march on him, and so ruin his crops or his choicest plants. For years I had collected moths and other insects, but it was not until I found the caterpillar of the death's-head moth feeding on the Potato that the idea entered into my head of breeding them and insects in general. Boxes were filled with light soil and a covering of glass, and whenever a caterpillar of any kind was found on any plant it was carefully brought home, placed in its box, and fed till it changed into the perfect insect in the following month or year as the case might be. When we remember that half the lovely fruits which we enjoy in the garden are probably the result of a cross brought about by accidental insect fertilisation, small wonder if we give the subject a share of our attention. Apart from this, one is struck with the habits of many insects, and the more one learns, the less he thinks he knows. In this county we have a great variety of wild flowers, and consequently a large field for the entomologist. In fine autumns one may see a good number of the moth alluded to above, and at one of our cottagers' shows, a nurseryman staged some Phloxes which attracted the moth, and, notwithstanding its shyness, kept there all the afternoon, flying away, and returning again and again to its favourite flower. *J. Rust, Eridge Castle, Sussex.*

A BROKEN TRIO.—In Bushey Park, and not very far from the famous Chestnut avenue, for many years stood a trio of huge evergreen Oaks. The terrible hurricane of November 11 laid the centre one of three low, but at least it had spent its life fully, for the exposure of the roots revealed the fact that all were dead, and that for a long time the tree had stood erect rather by tolerance than from inherent strength. It was for its kind a giant, and the twins remaining are not less so, whilst one is perhaps the finest individual tree anywhere in the Home counties. I have passed through the park many times in summer when the other trees were in full leaf, and had failed to observe that these huge specimens were evergreen. It is when all deciduous trees are disleafed that the specially fine form and luxuriant foliage of the evergreen Oak shows with effect. The finest of the now standing pair has a noble rounded head, but it is worthy of remark, as showing the power of the sun to attract branches to itself, that fully two-thirds of the head are south of the stem. That defect is evident only when the tree is looked at from the east or west sides. The diameter of the head is just about 70 feet, and it is as lofty as broad. The stem is very clean, with a slight twist in it, and at 8 feet high breaks into a dozen huge limbs or branches. At 3 feet from the ground the stem is about 15 feet in circumference, and the root-area close to the ground is 27 feet. This tree seems to be in rude health, as the growth everywhere about it is full of robustness. How old these huge trees are it would be difficult to say, but very likely they date from Cardinal Wolsey's day. Is there any finer evergreen Oak in the kingdom than the one I have described? *A. D.*

THE MODERN REMEDIES FOR THE POTATO DISEASE.—It is now forty-six years since I first began to read the *Gardeners' Chronicle*, the year when the Potato disease became so general, though I and others had seen it (the disease) two or three years previously, and since which I do not think I have missed seeing the paper one week. What acres of rubbish have been written about the disease since then, and now we are as far off a cure or remedy as forty-six years since. The atmosphere is of too large a volume to treat with any antiseptic. *V. J. Z.* [We do not share our correspondent's opinion; high moulding and the proper use of sulphate of copper are remedial measures full of promise. Ed.]

A DIPTEROUS LARVA DESTRUCTIVE TO CARNATIONS.—A well-known horticultural firm has submitted to me young plants of Carnations and Picotees much damaged by a dipterous larva. In the

first consignment I could find no larva, and put the mischief down to the universal weevil (*Otiorynchus*). A second consignment showed unmistakably that the maggots are the larvae of a dipterous insect, probably of the family Anthomyiidae; if I breed the perfect fly, you shall have the precise identification. The larva feeds in the stem under the crown, and at the base of the leaves, often causing the crown to drop off from the stem, and thus practically destroying the plant. I could only suggest the radical cure of burning the affected plants, or the application of strong insecticides. According to the maggots, the perfect insects should be about the size of the common house-fly, and many of the Anthomyiidae so greatly resemble house-flies as to be commonly mistaken for such. *R. McLachlan, Lewisham, Dec. 11.*

ROCKERIES.—May I just say that I think admiration for Messrs. Backhouse's rockery is a matter of course? But that does not tell us how alpine plants can best be grown in this country. They have a fine collection of frames to rely on at York, and the resources of a splendid nursery at their command. These frames are very analogous to the method I follow. Mr. Corveon can scarcely, I think, have read my letter with much attention. He says "the 'H. E.' system (as he calls it) is not good for some species, and he (Corveon) prefers the little separate rock-pockets, and, above all, the wall-plan." Why, that is just what "H. E." says himself, and, accordingly, he leaves out the *not*. Surely, *Morisia hypogaea*, of Sardinia, which came from the Jardin d'Acclimatation at Geneva, is a drought-loving plant. Nothing could do better than it has done here. The same may be said of other things, which Mr. Corveon takes for granted as having failed. *H. E., Ryde.*

STANDS FOR JAPANESE CHRYSANTHEMUMS.—I quite agree with your correspondent, that a change in the size of the above is most desirable, as the beauty of the largest flowers, as at present shown, is greatly hidden by the unavoidable overcrowding, and judging is made more difficult than it would otherwise be if each flower was separated by more space from its neighbours. But to accomplish this latter point, I consider the size mentioned on p. 708 is still too small, as it only allows 7 inches from centre to centre of the flowers lengthways, and a trifle more in the other direction. If an alteration is made, by all means let us have enough space this time, as a change in this respect means a lot of expense in providing new stands and travelling boxes. I think the size should be 32 by 24 inches, which would give 8 inches from centre to centre; and even this would soon be too small, if we get many more varieties of the size of *Etoile de Lyon*. And, again, it should be optional with exhibitors, but not compulsory before 1893, or some of the small growers will object to it, and the exhibitors suffer in consequence. *W. H. Divers, Ketton Hall Gardens, Stamford.*

ORIENTAL PLANE.—As an avenue tree, the Oriental Plane is quite condemned in this country (Belgium). Those in the Boulevard Botanique, at Brussels, are being replaced by Elms, and I think wisely, too. It is not a well-behaved tree here by any means. It is liable to suffer from frost, and an early frost in autumn renders all the leaves on the ground so many "suckers," thereby dangerous to walk upon, and difficult to gather up, from their fleshy nature and persistent ignoring of the natural drying process that other leaves submit to. *K.*

CHRYSANTHEMUM ETOILE DE LYON.—Much of the grumbling occasioned by this variety is caused by the wrong methods adopted in its culture. If people will try and obtain such extra large—in breadth—blooms of it, they must put up with the coarse, irregular florets, and washed-out appearance which the flowers have. There is no variety which has been subjected to so much adverse criticism as *Etoile de Lyon*, and none which deserves less, for if it grows very coarse, it is the fault of the growers, who do not understand its requirements. It is a splendid bloom in three ways, and it is not every variety about which the same can be said. In the first place, if large blooms are desired, they can be had without a shadow of coarseness, with well-developed centres, and of a rosy-purple colour, which cannot be found in any other variety, but the buds must not be "taken" before August 20, or the blooms which are so adversely criticised will be the result. In the second place, there is no variety which makes a better bush than *Etoile de Lyon*; or as a trained specimen either it is useful. Early in the season I saw some splendid free-flowered ones of it not more than from 3 to 4 feet high, densely clothed with the kind of foliage which this variety is remarkable

for; and again, at York, I saw some finely-grown plants of it. In the third place, it is the best that we have in bloom on the wall out-of-doors now, December 12, and this, too, in spite of the heavy winds and the continued wet weather; for not a stem or a brick can be seen behind where this plant is growing for the dense mass of leaves. Under all these conditions of excellence, I would advise those who grumble so much at a variety which does not deserve it, to grow it better before rushing into print needlessly. *E. M.*

UNLUCKY GARDENERS?—At p. 709, Mr. W. Napper, Chelsea, says, "I quite expect that the "men of mark" mentioned by Mr. Burbidge, owe their distinction in a large measure to tact and patronage. For instance, there would have been no Sir Joseph Paxton had there not also have been a Duke of Devonshire; and my late lamented friend, John Dominy, would probably have gone down to his grave a poor obscure Devonshire gardener, instead of an Orchid specialist and hybridiser, but for the great house of Veitch." I totally disagree with the logic thus employed by Mr. Napper, holding that men of the *calibre* of Paxton and Dominy, are not lights to remain long hidden under a bushel, no matter how big the bushel may be! Paxton saw the structure of the hollow ribs of the Victoria leaf, and logically applied the principles of their construction to the iron girders of the great exhibition of 1851, now the Crystal Palace, Sydenham. The late Duke of Devonshire approved of his project, but Paxton's was the master mind, and his idea was all his own, and the only feasible one of its time for the purpose intended. Then, John Dominy was not instructed how to hybridise Orchids and Nephentes by his employers, but by Dr. Harris, of Exeter, a friendly amateur. The late Mr. Jas. Veitch found in Dominy a staunch and faithful ally, and if history speaks the truth, it will be said in the future how that James Veitch and John Dominy built up the great business in London hand in hand and side by side, more like brothers than master and man. Neither Paxton nor Dominy were men that could be "patronised," by which, I mean bolstered and coddled into success or popularity. Both were born gardeners, and born gentlemen; if the scriptures of Burns about gentlemen be true, then their's was, indeed, a noble heritage. I am very sorry that Mr. Napper thinks that "patronage" is necessary for a gardener's prosperity. A good gardener is not like a marionette—a thing to be worked by wires! I think the less patronage a man of any kind gets the better for the man, if he has common sense and grit in him; and, of course, if he has not these, patronage will only land him still deeper into the mire. Surely the days of patronage are doomed. Only the other day, I saw the nursery as a refuge for gardeners out of place styled "the poor house," by a Scotch gardener who was lamenting the practice of gale day in Scotland. Now what is "tact" if not common sense, i.e., a logical mind? Of course, if a man is illogical, he will suffer for it, and perhaps screen his own shortcomings under the unmeaning phrase "unlucky." Luck is a poor thing for anyone to trust to, and a bad peg on which to hang an argument. I yield to no one in sympathy and respect for "all sorts and conditions of men," who fail through no fault of their own; for example, if a gardener is stricken down by accident or by disease, or, as sometimes happens, is suddenly cast adrift with a large family by the death of his employer. There are cases that demand pity and real assistance ungrudgingly given, as I well know. Some of us think that, good as is the Institution now devoted to the relief of aged gardeners and their widows, something better could be devised—something of aid and help to all honest gardeners of all ages and at all times, providing they would subscribe when their employment was sure. What we really do want is a society that would take up the case of the gardener, enroll his name, guarantee his honesty and respectability, and when he may happen, through no fault of his own, to be unemployed, then provide for his immediate wants—i.e., supply food and shelter—and at the same time aid him to gain another situation. Some of us think, and say, that the Royal Horticultural Society of England has never done its real duty towards the gardeners of England, whatever it may have done for their employers. It is just now good in its action, as far as it goes, but it certainly does not go far enough, nor deep enough in its relations with the practical gardeners. It "patronises" the nurserymen, rather than seeks to elevate and strengthen the gardener! So long as good honest men are, as Mr. Napper states, left "to

haunt the London nurseries" for situations, or even for temporary employment at starvation wages, so long is the true mission of our Royal Horticultural Society undone! The building of a horticultural hall, and the publication of belated information in its journals, that but few ever read (as compared with those who read the gardening journals), is one way "how not to do" a great and wide-reaching and a glorious work. I shall have something to say on this subject ere long, but dare not now further trespass on your space. In conclusion, I should like to ask Mr. Napper if he has not known some gardeners who had no one but themselves to blame for being "unlucky?" I still say, that there is a scarcity of good all-round gardeners, especially so of good hardy plantsmen. *F. W. Burbidge.*

RENOVATING LARGE STANDARD FRUIT TREES.

THESE may often be seen bearing fruit far inferior to what is found on younger trees; such fruit, in fact, as is scarcely worth gathering and storing in a plentiful season. Many people seem to imagine that a standard Apple or Pear tree which has grown to its full size requires no more attention beyond picking the fruit, hence the trees gradually decline in vigour until they die from exhaustion and bad management long before their time. This is more often the case when the land beneath is sown down with grass. Sometimes these trees are sawn off and grafted with another variety, and again give good crops after the three or four years rest which they get; but many of them, if not too far gone, may be improved and restored to good health by a much quicker process.

They should be taken in hand if possible before the leaves fall, and the first operation is to thin out all useless wood from the top. Take out all small branches from the centre, for although these bear the largest and finest-looking leaves, the fruit from them is of no use, being small and flavourless from lack of sun and air. After clearing all this away, the outer branches should be thinned out, so that sun and air can reach all parts of the tree. By doing this while the leaf is on, the operator has a good guide as to the healthiest branches, and the densest parts of the head; but after the foliage is off, the branches spring upwards again, and the top is very different to what it is in the growing season. The weak branches also are not so easily found. If any wounds are made more than 2 inches in diameter, they should at once be covered with pitch, to prevent frost penetrating and causing decay. None of the outer branches on old trees require shortening unless there is danger of the trees overlapping each other. This should always be prevented by keeping a space of 3 feet clear around each tree, or the weakest growers will gradually be overpowered.

The roots will next require attention. If turf is growing under the trees, it should be broken up for a time, and the soil must next be taken off until the roots are reached. Do not interfere with these unless there is reason to suspect that they have got down into bad soil. If such is the case, and the trees are comparatively young, they should be undermined, and the thick roots which grow downwards shortened back, preserving all the fibres carefully, and filling in again with good soil, keeping the roots as near the surface as possible. The top must be firmly secured with cable-wire before the roots are cut, and only half should be done in one season, the other side being left for one or two years, in order that the tree may not be too severely checked. The whole of the space where the soil has been moved should be mulched over with some strawy manure as soon as finished.

If there is no occasion to disturb the roots, a good layer of manure should be put on as soon as they are found, and the whole of the soil returned on the top of this, laying it in a slight ridge all round the outer part, and covering the whole with some strawy litter, in order to keep out frost, and encourage root-action. If the succeeding summer is a dry one, the trees that have been thus operated upon should have a little assistance occasionally with water; or, better

still, some liquid manure, giving enough to thoroughly soak the whole mass of roots whenever it is applied.

A great improvement will be seen the first season after the trees are thus treated, and they will continue to improve for some time if well attended to. Any mulching that remains the succeeding autumn may be lightly forked in, and the following spring a good dressing of rich manure should be given as a mulching. This will assist the trees during another summer's growth, at the end of which the ground may be levelled over, if no more remains to be done, and grass may be sown again if required.

But prevention is always better than cure. Large trees often get exhausted through bearing an extra-heavy crop of fruit. Nothing is done to make amends for the great exhaustion of the soil, and it takes the trees several years to recoup themselves. Instead of this neglectful treatment, the roots should be supplied with plenty of sustenance during the time the crop is swelling. A liberal dressing of bone-meal, superphosphate, and nitrate of soda mixed together should be forked into the soil in order to supply in part the extra demand made upon the roots; this may be supplemented by liquid manure occasionally, and a mulching of good rich manure from the farm-yard. Thus treated, the tree will come out of the ordeal far better prepared for another year's crop, and the above measures may be supplemented in the autumn, if deemed necessary, by giving more farm-yard manure, and in the following spring with chemical manures. This is, of course, only possible in cultivated land; trees on grass can only be aided with liquid manure, while the grass remains permanent. *W. H. Divers.*

SCOTLAND.

DEVAHNA HOUSE, ABERDEEN.

THIS fine old house and gardens are the property and residence of W. Henderson, Esq., ex-Lord Provost of Aberdeen, and of world-wide maritime fame. Although it is situated almost in the town itself, yet once one is inside the gates, so effectually and skilfully has it been planted, that its park-like character completely masks the surrounding houses. The gardens have been well laid out, and equipped with several ranges of commodious glasshouses, which are well filled with a selected assortment of plants, many of which have, from time to time, appeared on the exhibition tables of the Royal Horticultural Society of Aberdeen and elsewhere, and with almost unvarying success; indeed, Mr. Proctor, the gardener, is the fortunate possessor of many cups and vases, all duly recording the fact of his successes at those exhibitions. Amongst the many things grown here, foliage plants and Orchids are perhaps the most prominent. Amongst the Orchids we noted a fine example of *Cypripedium Harrisianum*, carrying eleven flower-scapes, six of which were twin-flowered. *Cattleyas* are well represented, there being fine masses of *Mendellii*, *gigas*, *Sanderiana*, *superbiens*, *guttata*, *Dowiana*, a huge mass of *crispa*, and a grand piece of *Harrisonae*, and *Laelia Perrini*. *Dendrobiums* of the noble, *Wardianum*, and *densiflorum* types, were well represented, many of them having made fine growths, which will no doubt give a good account of themselves later. The useful winter-flowering *Laelia anceps* had thrown up many spikes, and was very vigorous. The same remark applies with equal force to *Cypripedium insigne* and *Odontoglossum crispum*. There were numerous examples of *O. vexillarium*, all growing away freely. There are many other plants equally noteworthy, but it will suffice to mention a few of the more prominent, as *Cypripedium Stonei*, *C. Roezlii*, *C. Godefroyae*, *C. Lawrenceianum*, *Angraecum Leonis*, a grand plant of *Peristeria elata*, *Miltonia spectabilis* var. *Morellianum*, *Oncidium Marshallianum* and *curtum*, *Masdevallia Veitchii*, *M. ignea*, *M. amabilis*, *M. Lindenii*, and *M. Harryana*, Bull's blood variety; and a useful batch of *Cologyne cristata*. In the stove we noticed some grand potsful of *Eucharis amazonica*, some of which Mr. Proctor told us recently had as many as thirty to forty scapes of

flowers. A couple of fine plants of *Adiantum farleyense* were conspicuous objects on the side-stages; and several specimens of *Cocos Weddelliana*. The roof was festooned with *Dipladenia Brearleyana*, *D. boliviensis*, and *Stephanotis*, &c. In the large conservatory there are some noble Palms and Tree Ferns. One *Dicksonia antarctica*, although only 6 feet high, girthed 12 feet at the base, and had a spread of about 20 feet, the deep green colour of the fronds demonstrating the health and vigour of the plant. Scarcely less noteworthy were fine examples of *Alsophila australis*, *Cyathea dealbata*, and in its way *Platynerium alaicorne*. There were several fine *Kentia australis*, *Corypha australis*, *Diplothemiums*, and *Chamaerops excelsa*.

The distinct *Araucaria Rulei* was represented by a fine specimen, also *Dasyliirion serratum*, a representative of a class of plants which, we think, might be more largely used, where rather hardy decorative foliage subjects are required; indeed a few degrees of frost does not seem to affect them—*Phormium variegatum*, *Imantophyllums*, *Camellias*, *Vallotas*, *Primula obconica*, and flowering tuberous *Begonias* are largely grown, and gave the necessary colour to render the whole arrangement effective. In the section of *Lobelias* of the *Erinus* type, many distinct forms have been obtained. But we do not remember having seen anything more distinct or meritorious than a variety which is grown here, under the name of *Royal Purple*. The flowers are very large, of a deep purple colour, with a clear and well-defined white eye. This and similar forms of *Lobelia Erinus* strikingly illustrates what may be done by exercising proper selection in habit and flowers.

Devalna House has, for at least a quarter of a century, been famed for its collections of plants, and under the present able management of Mr. Proctor, there is little fear of its prestige being lost or diminished. *F. R.*

OUT IN THE FRUIT NURSERIES.

ALTHOUGH the surroundings of Fulham and the close contiguity of the River Thames are unmistakable, yet once within the Southfields Nursery, where Messrs. James Veitch & Sons grow such myriads of fruit trees of all kinds, it is very easy to imagine that, after all, one may be in some country district where the air is pure, and London smoke and fogs are unknown elements, so wonderfully robust and healthy do all the denizens of this nursery enclosure seem to be. Whatever may be said as to the difficulties of tree culture in and about London, it is certain that here, in a low-lying, populous district, fruit trees, even of presumably the tenderest kinds, do wonderfully well—so well, in fact, that it seems almost impossible they could do better. Peach trees of all forms and sizes are so numerous, that it would seem as if all the wants of the kingdom for the ensuing winter could be more than satisfied, and yet every saleable tree will be sent out presently, and myriads of others, now maidens—and such maidens, too—will have to be prepared and trained ready for the next season's service. Peaches, Nectarines, and Apricots, in profuse variety, are formed from standards or riders, half-standards, or dwarf-trained trees, from 7 or 8 feet across, and admirably furnished. What profits some of these trees make, is found in the fact related to me by a wealthy man who purchased and planted many Peaches in new houses, and the very first season cropped and sold from them on the average 94 dozen of fruits each, at 16s. per dozen, the sample was so fine. That was a good investment in any case, and at that rate the produce will soon pay for the houses. Half-standards in 18-inch stems are favourite trees with many Peach growers, and these are found in great abundance. Standard trees and natural pyramids or bushes in pots for fruiting under glass are also plentiful, and very superior stuff. Cherries of every conceivable sort are also found at Southfields in great quantities. Especially so are Morellos in trained trees of all sizes, so that walls may be furnished instantaneously.

The constantly transplanted trees turn out masses of roots like mop-heads, to use a rough simile, and they may be safely moved at almost any age. What a wealth also is there of trained Apple and Pear trees. We see these in bush, pyramid, standard, half-standard, erect cordon, horizontal cordon, gridiron, or quintuple erect cordons, horizontal or espalier trees, fan-shaped, and even in various other forms, so ready is the management to fashion from Nature whatever the fancy of purchasers may require. Excepting a few quarters of Lilywhite Seakale grown at Southfields, just to give the soil a little change, we see there nothing but fruit trees in all stages of growth, the budded quarters just ready for the trees to be taken off, the maidens from last year's budding, and through various gradations up to well-matured trees four and five years old, specially retained to suit the demands of certain customers who want large trees, and do not mind cost. Not that after all the trees are dear; indeed, when we see what trouble has been expended in getting a wall tree into shape, and that it is well qualified to carry many good fruits the first year, the prices seem low. However, there is powerful competition just now in fruit tree production, and high prices do not pay. One curious product of the taste for odd things in fruit, is seen in some tall heads of Gooseberries worked on clean stems of a variety, the taller ranging from 4 to 6 feet high. Cordon and pyramid Gooseberries are also in great request.

In the case of Plums, differing from what is usually the case in other nurseries, every other or, perhaps, third plant in the quarters is run up into a standard, thus giving each class of trees ample head room. It need hardly be said that Plums, of which some seventy sorts are grown, are largely represented, for it is certain that one result of the present season's crop will be to create a big demand for trees presently.

Pears, as everywhere, fruited well, but it is a rule here not to allow trees for sale to crop heavily, as in such case the trees are somewhat distressed for the following year; just a few fruits are taken from each, that intending purchasers may note the samples produced, and these are invariably good. The same thing may be said of Apples also, of which there are many grand samples. Finely fruiting of Pears were *Burré Superfin*, *Madame Treve*, *Beurré Bachelier*, *Beurré d'Amanlis*, *Beurré d'Anjou*, *Doyenné Boussoch*, *Doyenné du Comice*, *Fondante de Cuerne*, and many others of great excellence.

Whilst Apples showed fine fruits in all directions, some fan-shaped trees, just to show what these can do in the production of fine fruits, have been left to crop more freely. What pictures would some Cellinis of this form of training make! It is very evident that a return to the old espalier and the fan-shaped tree in the choice sorts of Apples, we have seen, and on Paradise stocks, presents a method of culture well worthy the attention of those who would find home-grown fruits to compete with the American Apples in our markets; the method, beyond furnishing fine samples, also gives rich colour. Those who want colour specially, can hardly do better than grow plenty of trees of *Baumann's Red Reinette*; this variety, wherever seen about the nursery, glows in colour like to a Cockscomb, and, apart from its value as a fine keeping Apple, presents beautiful garden objects. *Bismarck*, too, colours finely, and so also do *Cellioi Pippin*, *Emperor Alexander*, *Gascoigne's Seedling*, *Landsberger Reinette*, *Salt-marsh's Queen*, *Sops in Wine*, &c. German Apples seem to give colour generally more than home-raised varieties of the later kinds, but in Mr. Gladstone, *Duchess Favourite*, *Worcester Pearmain*, *Lady Dudley*, *Jefferson*, *Red Quarrenden*, &c., we find plenty of colour. In earlier sorts of varieties less coloured, *Ecklinville Seedling*, *Stirling Castle*, *Winter Hawthornden*, the very best of all the Hawthorndens; *Robstone Pippin*, wonderfully fine on dwarf trees; *Bramley's Seedling*, *Sturmer Pippin*, *Peach Apple*, carrying a thick bloom; *Calville St. Sauveur*, not unlike *Dutch Codlin*, but is a good keeper; *Schoolmaster*, *Warner's King*, *Small's*

Admirable, *D'Eclat*, something after the style of *Bismarck*; *Betty Geeson*, *Crown Apple*, something after *Cellioi*, but keeps much longer; *Lord Suffield*, *Frogmore Prolific*, *Pott's Seedling*, *Lane's Prince Albert*, are but a few only of the many large-fruited sorts, giving samples of great excellence. Of smaller-fruited sorts, the good old and ever-ready cropping *Cockle Pippin*, *Wormsley Pippin*, *White Calville*, *Rosemary Russet*, *Franklin's Golden Pippin*, *Mannington's Pearmain*, *Small's Golden Pippin*, *Sturmer Pippin*, *King of the Pippins*, *Cox's Orange Pippin*, &c., are all good. Truly, it is difficult, if not impossible, to find any thing bad in fruits here, especially as in these days purchasers will have of the best only, so that it does not pay to grow inferior varieties.

FOREIGN CORRESPONDENCE.

ARISTOLOCHIA DUCHARTREI.

The gigantic *Aristolochia* recently flowered in *Kew Gardens*, and illustrated in the *Gardeners' Chronicle*, November 7, suggests to me to call your attention to another interesting species of this genus which flowers freely with us under the name of *Aristolochia Duchartrei*.

The flowers are pale rose, with markings of dark violet-purple, the blotch adorning the throat much more intense than the others. The aperture, which reminds one of some *Nepenthes*, is almost pure white, and the edges and interior of this tube are covered with woolly hairs, like those seen on the lip of *Dendrobium Dalhousieanum*, whilst all the remaining surface of the flower is shiny. The flowers vary considerably in size—we have had some measuring over 14 centimetres across, some 11 c. They are produced in clusters of three to five, on the oldest part of the stem, and they expand in succession.

The plants we flower are from cuttings struck last year, and planted out in an ordinary stove in June, since which time they have grown rapidly, climbing along a wire which runs close to the glass.

We may take this opportunity to mention a plant of *Aristolochia elegans* with numerous seed-pods, probably fertilised through insect agency. We think it advisable to grow *A. elegans* with more air than is usually afforded it, and have planted it out near the door of a temperate-house, which, during the summer, remains open the greater part of the day. It is in fine health, and has produced scores of flowers. *A. Lefebvre*, *Grüneburg*.

VEGETABLES.

WRIGHT'S GROVE PINK CELERY.

We have received from Mr. C. R. Clark, nurseryman, Retford, an excellent variety of Celery under the above name. It grows to about the height of *Major Clarke's Red*, but is much heavier than that favourite Celery. The sticks are stout, fleshy, solid, and sweet flavoured. The leaf growth is small. The samples sent had been planted on July 16, and in consequence of the short time that had elapsed, they were not fully blanched.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

DECEMBER 8.—Present: D. Morris, Esq., in the chair; and Mr. McLachlan, Dr. Michael, Dr. Müller, Rev. W. Wicks, Dr. Scott, Professor Oliver, Professor Rev. G. Henslow, Hon. Sec., and M. H. Vilmorin (visitor).

Prinula Forbesi, Franchet.—M. Vilmorin exhibited growing plants and cut blooms of this new species. It was discovered by Abbé D. Lavay in the province of Yunan, China, growing wild in marshes and Rice fields, where it is practically an annual.

The plants were raised from seed received from the Abbé, and under cultivation proved to be most perpetual bloomers. It much resembles *P. obconica* in the succession of flower stems, but otherwise is quite unlike it in appearance. The flower stems are very slender, and bear several (3 to 6) whorls of flowers, which, individually, resemble those of *P. farinosa*. It has produced but few seeds as yet, it possibly requiring a high temperature. It does, however, well in a cool house. The specimens appear to be all of the long-styled form, which may possibly account for the paucity of seed. The growing plants were presented by M. Vilmorin to Kew and to the Horticultural Society. A vote of thanks was given by the committee to M. Vilmorin for his very interesting communication.

Telephora sp. (?).—Dr. Muller exhibited what appeared to be some species of this genus growing round the stems of *Rhododendrons* in peaty sand. He thought it appeared to be parasitic. It was forwarded to Kew for further examination and report.

Fog and Rain.—Professor Oliver asked of M. Vilmorin if he had experienced in Paris any ill-effects of fog comparable to those familiar to growers of plants in the neighbourhood of London. He replied in the negative, as a typical yellow fog is unknown in Paris. He observed, that sometimes a well-marked local increase of rain was induced to fall, through condensation brought about by trees.

Narcissus bulbs attacked by Merodon.—Mr. G. Lee, of Clevedon, sent bulbs with this well-known pest. The only methods of destruction are either to cut out the portions containing the grubs, soaking the bulbs in water to drown them, or else by destroying the bulbs altogether.

Benthamia fraifera, fruit.—Mr. R. G. Lakes, of St. Austell, Cornwall, sent some fine ripe fruits of this species of tree.

Citrons.—Mr. P. Crowley, F.L.S., forwarded two fine fruits of *Citrus medica*, which were taken from trees growing at Waddon House, Croydon.

NORTHERN BOTANICAL AND HORTICULTURAL.

DECEMBER 9.—The annual meeting of the Botanical and Horticultural Society of Durham, Northumberland, and Newcastle-upon-Tyne, was held at the chambers of the Secretary, Mr. Jas. J. Gillespie, A.C.A., Cross House, Westgate Road, Newcastle, on the above date. In the absence of the Chairman, Mr. Benjamin Plummer presided.

In their report for 1891, which was submitted, the Council state:—In previous reports the Council have invariably had to attribute the failure of the year's operations entirely to the wet weather which had prevailed at the shows; in spite of which they have struggled from year to year to keep the Society together, notwithstanding that there has often been a large deficiency in the funds. This year the Society commenced free from debt; the spring show, held in April, was a financial success, and the Council looked forward with confidence to the autumn show, which was likely to have been one of the best ever held, exhibitors having brought their plants from an area extending as far south as Wiltshire, and as far north as Aberdeen. What happened is now a matter of history, as on the Council assembling in the early morning of August 26, at the Leazes Park, to place the exhibits, they found the tents had been almost destroyed by the gale of the previous night. The Council then decided to abandon the show. The Council again met on Thursday, August 27, and after considering the claims sent in, and the available funds of the society, it was found there was a deficiency of £335, and it was subsequently decided to appeal to the public for assistance. The response was generous, and far exceeded the expectations of the Council, with a result, as shown in the statement of accounts submitted, that not only were the liabilities of the society paid off, but there is a sum of £560 to the good. The shows have been fixed for next year as follow:—Spring show, April 27 and 28, in the Town Hall; and the autumn show, August 24, 25, and 26, in the Leazes Park.

In the course of his remarks on the past fortunes of the Society, he commended the notice of the Society an essay on profitable fruit-growing, which had gained the prize offered by the Fruiterers' Company of London. One paragraph in that essay dealt with the successful results which had followed the distribution of fruit trees among cottagers and

artisans. He asked if the Council of this Society could not do something without very much cost to follow this example. Speaking of the small attendance at their annual meetings, he suggested that, to induce increased attendances, they might arrange to hold these meetings in the afternoon, and have a paper read connected with some particular branch of their operations. If they could move in this direction, they would hold the public more with them. He had heard it frequently thrown out as a reproach to the Society that they did nothing but cater to amusement, or practically did very little towards the purposes for which the Society was formed.

Mr. Neabitt seconded the adoption of the report and accounts, and this was agreed to.

The re-election of Mr. Thomas Nelson, J.P., as President, and election of the Mayor of Newcastle (Councillor Wm. Sutton) as Vice-President, were then formally carried, and other officials were also appointed. *Extract from Newcastle Daily Leader, Thursday, December 10.*

EDINBURGH BOTANICAL.

DECEMBER 10.—The Society met at 5, St. Andrew Square, in the evening of this date, Dr. Cleghorn, Vice-President, in the chair.

A branch of *Posoqueria multiflora* in fine flower was exhibited from the Royal Botanic Garden.

Dr. William Craig read an account of the excursion of the Scottish Alpine Club to Tyndrum in 1891. One of the party, Mr. W. B. Boyd, of Faldonside, Melrose, found three good varieties of *Asplenium viride*, which in the event of their peculiarities being permanent, he proposes to name respectively *vars. bifidum, truncatum, and convolutum*. An interesting form of *Scirpus fluitans* found in deep water was exhibited. Dr. Craig gave an outline of the history of the Club since its foundation, twenty-one years ago. With three exceptions, viz., to Teesdale, Norway, and Connemara, the excursions had always been made to the highlands of Scotland.

Dr. A. P. Aitken read a paper on "Roots of Grasses," in relation to upper growth. Details were given of experiments with agricultural grasses, all grown for a year under similar conditions, in zinc boxes 2 feet deep and 6 inches square. The roots were then removed, cleaned, measured, and weighed. Striking results were obtained, showing the relative amount of root in the upper 8 inches of the soil, and that occupying the deeper 16 inches. *Lolium perenne*, grown from good seed, was the only grass with greater development of root below the 8 inch line than above it. *Cynosurus cristatus* had almost all its roots in the upper 8 inches. The practical importance of ascertaining the relative power of rooting above or below this limit was pointed out.

Notes on the Flora of the Moffat District for 1891, were sent by J. Thorburn Johnstone.

Report on Temperature, &c., at the Royal Botanic Garden, Edinburgh, by R. Lindsay, Curator.—The past month of November, although somewhat changeable and unsettled, has been mild. Storms of wind and rain were less frequent than usual, and no snow fell. The thermometer was at or below the freezing point on twelve mornings, indicating collectively 41° of frost for the month. The lowest readings were on the 18th, 28°; 23rd, 24°; 24th, 26°; 27th, 24°; 28th, 25°. The lowest day temperature was 38° on the 27th, and the highest, 55° on the 2nd. Rain fell on eleven days. Out-door vegetation is as nearly as possible in a resting condition. Not a single plant came into flower on the Rock Garden during the month.

Report on Temperature, &c., at the Botanic Garden, Glasgow, by R. Bullen, Curator.—This was another wet, variable, unseasonable month; much dark and foggy weather prevailed. The maximum and minimum readings of the thermometer were both high for the season. No frost was registered until the night of the 21st, but after that light night-frosts were frequent. The lowest reading was 7° during the night of the 23rd, and the total only 26°. Owing to the wet state of the ground, out-door work had to be abandoned.

VARIORUM.

A NICE NAME FOR A TALLY, SCHTSCHUROW-SKIA.—It applies to a genus of Umbelliferae, near *Coriandrum*.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.	BRIGHT SUN.		
	Above (+) or below (−) the Mean for the week ending December 12.	ACCUMULATED.							
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1891.	Below 42° difference from Mean since Jan. 4, 1891.			More (+) or less (−) than Mean for Week, Jan. 4, 1891.	No. of Rainy Days since Jan. 4, 1891.	Total fall since Jan. 4, 1891.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 4, 1891.
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths In.	In.				
1	2	0	39	+ 201 + 110	6 +	225	40.8	12	27
2	1	0	36	− 63 + 156	7 +	175	29.1	23	30
3	3	+ 20	13	− 77 + 88	10 +	172	21.0	27	28
4	6	+ 31	11	− 37 + 81	5 +	187	25.6	27	33
5	6	+ 31	11	− 74 + 78	11 +	183	29.5	21	31
6	6	+ 36	4	− 80 + 103	9	180	32.3	23	36
7	2	+ 22	12	+ 102 + 51	20 +	193	46.1	20	32
8	4	0	23	+ 46 + 212	1 +	175	33.5	13	29
9	4	+ 34	4	− 122 + 160	13	188	42.3	17	37
10	2	+ 12	21	+ 15 + 58	13 +	212	33.6	14	31
11	2	+ 31	10	− 40 + 55	23 +	192	30.1	17	34
12	5	+ 57	0	− 3 + 35	12 +	189	35.3	33	46

The districts indicated by number in the first column are the following:—

- Principal Wheat-producing Districts:—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.
- Principal Grazing, &c., Districts:—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending December 12, is furnished from the Meteorological Office:—

"The weather during the week was extremely unsettled and changeable, with frequent and heavy falls of rain, alternated, however, by fine, clear intervals. A good deal of snow fell over all our more northern and north-western districts towards the close of the week.

"The temperature was a little below the mean in the north and east of Scotland, but in all other districts it was again above, the excess over eastern, southern, and central England being as much as 6°. The highest of the maxima were recorded either on the 9th or 10th, and ranged from 56° in the south and east of England, the south of Ireland, and the Channel Islands to 50° in 'Scotland, N.' The lowest of the minima, which were registered during the earlier part of the week in Scotland, and towards its close elsewhere, varied from 19° in 'Scotland, N.,' and 21° in 'Scotland, E.,' to 20° or 30° in most other districts, and to 37° in the 'Channel Islands.'

"The rainfall exceeded the mean in all districts, the fall in most cases being nearly three times the normal.

"The bright sunshine was more prevalent than during the previous week in the wheat-producing districts as well as in 'Scotland, W.,' and the 'Channel Islands,' but shows a slight decrease elsewhere. The percentage of the possible duration ranged from 12 in 'Scotland, N.,' and from 13 to 17 in most of the western districts, to 27 in 'England, E., and N.E.,' and to 33 in the 'Channel Islands.'

MARKETS.

COVENT GARDEN, December 17.

No alteration in prices; business somewhat brisker. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Apples, Canadian and Nova Scotia, per barrel	10 0-13 0	Kent Cobs, 100 lb.	50 0-55 0
Apples, 2-sieve	1 0-4 0	Lemons, per case	115 0-30 0
Grapes	0 6-2 6	Pine-apples, St. Michael, each	2 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Acacia or Mimosa, French, per bunch	1 0-1 6
Azalea, p. doz. sprays	1 0-1 6
Camellias, white, doz.	3 0-4 0
— red, per doz.	1 0-1 6
Carnations, 12 blms.	2 0-3 0
Chrysanthemums, 12 blooms	1 0-5 0
— 12 bunches	3 0-12 0
Eucharis, per dozen	5 0-7 0
Gardenia, per dozen	4 0-6 0
Heliotrope, 12 sprays	0 6-0 9
Hyacinths, 12 sprays	0 6-1 0
Lilac, white (French) per bunch	... 6 0-8 0
Lilium Harrisii, doz.	4 0-8 0
Lily of the Valley, per doz. sprays	1 6-2 6
Maiden Hair Fern, 12 bunches	... 4 0-9 0
Mignouette, doz. bun.	1 6-2 0
Marguerites, per doz. bunches	... 3 0-4 0

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz.	4 0-12 0
Aralias, per doz.	6 0-12 0
Aspidistra, per doz.	18 0-63 0
Azalea, per doz.	36 0-60 0
Begonias, per doz.	4 0-6 0
Chrysanthemums, per dozen	6 0-9 0
— large, each	2 0-3 6
Coleus, per dozen	3 0-6 0
Cyclamens, per doz.	9 0-18 0
Cyperus, per dozen	4 0-10 0
Dracenas, each	1 0 5 0
Epiphyllum, p. doz. pots.	... 9 0-18 0
Erica hyemalis, per dozen	... 12 0-18 0
— small, per 100	8 0-15 0

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, each	... 0 4-0 6
Beans, French, lb.	... 0 6-1 0
Beet, red, per dozen	2 0-3 0
Carrots, per bunch	... 0 4-0 6
Cauliflowers, each	... 0 3-0 6
Celery, per bundle	... 1 0-3 0
Cucumbers, each	... 0 6-0 9
Endive, per dozen	... 2 0-3 0
Herbs, per bunch	... 0 9-1 0

POTATOES.

Arrivals continue heavy, but stocks have not increased to the extent that was expected, which may be accounted for by the fact of the usual increase in the demand about this time of the year. Prices have ruled fairly firm, the medium quality only having a tendency to fall. Best samples, 90s. to 100s.; medium, 60s. to 70s.; common, 55s. to 65s. J. B. Thomas.

SEEDS.

LONDON, Dec. 16.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, London, S.E., report to-day's market thinly attended, with, as is usual, towards the close of the year, less business doing in Clover seeds. However, as regards values, a strong undertone is observable all round. American red, in particular, is extremely firm. Blue Peas, with for the moment a less excited demand, are held with great steadiness; existing stocks, it is now well established, are wholly inadequate for the requirements of the approaching winter. Haricots and Runner Beans realise full prices. Linseed is slow.

FRUITS AND VEGETABLES.

SPITALFIELDS: Dec. 15.—Quotations:—English Apples, 3s. to 6s. per bushel; American do., 10s. to 12s. per barrel; Pears, 1s. to 2s. 6d. per half-sieve; English Tomatoes, 4s. to 6s. per peck; foreign do., 1s. to 2s.; Seakale, 1s. to 1s. 6d. per punnet; Cabbages, 1s. 3d. to 2s. 6d.; Savoys, 1s. 6d. to 2s. 6d.; Cauliflowers, 6s. to 10s. per tally; Greens, 1s. to 1s. 9d.; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 1s. to 2s. 6d.; Parsley, 1s. 6d. to 2s. per dozen bunches; Spinach, 1s. 6d. to 1s. 9d. per bushel; Parsnips, 1s. 6d. to 2s. per score; Endive, 1s. to 1s. 6d.; Cabbage Lettuces, 6d. to 1s.; Beetroot, 3d. to 6d. per dozen; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Bordeaux Onions, 4s. to 4s. 6d.; Spanish do., 6s. to 7s. per cove; Belgian do., 3s. 6d. to 4s. 9d.; Dutch do., 3s. 9d. to 5s. per bag of 110 lb.; Celery, 6d. to 1s.; Horseradish, 1s. to 1s. 1d. per bundle.

STRATFORD: Dec. 15.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Savoys, 3s. to 5s. per tally; Greens, 1s. to 1s. 6d. per dozen bunches; Cauliflowers, 9d. to 1s. 3d. per dozen bunches; do., 3s. to 6s. per tally; Turnips, 1s. 6d. to 2s. 3d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 31s. to 45s. do.; do., cattle-feeding, 25s. to 32s. do.; Parsnips, 60s. to 70s. do.; Mangels, 14s. to 15s. do.; Swedes, 18s. to 25s. do.; Onions, English, 100s. to 120s. do.; do., Dutch, 3s. to 4s. per bag; Apples, English, 2s. to 6s. per bushel; American, 14s. to 20s. per barrel; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; do., 1s. 9d. to 2s. 6d. per sieve; Horseradish, 9d. to 1s. 6d. per bundle.

BOROUGH: Dec. 15.—Quotations:—Savoys, 2s. 6d. to 3s. 6d.; Broccoli, 5s. to 8s. per tally; Spinach, 1s. 6d. to 3s. per bushel;

Turnips, 1s. to 1s. 6d.; Carrots, 1s. to 1s. 9d. per dozen bunches; English Onions, 4s. 6d. to 5s. per cwt.; English Apples, 2s. to 6s.; Pears, 2s. 6d. to 7s. per bushel; Canadian Apples, 12s. to 15s. per barrel; Newtown Pippins, 16s. to 30s. do.

POTATOES.

SPITALFIELDS: Dec. 15.—Quotations:—Magnums, 57s. 6d. to 70s.; Regents, 60s. to 70s.; Champions, 55s. to 60s.; Imperators, 60s. to 75s.; Hebrons, 60s. to 75s.; Bruce Magnums, 60s. to 70s.; Snowdrops, 55s. to 75s. per ton.

BOROUGH: Dec. 15.—Quotations:—Hebrons and Elephants, 70s. to 90s.; Imperators, 60s. to 85s.; Magnums, 60s. to 90s. per ton.

STRATFORD: Dec. 16.—Quotations:—Magnums, 60s. to 85s.; White Elephants, 65s. to 75s.; Hebrons, 65s. to 75s.; Scotch Magnums, 90s. to 100s. per ton.

CHRISTMAS CATTLE MARKET.

Notwithstanding the abnormal atmospheric conditions under which graziers have laboured during the past twelvemonths, but little indication of this was evident at Islington last week at the Great Christmas Cattle Market, when, though the numbers were less than on the previous occasion, the quality was of very high order, and fair average prices were obtained. As usual, the Scots were to the fore in largest numbers, and in prime condition; so also were the Devons and Herefords, &c. The market opened slowly until an idea of the demand was obtained, and a very fair trade resulted. The same remarks apply to sheep; here and there among the Downs some pens of rare excellence were to be found; but the principal characteristic is reported as a good all-round evenness, which met with a fair demand at average prices.

NOTICES TO CORRESPONDENTS.

ARALIA SIEBOLDI: F. R. From seeds, or cuttings of shoots in heat in the spring, or of the roots in the autumn and treating them cool.

ASPARAGUS IN THE FRENCH METHOD: A Constant Reader. The variety may be the common or the Argenteuil, it does not much matter which. Instead of growing it on raised beds as here, it is grown in broad, shallow trenches, about 9 to 10 inches deep, with broad alleys between. The soil is carefully scraped off the crowns in the autumn, and placed in the alleys; the bed is then heavily dressed with rotted manure, and just a little of the soil is thrown over it—sometimes. When the Asparagus starts, or, rather, just before it does so, some of the soil is returned to the bed from out of the alleys, adding more and more until it is all put back. The shoots having to grow through this thick stratum of mould become blanched, as you see it in our shops in spring and summer. When it is eaten quite fresh from the beds, a good portion of the top is eatable, but it soon toughens, till only the top can be eaten. However, it sells here, and the Frenchman pockets a large sum yearly from its sale. A great deal of this kind of "grass" is grown on sewage-farms near Paris.

ASPARAGUS ROOTS: T. C. The portions sent look like the outside crowns of larger clumps, or seedlings stunted by bad culture.

BOG-BED: T. L. C. The hole seems to have been excavated unnecessarily deep; 2 feet 6 inches would have been a better depth. In place of stagnant water, it would be better for the plants if you were to conduct a stream of water through the bog-bed. This stream should have a clayed bottom, over which water-worn pebbles might be laid, and by letting the peat soil about on this stream in places, sufficiently moist spots could be found for bog plants.

BOOKS: Clara, My Gardener, a Practical Handbook for the Million, and the Rosarian's Year Book, are published, the former by Messrs. Eyre & Spottiswoode, East Harding Street, E.C., and the latter by Messrs. Bemrose & Sons, 23, Old Bailey, and at Derby. We cannot tell you the price, that is a matter of business which the advertisers should attend to.—A Constant Reader. Handbook of Hardy Trees, Shrubs, and Herbaceous Plants, by Decaisne, Naudin, and Hemsley (Longmans, Green & Co.)—CONFEROUS PLANTS: The Manual of Conifera, by J. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.

CELERY: A Constant Reader. The strain possibly is not a good one. In large quantities of plants there will always be a few that will have divided stems.

COMRULEA: J. C. G. As printed.

COMMON PEPPERMINT: A Constant Reader. The common Peppermint is certainly not an annual; it is a herbaceous perennial. It is extensively grown at Mitcham.

CORRECTION.—In our last issue, p. 706, My Gardener, for M. W. Ward read H. W. Ward.

EARLY POTATOS IN MALTA: H. B. P. The planting would need to be performed about ten or twelve weeks—according to the time of year—before they are required for market. We do not know the name of the varieties grown, but we do know that the quality is about as bad as could be, and that if we, in this country, put such poor ware on the market, there would be but a poor sale for it.

ECHINOCACTUS AND CACTUS: Old Reader. Pot the former almost on the surface of the soil, which should consist largely of burnt earth broken fine, sandy loam, and a small portion of leaf-mould; the drainage should occupy one-third of the pot. Echinocactus never require much water, and during the six months of autumn and winter none at all. Some will do well in an intermediate-house, some in the stove, and a few may be grown in the greenhouse. Cactuses like a somewhat similar soil, but rather richer in humus; they will even be benefited by occasionally getting manure-water whilst growing—let them have at that time full exposure to the sun. Afford no water from October to March, and keep them at the warmer part of the greenhouse.

FLORIST: H. H. By all means let your son go to some suitable establishment in Germany, Belgium, or France for two or three years before settling at home.

GREVILLEA ROBUSTA: L. T. From seeds generally.

"HORTICULTURAL TRANSACTIONS": R. D. We do not know. Ask some bookseller or advertise them.

NAMES OF FRUITS: Houston. Passe Colmar.—J. W. 1, Bergamote d'Esperen; 2, Winter Nelis; 3, Doyenné du Comice; 4, Vicar of Winkfield; 6, King of the Pippins.—Bourne & Son, 1, Dumelow's Seedling; 2, not known.—E. Gilman, 1, Stirling Castle; 2, Tibbett's Pearmain.—E. W. Piper, 1, a pale coloured Tom Pudding; 2, Wyken Pippin; 2, pear decayed.—Old Subscriber, 1, Pear Chamontelle; 2, Apple Dutch Mignonette.—H. L. E. The large russet fruit-streaked red is Tibbett's Pearmain; the other probably Dutch Codlin.

NAMES OF PLANTS: Hordeum. 1, Setaria italica; 2, Cynosurus cristatus; 3, Thamnorchortna argenteus; 4, Avena flavescens.—Peter A. Abies or Picea pinsapo.—J. H. J. Calceolaria.—H. L. E. Ferns, small-leaved, one is Adiantum æmulum; the other, A. capillus-veneris Mariæsi.—P. W. C. The tree is Ginkgo biloba, the Maiden-hair tree. The Lichen is an imperfect form of a Cetraria.—P. W. C., Horton. Erica hyemalis, E. gracilis, red. J. M. Next week.—D. J. Crassula lactea.—J. W. K. Maxillaria punctata—a small form of it.—J. W. W. Cymbidium giganteum, Cypripedium venustum, and a very good Odontoglossum Rossii majus.—L. L. Specimen received. Will refer to it next week.—C. W. 1, Cattleya Harrisonia; 2, Hydrangea hortensia medio-variegata; 3, H. hortensia variegata.—J. M. Nidularium Scheremetiewii, Regel.

PANCRATIUM LEAVES: J. T. L. The leaves are affected with a minute fungus, which often occurs when the bulbs are attacked with the bulb-mite.

STACHYS TUBERIFERA: D. H. Clean and scrape the tubers, and cook in water with a little salt, as you would French Beans; or eat them raw, like Radishes.

TREES ON THE THAMES EMBANKMENT: Tomsonii. Plantanus orientalis, var. acerifolia chiefly, Common Plane and London Plane.

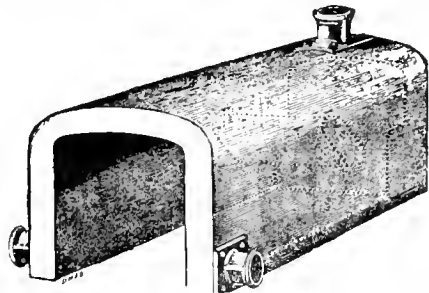
COMMUNICATIONS RECEIVED.—Samuel Ray (next week).—Americus, E. M.—R. D.—A. W. C.—G. J. I.—U. Donat.—G. H. K.—H. W.—A. G. C.—W. W.—G. M.—W. A. C.—J. D.—T. S., Timaru, N.Z.—W. L.—E. M.—J. B.—R. W.—P. L. S.—Pteris.—R. D.—J. B. W.—J. U.—H. E.—W. A. C.—J. A.—P. W. (under consideration).

DIED.—We regret to have to announce the death on December 1, of Mr. JOHN WILLIAM VERT, at the age of 77 years, who, for over 52 years was Gardener and Bailiff to the Hon. Arthur and Mrs. Lascelles, of Noley House, Frodsham, Cheshire.

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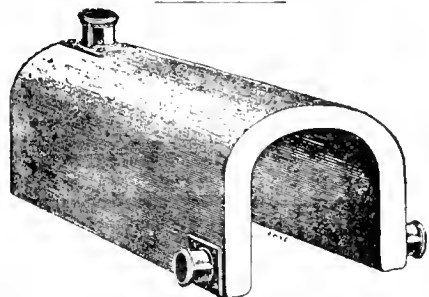
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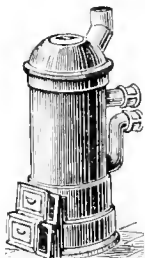
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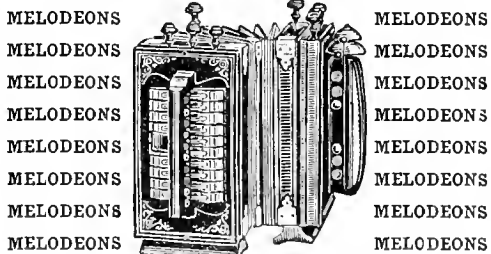
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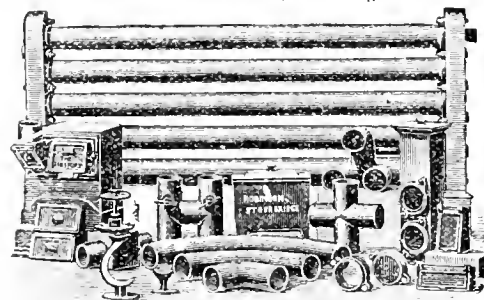
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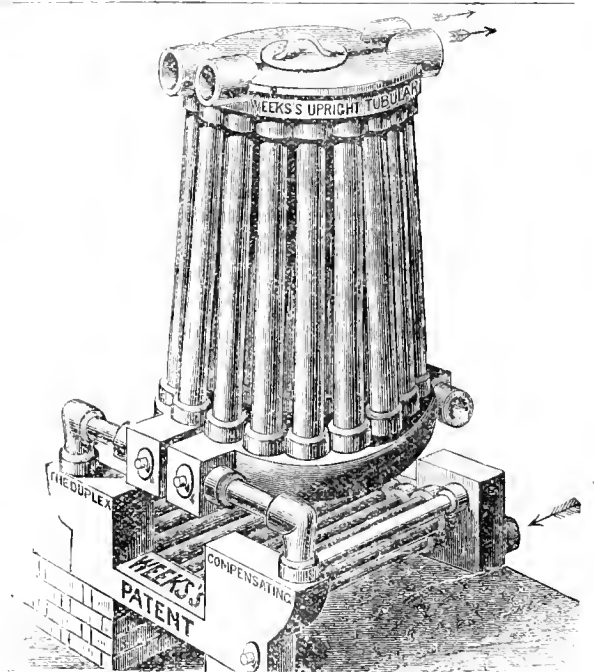
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WANTED, CHRYSANTHEMUM CUTTINGS, MADAME DESGRANGES, LADY SELBORNE, ELAINE, and good late yellows. State lowest price per 1000 to—GRAY AND CO., Gatehouse Nurseries, Worthing.

CARTERS' "VADE MECUM FOR 1892" has now been posted to Messrs. CARTERS' Customers. It contains seven elegant coloured illustrations, and will be found a most thorough book of reference by all who desire to cultivate successfully the choicest vegetables and the prettiest flowers.

Price 1s., Post-free, to unknown correspondents. CARTERS', SEED-MEN, by Royal Warrants, to H.M. The Queen and H.R.H. the Prince of Wales, 237 and 238, High Holborn, London, W.C.

ORCHIDS A SPECIALTY.—

Please write for New Illustrated Price LIST of well-established, healthy, and easily-grown plants. W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N. Nursery, Orchard Road.

ROSES! ROSES!! ROSES!!!—The best and cheapest in the world. 40 Choice Perpetuals for 21s.; purchaser's selection from 400 best varieties; Catalogues free on application. Twelve Acres of Roses. 10,000 grand plants to select from; plant now. JAMES WALTERS, Rose Grower, Exeter.

150,000.—Special Offer of Kentias.

W. ICETON has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well-established, at £30 per 1000. W. ICETON, Putney, S.W.

KILLARNEY FERN.—For Sale, a case of this lovely perennial Fern. Case 3 feet 3 inches in length, 22 inches in width.—Apply, HENNESSY & SON, Waterford, Ireland.

PALMS—For CHRISTMAS—PALMS.—

Silver's Special Offer for Christmas, Church, and Room Decorations: 12 Lantana borbonica (the Fan Palm), beautiful plants, 1½ to 2 feet high, for 10s.; 2 to 2½ feet high, 15s. Package and packing free for Cash with Order. J. W. SILVER, Streatham and Norbury Nurseries, S.W.

Seeds! Seeds!! Seeds!!!

VEGETABLE and FLOWER SEEDS, saved from CHOICE SELECTED STOCKS. Everyone with a garden, and every Market Gardener, should send for a CATALOGUE before purchasing elsewhere.

SPECIAL LOW QUOTATIONS to Large Buyers.

B. L. COLEMAN, Seed Merchant and Grower, Sandwich, Kent.

IMPORTANT LISTS ON APPLICATION.

Surplus Clearance DAFFODIL BULBS, in prime condition for Pots, Beds, and to Naturalise, at greatly reduced prices. Conference Michaelmas Daisies and Sunflowers. Choice Single and Double Peonies. Choice Iris, Tall and Dwarf. Choice Hellebores and Lilies. Choice Gladioli, Carnations, Picotees, and Pinks. BARR AND SON, 12, King Street, Covent Garden, London, W.C.

To the Trade.

NUTTING AND SONS have posted their Fifty-first Annual Trade CATALOGUE of Garden and Flower Seeds to all their Friends; if not received, another Copy will be sent on application. Seed Warehouses, 106, Southwark Street, London, S.E.

ROSES! ROSES!! ROSES!—Plant now

100 strong dwarf, H.P. Roses for 30s. The finest in the Trade. Send for Sample Dozen, 5s. Cash with Order. CATALOGUES, free on application. C. H. GORRINGE, Roselands Nursery, Eastbourne.

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ENGINEERS to Her Majesty, H.R.H. the Prince of Wales, H.M. Government Admiralty Department, War Department, Royal Horticultural Society, Royal Botanic Society, Parks, and Public Buildings. Patentees of the Duplex Upright Tubular Boilers. King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT

MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney. W.M. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Wednesday Next.

500 Lots of HYACINTHS, TULIPS, NARCISSUS, and other DUTCH FLOWER ROOTS; PALMS; 49 Lots of GREENHOUSE and other FERNS, from an English Nursery, &c.

MESSESS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, December 30, at half-past 12 o'Clock.

On view morning of Sale, and Catalogues had.

Friday Next, January 1, 1892.

IMPORTANT SALE of ESTABLISHED and IMPORTED ORCHIDS, from a well-known Private Collector.

MESSESS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, Jan. 1, 1892, at half-past 12 o'Clock, about 60 or 70 lots of fine ESTABLISHED ORCHIDS, from a private collection, including a very grand *Cypripedium*, amongst them *Niobe*, *Grande*, *Leannum superbum*, *Cymbidium superbum*, *Subralia xantholeuca*, 35 bulbs; *Subralia virginalis*, and several large plants of *Coleogyne cristata*.

51 lots of DENDROBIUMS, CATTLEYS, ODONTOGLOSSUMS, and CYPRIPEDIUMS, from another private collection. 100 lots of ESTABLISHED ORCHIDS, another Property, including *Cypripedium Morganianum*, *Harrisianum superbum*, *Coleogyne cristata alba*, *Laelia elegans Bluntii*, *Odontoglossum elegans*, *Laelia alba*, and other valuable species; an importation of 500 *Dendrobium McCarthiae*, 500 *Vanda spathulata*, 500 *Vanilla Pflanzensap*, received direct for unreserved Sale.

On view morning of Sale, and Catalogues had.

Friday, January 8, 1892.

PRELIMINARY ANNOUNCEMENT.

LINDEN'S GRANDEST DISCOVERY: CATTLEYA REX, JAMES O'BRIEN.

THE MOST FAMOUS ORCHID EVER INTRODUCED.

J. LINDEN, the discoverer and first introducer of nearly all the best Cattleyas in cultivation, viz. CATTLEYA AUREA, AMETHYSTOGLASSA, GIGAS, ELBORADO, TRIANÆ, WARDQUIANA (LABIATA AUTUMNALIS), &c., confidently recommends—

CATTLEYA REX

as the
FINEST OF THE GENUS.

CATTLEYA REX FLOWERS in DECEMBER and JANUARY.

Some amateurs have stated CATTLEYA REX to be a grand form of *Cattleya aurea*, with white sepals and petals, but it is a QUITE NEW TYPE.

CATTLEYA REX is described by JAMES O'BRIEN in the *Gardeners' Chronicle*, December 13, 1890.

Sepals and petals are creamy-white. The labellum is of the richest crim-on, of various shades—from the rosy hue to the purple tint—veined in a beautiful manner with golden-yellow, all worked in to form a richly colouring marbling. "It is a *Wondrous Piece of Colouring*."

Mr. R. JOHNSON, Sturt Hall Gardens, Whitefield, Manchester, writes to Messrs. LINDEN:—

"The CATTLEYA REX has flowered with us, and a grand thing it is. We have had some of the principal importers of Orchids here to see it; they think your plate in *Lindena* (English edition, Part I., 1891) a true representation of the flower, but the lip of our flower is finer than your Plate."

MESSESS. PROTHEROE AND MORRIS are favoured with instructions from Messrs. LINDEN, L'Horticulture Internationale, Brussels, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, January 8, 1892, at half-past 12 o'Clock, the whole of the above importation, just to hand in capital condition.

The plants have been collected by Messrs. Linden's intrepid collector, M. C. Elmer, with the greatest difficulties, who has searched with hundreds of natives for two years after this grandest Cattleya, and only succeeded in discovering those offered.

He states that "it is impossible to find any more."

A portrait made from a plant flowered in Monsieur Warocque's collection will be on view on the day of Sale.

On view morning of Sale, and Catalogues had.

WANTED TO RENT, near a good Town, 500 to 1000 feet run of good GLASS, and about 2 acres of LAND. Particulars to J. R. 3, Wandle Street, Hull.

Toothing.

TO BE LET, about 12 Acres of MARKET-GARDEN GROUND, in good condition. Near two Stations. Rent, £70 per annum. Crops and Tenant-right at a valuation.

Particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

TO BE LET, 14 miles from London, on the Bath Road, HEATHROW FARM, Harmondsworth, Middlesex, near Mielmas next; contains 178 acres of good Arable and 44 of Meadow Land. Let as a whole, or divided into three or four Market Gardens. The House and Buildings are 2 miles from West Drayton and Hayes Stations (G. W. R.), also Feltham and Ashford Stations (S. W. R.). No Agents need apply.

For particulars, apply to WALTER C. RICHMOND, Wrotham Park Estate Office, Barnet, Herts.

ARTHUR L. BULLEN,
WHOLESALE FLOWER SELLER AND GROWER,
33, EXETER STREET, COVENT GARDEN,
Stands, Nos. 271 and 272, Flower Market, Covent Garden,
and Highfield Nursery, Bromley Common, Kent.

Having been established nearly twenty years in Covent Garden Market, A. L. B. has a daily demand for Choice Flowers, and giving personal attention to all consignments, he is thus enabled to command full market prices for same.

THE TOWER FURNISHING COMPANY
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Manufacturers; one, two, or three years' Credit without
Security. Purchasers have the choice of 100 Wholesale Houses.
Call or write for Prospectus.

Address, SECRETARY, 43, Great Tower Street, E.C.

PICTURESQUE ROCK SCENERY.—Forming
Waterfalls, Lakes, and Streams, Ferneries, Winter
Gardens, Alpinees, &c., as in hundreds of places abut the
kingdom, including at Aldenham House, Elstree, so faithfully
illustrated in this journal of November 21, executed by
PULHAM AND SON, 50, Finsbury Square, London, E.C., and
Broxbourne, Herts. Photo Illustrated Book sent for inspection
on receipt of twelve stamps.

Myatt's Prolific Kidney Potatoes.

W. W. JOHNSON AND SON, SEED
GROWERS and MERCHANTS, Boston, offer the above
in quantity. Price on application.

Trade Offer of Large Palms.

W. ICETON has a large Stock of the lead-
ing kinds of Decorative PALMS, from 6 to 25 feet
high, fit for Conservatory and House Decorations; *Dracenas*,
Bamboos, & *Foliage Plants*. Lowest Prices quoted on application.
W. ICETON, Putney, S.W.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES
OF THE VALLEY in the Kingdom, offers 3-year-old
flowering Crowns for forcing, and 2 and 1-year old Crowns for
planting out, of unsurpassed quality. Hundreds of testimo-
nials. Time of sending out, November 1 to May 1. Prices
and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appoint-
ment to H.R.H. the Prince of Wales), Dersingham, King's
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THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES,
GARSTON, NEAR LIVERPOOL.

Have just received large and fine importations of
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ORCHIDS,

CATTLEYA AUREA,

CATTLEYA GIGAS SANDERIANA

(including C. AUREA and C. HARDYANA),

CATTLEYA TRIANÆ of the finest type

(including some of the pure white forms),

ODONTOGLOSSUM VEXILLARIUM,

ODONTOGLOSSUM MIRANDUM,

ODONTOGLOSSUM WALLISII,

ODONTOGLOSSUM LUTEO-PURPUREUM.

The Company have also secured a fine lot of
the NEW and BEAUTIFUL

COCHLIODA NOEZLIANA.

Full Particulars on Application to the Company.

Special Cheap Offer to the Trade and large Planters.

ISAAC MATTHEWS AND SON
have large quantities of the under-mentioned trees to
offer cheap;—100,000 RHODODENDRONS, Early, White,
Scarlet, Pink, and other varieties, fine plants; and
500,000 Ponticum and Seedling Hybrids, various sizes, from
1 to 4 feet, by the 100 or 1000; 500,000 THORN QUICK, four
and six-year old, extra strong; COMMON ASH, 3 to 4 feet
and upwards; MOUNTAIN ASH, 6 to 12 feet; BIRCH, 8 to 9,
9 to 10, and 10 to 12 feet; HORSE CHESTNUTS, from 2 to 10
feet; also a large quantity of Horse Chestnuts, 12 to 15 feet,
and specimen trees for avenue-planting. ENGLISH YEW,
ELMS, and HORNEBEAMS, 8 to 10 feet; AUSTRIAN PINES,
fine trees, 3 to 8 feet; recently-transplanted POPLARS, varie-
ties, 6 to 12 feet; SPRUCE, for Christmas Trees, also for
Forest Planting; AUCUBAS, HOLLIES, BOX, CUPRESSUS,
IVIES, LAURELS, &c.

CATALOGUES on application.

The Nurseries, Milton, Stoke-on-Trent.

EXHIBITIONS.

BOURNEMOUTH and DISTRICT CHRYS-
ANTHEMUM and HORTICULTURAL SOCIETY.

NEXT EXHIBITION, NOVEMBER 9 and 10, 1892.

JAMES SPONG, Secretary,
The Gardens, Lindisfarne, Bournemouth.

FOR SALE, a fine specimen ENCEPHA-
LARTOS VILLOSUS and CATAKIDZAMIA MAC-
LEAYI. For particulars, apply to—
GEORGE JACKMAN & SON, Woking Nursery, Surrey.

Fruit Trees a Specialty.

APPLES, PEARS, PLUMS, STRAW-
BERRIES, and all sorts of Small and Hardy Fruits
grown in immense quantities. The best of the Old and New
Varieties either to Grow for Market or Private Consumption.
Special quotations for quantities. Descriptive CATALOGUE
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Hereford.

To Noblemen and Gentlemen Planting.

FOR IMMEDIATE DISPOSAL, large
LAURELS, of sorts, bushy, from 4 ft. high and upwards;
SCOTCH FIR, from 2 feet 6 inches to 8 feet; SPRUCE,
PINUS AUSTRIACA, PINUS LARICIO, Red-twigged LIMES,
CHESTNUTS, OAK, ASH, SYCAMORE, WALNUT, YEW,
&c., fine stuff for instant effect. As the ground must be cleared
this Autumn, no reasonable offer refused. All goods free on rail.
C. F. MILLAR, The Nurseries, London Road, Chippendale.

DOBBIE'S CATALOGUE and COMPETI-
TORS' GUIDE for 1892.—25th Annual Edition, 160 pages,
illustrated. Described by one of the greatest authorities in
England as "the most useful list published in the trade." Will
be ready on January 1, and will be sent gratis to all who
apply for it and enclose *3d.* to cover postage.—DOBBIE AND
CO., Seed Growers and Florists, Rothsay, Scotland.

SHORTIA GALACIFOLIA.—

Per 100 Strong Plants, 40s.

See *Gardeners' Chronicle*, March 30, 1889; *Garden*, Aug. 30,
1890; and *Ed. Mag.*, Feb. 7, 92.

This is one of the prettiest and most interesting of American
plants; it is a dwarf, hardy herbaceous plant, with bell-shaped,
pure white flowers, and roundish, leathery leaves, which turn
a deep red in the autumn.

C. G. VAN TUBERGEN, JUNR., Harlem, Holland.

GROUND REQUIRED.

TO BE SOLD, CHEAP.

10,000 LAUREL TREES, 1½ to 2 and 3½ feet.

5000 CYPRESS MACROCARPA, 3 to 5 and 8 feet.

5000 SILVER FIR, 2 to 2½ feet.

2000 GREEN EUONYMUS, 1 to 2 and 2½ feet.

Special offers on application.

HUMPHREY GRIFFITH, Pionly Nursery, Pwllheli, Wales.

To the Trade.

A COPY of our Wholesale LIST of AGRI-
CULTURAL, GARDEN, and FLOWER SEEDS for
1892, has now been posted to all our Customers.

In case of mis-couring, another copy will be promptly sent
on application to

JACOB WRENCH AND SONS, Limited, 39, King William
Street, London Bridge, London, E.C. Established 1750.

Flower Roots.—Carriage Paid.

DICKSON AND ROBINSON
offer the under-mentioned in first-size bulbs, and in
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HYACINTHS, named vars. for pots, at 3s., 4s., and 6s. per doz.

POLYANTHUS NARCISSUS, best vars., at 2s. and 3s. per doz.

LILIUM LANCIFOLIUM ALBUM, 9s. doz.; RUBRUM, 6s. doz.

GLADIOLUS BRONCHLEYENSIS, 4s. 6d. to 6s. per 100.

GLADIOLUS, Lemoine's New Hybrids, in mixture, 20s. p. 100.

TUBEROSE "THE PEARL," Double, 20s. per 100, 3s. per doz.

Seed Warehouse, 12, Old Millgate, Manchester.

TELEGRAPH CUCUMBER, TELEGRAPH.

The Old True Stock of Kollinson.

A Prodigious cropper, and unsurpassed for Market Work.
Seed, just harvested, 1s. per packet; 25 Seeds, 1s. 6d.; 100
Seeds, 4s. Post free, Cash with Order. Price per ounce on
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Approach, Charing Cross, W.C.

FERNS! FERNS!—Trade.—Greenhouse and

Stove, 25 saleable sorts, 12s. per 100; out of pots, 10s.
Large A. cuneatum, in 18s, 6s. per doz. Large Ferns, 10 sale-
able sorts, Arali, Sieboldii, Primulas, Solanums, superior stuff,
all in 4s, 5s, 6d. per doz. Palms, Ficus, Erica hyemalis, and
Cyclamen, in 4s, 12s. per dozen, for bloom and fine foliage
cannot be better. P. tremula, and A. cuneatum, selected bushy,
for potting on, 16s. per 100. Packed free, Cash with Order.
J. SMITH, London Fern Nurseries, Longhorn Junction, S.W.

SHRUBS and CONIFERÆ.—American

Arbor-vitæ, 2½ feet, 20s. per 100; Berberis aquifolium,
2 feet, 16s. per 100; Box Tree, 1½ foot, 12s. per 100; Coro-
naster microphylla, 2 feet, 12s. per 100; C. Simonsii, 3 feet,
12s. per 100; Escallonia macrantha, pot, 2 feet, 21s. per 100;
Laurel, Common, 1½ foot, 10s. per 100; 2 to 2½ feet, 14s. per
100; 3 to 3½ feet, 20s. per 100; rotundifolia, 2 to 2½ feet, 16s.
per 100; Portugal Laurel, 2 to 2½ feet, 22s. per 100; Rhodo-
dendron ponticum, 1½ to 2 feet, 25s. per 100; 2 to 2½ feet,
32s. per 100; 3 feet, 40s. per 100 full of buds; Yews, Eng-
lish, 1½ to 2 feet, 24s. per 100; 2 to 2½ feet, 30s. per 100;
Araucaria imbricata, 3 to 3½ feet, 30s. per doz.; 4 feet, 30s.
per doz.; Cupressus Lawsonii, 2 to 3 feet, 20s. per 100; 3 to 4 feet,
30s. per 100; Erecta viridis, 2 to 2½ feet, 30s. per 100; 3 to 3½
feet, 40s. per 100; Picea Nordmannia, 2 feet, 60s. per 100;
2½ to 3 feet, 12s. per dozen; Retinospora plumosa, 2½ feet, 30s.
per 100; 3 to 3½ feet, 50s. per 100; Thuya Libanii, 3 to 4 feet,
30s. per 100; 5 feet, 50s. per 100; 6 feet, 70s. per 100; 7 feet,
extra, 80s. per 100; Thuopsis dolabrata, 2 feet, 40s. per 100;
2½ feet to 3 feet, fine specimen, 14s. per dozen; 4 to 5 feet, 4s.
each.

GARLIES MITCHELL, Nurseryman, Stranraer.

PALM SEEDS. SEASON 1892.

I have much pleasure in offering the following Palm Seeds, a large proportion of which are guaranteed to germinate.

- KENTIA BELMOREANA (Lord Howe Island) ... 20s. per 1000.
FOSTERIANA 20s.
CANTERBURYANA 40s.
MOOREII 40s.
ARECA BAUERII (Norfolk Island) 10s.
CORYPHA AUSTRALIS (New South Wales) .. 6s.
SEAFORTHIA ELEGANS 6s.
PTYCHOSPERMA ALEXANDRE (Queensland), 20s.

As these seeds ripen at different times, and all require immediate despatch, orders should reach here—for Kentias and Areca, in February; Seaforthia, in April; Corypha, in August; and Ptycho-perma, in November.

All Orders accompanied by remittances in full, for not less than £10 worth in one shipment, will be delivered free at Marseilles, Antwerp, Bremen, or London. Consults Fees to be added to American Orders for free delivery at San Francisco.

Also SEEDS and PLANTS of all our NATIVE TREES and SHRUBS.

F. J. FERGUSON, NURSERYMAN, DOUBLE BAY, SYDNEY, N.S.W.

FRUIT TREES—FRUIT TREES.

JOHN PERKINS AND SON offer the following STANDARD APPLES, PEARS, PLUMS, CHERRIES, and DAMSONS, 5 to 6 feet stems, suitable for Orchards; very cheap by the dozen, hundred, or thousand. All the most popular sorts in cultivation. Special offers on application. 52, MARKET SQUARE, NORTHAMPTON. Nurseries, Billing Road.

SMALL SHRUBS and CONIFERÆ.—Abies orientalis, 4-yr., 40s. per 1000; Cupressus macrocarpa, 1-yr., 30s. per 1000; C. Lawsoniana, 1 foot, 40s. per 1000; C. erecta viridis, 8 to 9 inch 30s. per 1000; C. canadensis, 1 foot, 30s. per 1000; Escallonia macrantha, 9 inch, 8s. per 100; Ivy, Irish, 2-yr., 50s. per 1000; Lilac, purple, 2-yr., 30s. per 1000; Laurestinus, 6 to 8 inch, 7s. per 100; Oaks, evergreen, 2-yr., drilled, 10 inch, 50s. per 1000; Pinus cembra, 3-yr. transplanted, 40s. per 1000; P. Nordmannia, 2-yr. transplanted, 60s. per 1000; P. nobilis, 2 year transplanted, 6s. per 100; Privets, oval, 9 inch, 8s. per 1000; ditto, 10 to 12 inch, 14s. per 1000; Retinospora plumosa, 8 inch, transplanted, 40s. per 1000; R. aurea, 6 to 8 inch, 8s. per 100; R. squarrosa, 8 inch, transplanted, 40s. per 1000; Rhododendron ponticum, transplanted, 4 to 6 in-h, 40s. per 1000; 6 to 9 inch, 55s. per 1000; Thuia Lobbia, 10 to 12 inch, 30s. per 1600; 15 to 18 inch, extra, 40s. per 1000; Veronica Traversii, 8 inch, 7s. per 100; V. Pinguifolia, 6 inch, 8s. per 100; Yew, English, 3-yr., 1-yr. transplanted, 20s. per 1000; Irish Yew, 8 to 9 inch, 8s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

ANTHONY WATERER invites from intending Planters an inspection of the following well-grown and finely-rooted EVERGREENS:—

- ABIES CANADENSIS (Hemlock Spruce), 5 to 5 feet.
DOUGLASHI, 6 to 12 feet.
GLAUCA, 5 to 8 feet.
HOOKERIANA (Pattoniana), 3 to 6 feet.
CEDRUS ATLANTICA, 4 to 8 feet.
GLAUCA, 3 to 6 feet.
LIBANI (Cedar of Lebanon), 4 to 10 feet.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
LUTEA (Golden), 3 to 6 feet.
JUNIPERUS CHINENSIS, 3 to 10 feet.
AUREA (Golden Chinese Juniper), 3 to 8 feet.
PICEA CONCOLOR, 3 to 7 feet.
GRANDIS, 5 to 8 feet.
LASCARPA, 4 to 8 feet.
MAGNIFICA, 3 to 5 feet.
PUNGENS, 1 1/2 to 4 feet.
GLAUCA (Blue Spruce), 1 1/2 to 4 feet.
PINUS AUSTRIACA, 3 to 7 feet.
LARICIO, 3 to 4 feet.
THUOPSIS BOREALIS, 4 to 7 feet.
DOLABRATA and VARIEGATA, 3 to 5 feet.
THUIA LOBBII (gigantea), 5 to 9 feet.
OCCIDENTALIS LUTEA (Golden), 3 to 4 feet.
WELLINGTONIA GIGANTEA, 3 to 7 feet.
YEWS, Common, 3, 4, 5, and 6 feet.
Golden, of all sizes up to 10 feet, in various forms, Pyramids, Globes, and Standards, in point of variety, size, and quality unequalled.
Golden Seedlings, 3, 4, to 8 feet.
Irish, 5 to 10 feet.
Golden, 3 to 6 feet.
AUCUBA JAPONICA, 2 1/2 to 4 feet.
BAMBUSA METAKE, fine clumps, 4 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, and 8 feet.
HOLLIES, Common, from 3 to 10 feet.
ALTAICLERENSE,
HODGINS or NOBILIS,
LAURIFOLIA,
MYRTIFOLIA, } 3, 4, 5, up to 10 feet.
SCOTICA,
Yellow berried, and other sorts
Variegated, of sorts, 3, 5, up to 10 feet.
Golden Queen, 4, 5, up to 10 feet.
Silver Queen, 4, 5, up to 10 feet.
Weeping Perry's (Silver Variegated), on straight stems, with heads of 10 to 15 years' growth.
New Golden Weeping.
RHODODENDRONS, 3 to 8 feet.
Knap Hill Nursery, Woking, Surrey.

The Gardeners' Royal Benevolent Institution.

NOTICE is HEREBY GIVEN, that the ANNUAL GENERAL MEETING of the Members of this Institution will be held at "Simpson's," 101, Strand, on FRIDAY, January 15 next, to receive the report of the Committee of Management, to elect the usual Officers, to transact General Business, and to place THIRTEEN PENSIONERS on the Funds, SEVEN of whom will be elected by Ballot.

The Chair will be taken at 3 o'clock, and the Ballot will close at 5 o'clock precisely.

The Voting Papers have all been issued, but should any subscriber not have received a copy, early intimation is requested to the Secretary.

GEORGE J. INGRAM, Secretary.

Offices, 50, Parliament Street, S.W.

FOR ORCHIDS, and GARDENERS TO Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

FRANK CANT'S ROSES.

CHEAP AND GOOD.

Standards, from 21s. per dozen.

Dwarfs, from 6s. per doz., or 40s. per 100.

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CHARLES NOBLE

HAS FINE BUDDED

- RHODODENDRONS, named kinds.
ANDROMEDA FLORIBUNDA.
AZALEA, finest Ghent kinds.
Ditto, Seedlings.
Ditto, MOLLIS, 10 to 80 buds.
Ditto, OCCIDENTALIS.

DWARF ROSES, H. P., B., and TEAS.

- THUOPSIS BOREALIS
THUIA LOBBII
Ditto, AMERICANA } 3 to 6 feet.
CUPRESSUS LAWSONIANA
HYPERICUM CALYCINUM
PORTUGAL LAURELS, 2 to 3 feet.
HARDY HEATHS.
CLEMATIS, 3 and 4 years old.

The General Assortment of NURSERY STOCK will be found superior in every way.

BAGSHOT, December, 1891.

CHRYSANTHEMUMS.

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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 26, 1891.

HAMPTON COURT, HEREFORD-SHIRE.

IN *Mansions and Manors of Herefordshire*, the author, Mr. Robinson, pronounces Hampton Court, Leominster, to be the first of the residences of Herefordshire in interest and beauty. I have always held, according to an old adage, that "comparisons are odious." Hampton Court is indeed lovely in its valley on the banks of the Lugg, with its beautiful lawns and gardens, its superb timber trees, giants growing in a rich soil, with parks around and woods enveloping the whole, like the walk which Milton describes as surrounding Paradise, so that his Satanic majesty, arriving from the nether regions, was almost baffled by it. Notwithstanding the beauties of Hampton Court, which stood confessed as I entered its precincts, I cannot forget Shobdon Court, or Bryngwyn. It is not the duty of a writer who makes sketches like the present to institute comparisons, but he ought to discriminate, and it must, therefore, be stated that Shobdon Court, the residence of Lord Bateman, stands higher and commands a wider landscape. The timber can hardly be excelled. The house is an excellent example of the Queen Anne style, not easily surpassed for comfort and handsome architecture; and the absence of running water might, with some persons, prove a recommendation. Bryngwyn is a modern house, which was built by the father of the present owner, Mr. Rankin, M.P., but it stands on an old site, is a first-class early English house, on high ground, with the Welsh hills in the distant prospect; and, in the foreground, a park enclosing a lawn of many acres, with the ruins of Old Bryngwyn, and as much timber, young and old, and as many handsome Conifers and groups of ornamental shrubs as heart could desire. Some persons prefer an unlevel surface immediately around a house, and a lawn sweeping downwards towards its further limits, and in that case they would find their ideal in Bryngwyn. Having now shown that the diversities of taste must always render comparisons dangerous, I may state that Hampton Court was sold in 1510 to that progenitor of an illustrious family, Sir Humphrey Coningsby, whose descendant, in 1808, sold it to the grandfather of Mr. J. H. Arkwright, the present owner. The house has been greatly altered from time to time; it is now a considerable pile, with an entrance gateway in a massive tower leading into a quadrangle, around which the house is built.

The surroundings of the house are charming; the Lugg, where millions of trout and grayling

are bred by the owner, flows in a winding channel through the park, and near the house, and its steep and wooded banks close the view. Within these limits, the sylvan beauty and seclusion of Hampton Court can hardly be surpassed. The soil is rich, and the timber superb. All the Engl's trees thrive here, and attain the largest proportions common to their kind. There are Oaks, Sweet Chestnuts, and Beeches in the park and grounds, quite first-rate in height and size, and there are many specimens of Planes which it would be hard to match for size and beauty. When those on the Thames Embankment have attained the same stately proportions, that noble boulevard will have become one of the twenty or thirty wonders of the world, as the 30-mile avenue of *Cryptomeria japonica* in Japan, is already. Three great English Elms, companion trees on the lawn, on the west side of Hampton Court, measure 18 feet and 20 feet girth, at 5 feet from the ground, with tall trunks and lofty heads. Cedars of Lebanon are scattered about in profusion, and like the other giants of forest or park, they have grown in this rich little vale of the Lugg to uncommon sizes. Two of the handsomest of the giant Cedars stand like guards on the south front of the house, one at each end, and noble fellows they are, being among the stoutest and tallest of their race, and wearing handsome clothing without a flaw, and richly set with cones. Among the prime ornaments of the several acres of level lawn on the south side of the house, are Cedars of Lebanon, Copper Beeches, and the *Taxodium sempervirens*. The *Cryptomeria japonica* is green and healthy here at all seasons. The Yew is another conspicuous tree, and when it grows in unrestrained beauty, feathered to the ground and rich in branch and foliage, few trees are more ornamental, none more enduring. A row of large Irish Yews, in one part of this extensive lawn, is deprived of its funereal aspect by a thick and lofty belting of the common Laurel in the background, and by other things which relieve the formal outlines of these dark-leaved shrubs. One lingers long on such a lawn, and before quitting it I should like to mention one of the prettiest pictures devised in one part of it by a skilful hand. Taking a great Cedar of Lebanon as a background, clumps of Ivy have been heaped over rockwork, or some other structure, now completely covered. In front of this green and broken wall, some flower borders enclose a fountain. In familiar language, this is a charming bit, and within the sunk fence which divides the park from the lawn there are many other charming "bits." And so there are on the high slopes of the deer park, across the Lugg, where deer and a little herd of long-haired white goats roam at will amidst ancient timber, forming a picture worthy of a forest scene in *As You Like It*. In walking further afield, one falls in with the homestead of the Home Farm and its large orchard, where Hereford cider is produced, and although the cider of the country cannot always be commended, the orchards and rich pastures on the banks of the Herefordshire streams are always charming.

I cannot refrain from noticing Mr. Arkwright's cattle. In fact, his beautiful Herefords grazing in the pasture fields, a herd here and a herd there beneath the trees, are among the characteristic ornaments of Hampton Court, whose owner is one of the most distinguished of the breeders of Hereford cattle. His famous poultry yards are another of Mr. Arkwright's amusements, and as an ex-M.F.H., his reminiscences are, no doubt, of a very interesting character. With his many occupations, and living in an

atmosphere fragrant with the odour of good deeds, his country life must be a happy one.

I had forgotten the Roses. They are propagated in a compartment between the lawn and the kitchen garden, and even the woodland paths are made bright with them. The houses show skilful management, the collection of tropical plants including several Ferns and other specimens, which are not of every-day occurrence—and all are propagated at home in a frame in the stove fitted with extra pipes. In walking round the fruit garden, I observed that the espalier Apples and Pears, then ripening their fruit, had their summer shoots partly cut through and bent down as the fruit began to swell. This, Mr. Arkwright thinks, assists in ripening the fruit, and improves its flavour. *H. E.*

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM × IMSCHOOTIANUM, *hyb. nov.*

This is a very interesting *Odonoglossum* which appeared in the collection of M. A. Van Im Schoot, of Mont St. Amand, Gand, Belgium, in May, 1889, and which is so precisely intermediate between *O. Lindleyanum* and *O. tripudians*, that there can be little doubt of its being a natural hybrid between them. The segments are remarkably like those of the first-named, except that the markings are a little more purple, and the same may be said of the lip, except that it is broader, and the crest and markings approach more closely to those of *O. tripudians*. The column is also much like that of *O. Lindleyanum*. These two species grow together, and the appearance of a natural hybrid between them is just what might be expected, considering the freedom with which *Odonoglossums* hybridise together in a wild state. I have not, however, found any evidence of the earlier appearance of this particular cross, unless it be one which appeared with the Liverpool Horticultural Company at about the same time. That, too, bears strong evidence of *O. tripudians* in the lip, but the colour of the segments is much darker, though in shape they are very similar. Further materials will probably throw some additional light on this point. *R. A. Rolfe, Herbarium, Kew.*

BIRDS OF THE COMMONS AND WOODLANDS.

(Continued from p. 731.)

THE GRASSHOPPER WARBLER.

If you go for a walk on some heath early on a bright morning in May, you may hear a sound resembling the running out of a fisherman's reel. This sound will at one moment appear to proceed from some object close at hand, and the next moment sound as though it came from a distance. The owner of the voice, which will become silent directly you make the slightest noise, is the grasshopper warbler, a small greenish bird, which arrives in this country in April and stays with us till September. It is a distinctly shy bird, and not a very easy one to observe, partly on that account, and partly on account of its being such an accomplished ventriloquist that it is often very hard to know where to look for it. If you want to observe it closely, you must keep still for some time without making the slightest sound, when it will perhaps walk out from under some shrub close in front of you.

CHARACTERS OF BIRDS.

A good naturalist soon learns the characters of birds, and he uses this knowledge when making his observations. A very short acquaintance with the grasshopper warbler will teach you that it is very shy; the nightingale is passionate; the whitethroat

fussy and demonstrative; the goldcrest the essence of contentment, and so on. They each have their marked dispositions. The best way to make the sedge warbler show himself off, is to throw something at him; he is of a noisy excitable disposition, and will instantly commence to chatter, scold, and swear at you. But with its near relative, the reed warbler, it would be fatal to assume the offensive; throw a stone at a reed warbler, and you will simply frighten it out of its wits.

THE WHEATEAR, WHINCHAT, AND STONECHAT.

One of the first arrivals in England in spring is the wheatear. This handsome bird may frequently be seen on commons and places where there are waste lands, especially if bounded by stone walls, and it is also frequently seen on chalk downs and mountain sides. You cannot help noticing it on account of the white tail, which is very conspicuous in flight, and from which it derives its name: "wheat" being merely a corruption of "white," and "ear" being an Anglo-Saxon word, and having nothing to do with our word "ear." In districts where there are stone dykes, you see them perched on the top, always flying a few yards further away when you get within a certain distance. The stonechat and whinchat are also both birds of the commons, and are often mistaken for one another, although they differ in many respects. Both have reddish breasts and brown backs, but whereas the head of the stonechat is black, the whinchat has a clear white streak over the eye; and the stonechat stays with us all the year round, while the whinchat is only a summer visitor. The two may also be distinguished by their voices; the call of the whinchat having two syllables, that of the stonechat three. Both species are fond of Furze bushes, and the whinchat is also much attracted by railway banks, on which it frequently builds its nest; so that they may constantly be seen from the railway train.

"OVEN-BIRD."

When in the neighbourhood of Furze bushes, you may sometimes come upon a most beautiful oval-shaped nest, covered with lichens; this is the home of the long-tailed or oven-tit. There is a minute hole in one side of the nest for an entrance, and so small is the interior that when the bird is sitting on the eggs it has to fold its long tail over its back, and the end may sometimes be seen projecting through the doorway. They lay a large number of eggs, and it is wonderful how such a large family can be brought up with such limited accommodation. They are very sociable, and large family parties may sometimes be seen flying about in search of food.

There are four other kinds of tits which are resident in England. They usually fly about in flocks, and are very sociable and tame, as those who are in the habit of hanging up lumps of fat for them in winter are aware. As a family, they have frequently been accused of damaging buds and fruit, but there seems little doubt that they are on the whole extremely useful, for they destroy an enormous number of grubs and maggots. *A. H. Macpherson.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

LÆLIA GRANDIS TENEBROSA.

MR. HOLMES, gardener to Geo. Hardy, Esq., Pickering Lodge, Timperley, Cheshire, sends two flowers of a three-flowered inflorescence of this rare and showy Orchid, which he states was purchased from Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, and Park Road, Clapham. The expanded side-sepals reach eight inches. The sepals are just under and the petals just over an inch in width. The beautiful labellum, which is shaped like some of the varieties of *L. purpurata*, is bluish white, richly veined from the base to the centre with purple, which between the lines and on the front of the lip changes to light rose. The sepals and petals have the usual coppery tinge of the best varieties of this species

The plant is said to be not yet strong. When established and grown up to the Pickering Lodge standard, it will be a marvellous form.

ZYGOPETALUM LINDENI.

A flower of this compact and elegant new introduction of Horticulture Internationale, Parc Leopold, Brussels, reveals an unexpected addition to the Zygopetalums of the *Z. rostratum* habit and general appearance, even although some of the botanical features of this may not agree with that species. The lanceolate acuminate sepals and petals are pale brownish-rose, about two inches in length, and the

Sheen, on the borders of Richmond Park, has acquired the character of being among the foremost collections in the country. This is doubtless due to the care which Mr. Young, who has the charge of the collection, cultivates his plants. The most prominent feature recently was a houseful of rare Cypripediums and Phalenopsis, the latter being the more abundant. Glancing along either side of the house in which the plants are growing, one was struck by the large array of flower-spikes presented; all are of fine quality, and nothing meagre is to be seen among them. Magnificent plants of *P. Schilleriana* with well-marked leaves, in some cases more than

A large batch of *Masdevallia tovarensis* made a snowy bank in the *Masdevallia-house*. A lovely form of *Cypripedium Leeanum excellens*, but which Mr. Young calls *superbum*, was in bloom, a most desirable plant, and I have rarely seen a better form of it. *Oloctoglossum*s were pushing ahead, with stout well-formed flower-spikes that promised to make a fine show during the early spring months. *Juno*.

CULTURE OF TROPICAL ORCHIDS.

Herr Richard Pfau, of San José de Costa Rica, lays down the following general rules in his catalogue of tropical plants, Orchids, &c., for the guidance

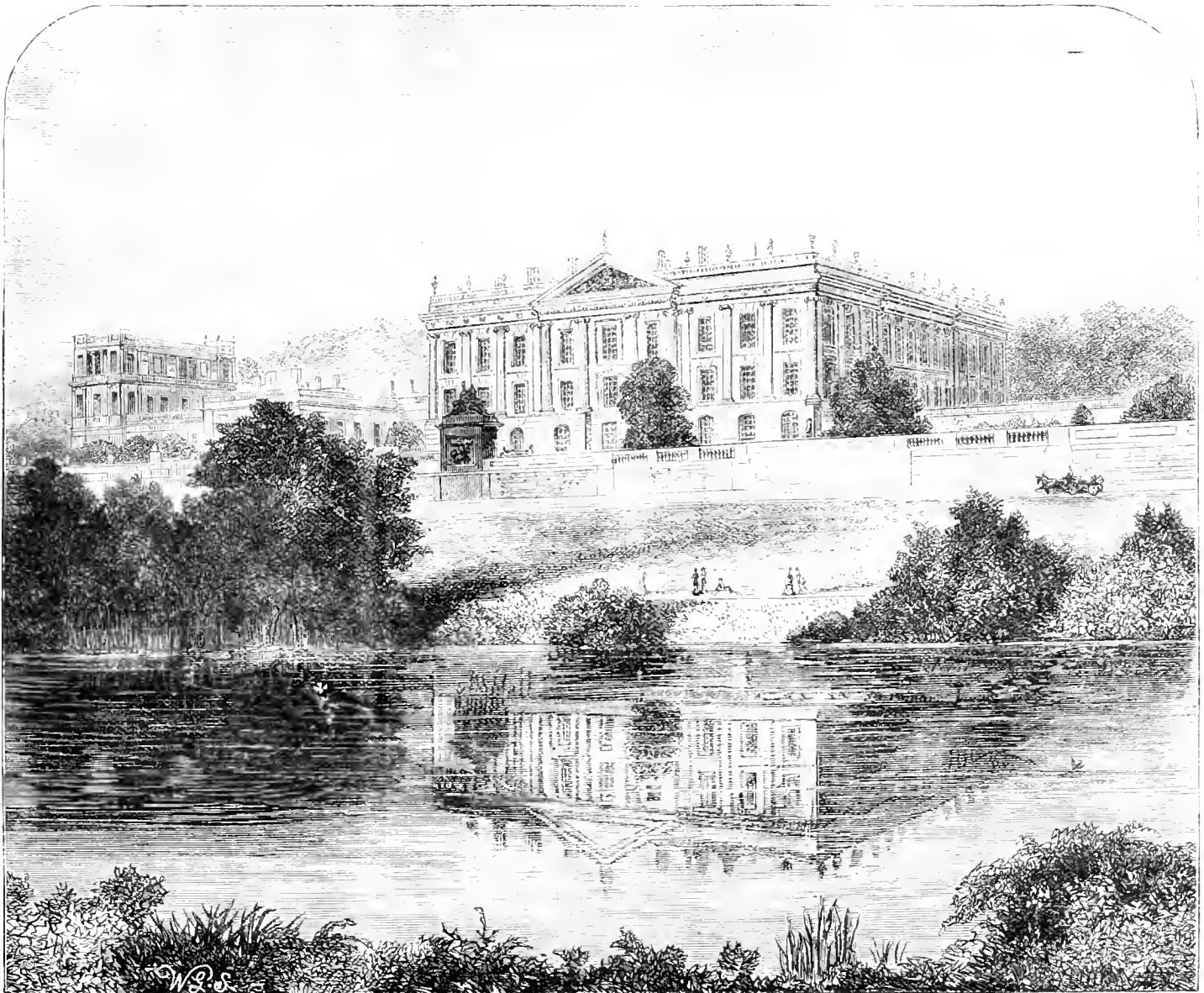


FIG. 169.—VIEW OF CHATSWORTH, THE SEAT OF THE DUKE OF DEVONSHIRE. (SEE P. 765.)

large ovate acuminate or nearly cordate white labellum is closely marked with crimson lines radiating from the fleshy, horse-shoe shaped callus at the base of the front. The fleshy column has two large hatchet-shaped wings, and the whole flower has a grace and novelty which should recommend it to all collectors of rare and handsome Orchids. It is a native of Venezuela, and the habit of the plant is similar to a strong-growing *Z. rostratum*.

PHALENOPSIS AT CLARE LAWN.

The collection of Orchids at the above pretty country residence of F. Wigan, Esq., situated at East

12 inches in length, and half as much in width, are subjects for admiration. *P. grandiflora*, *P. g. aurea*, *P. amabilis*, *P. violacea*, and others, were well furnished with flower-spikes. The Clare Lawn collection may almost claim to be unique in its possession of the rare and very beautiful *P. intermedia*, which had a spike of eight well-developed flowers, which are white, with a tinge of pink colour. Another very rare variety is *P. Portei*, which has large rosy-coloured flowers, much finer than those of *P. Schilleriana*. Other Orchids in flower were *Cattleya labiata*, many forms of *Laelia anceps*, including the white forms, which were just bursting.

of Orchid growers. His remarks are based on thirteen years' experience of the requirements and surroundings of tropical Orchids in their habitats in Costa Rica, Nicaragua, and certain parts of Columbia. He advocates the necessity of perfect drainage, and as thorough ventilation as is compatible with the necessary amount of moisture. If this be done, there is no fear of over-watering during growth. Baskets are preferable to pots, and the soil should be a mixture of potsherds, charcoal, and sphagnum—fibrous peat being only suited to strong feeders and semi-terrestrial species. Charcoal, saturated with ammoniacal gas, will strengthen the growth. Treat-

ment with rather cold water during summer will so harden many Orchids that they will survive the winter in an ordinary greenhouse or vinery.

RODRIGUEZIA PUBESCENS, *Lindenia*, t. 306.

Remarkable for its elegant pendulous racemes of white flowers. It is the old *Burlingtonia pubescens*.

CATTLEYA HARDYANA × VAR. LAVERSINENSIS, *Lindenia*, t. 305.

The variety here represented has the sepals marbled with pink on a light ground, the petals being of a deeper shade, and the front lobe of the lip very richly coloured. It appeared in the collection of Baron F. de Rothschild, Château de Laversine, France. *C. Hardyana* × is a hybrid between *C. Dowiana* var. *aureum* and *C. gigas*, and only occurs in that region of the Western Andes where the two species above-named occur simultaneously.

EGG-PLANTS.

SOME time ago, in passing a fruit shop in Regent Street, I saw in the window some fruits of the purple Egg-plant, *Solanum Melongena*. Of course, this is closely allied to the Tomato, but it does not appear to have taken the fancy of horticulturists; yet, when cooked, it is one of the most delicious of vegetables imaginable.

As there are Apples and Apples, so there are Egg-plants and Egg-plants. The white variety is sometimes cultivated in India, but it is the least valuable, as it is rather bitter; but the purple varieties are cultivated in fields everywhere, and much used by the natives and Europeans.

The best of all kinds which I have ever tried is one grown in Delhi, under the name of *Mároo Báingan*. *Báingan* is the native generic name of this plant, but *Mároo* is, I suspect, a corruption of the English word marrow, as, when cooked, its pulp has a marrowy delicacy. The fruit of this grows to the size of a child's head, and is of a light purple. I do not know the origin of the word *Báingan*. I cannot find this plant in De Candolle's *Origin of Cultivated Plants*. It may possibly be a South American plant, originally introduced into India by the Portuguese. The French call it Aubergine, and also *Melongène*; the Italians call it *Melingiana*; and the English in India often call it *Brinjal*. All these words, with the specific Latin name, *Melongena*, evidently have one derivation; and the Indian name, *Báingan* makes one suspect that it is a further corruption of the same name. In India, among dyers, the word *Báingni* has been adopted to indicate a purple shade of colour, so probably the cultivation of the plant is of old date.

As the French are fond of Aubergines, they should note that in Delhi are to be procured the seeds of a very fine variety. It is never certain, however, that a good variety in one place will maintain its fine character when grown elsewhere. Tobacco, Tea, Coffee, the Vine, &c., sufficiently show this; nevertheless, heredity, as they say in Hindostan, is *bari chiz* (a great thing); and it has often happened that a plant retains its good qualities in the country and soil of its adoption. Then, what is the use of man's intelligence if, having once got hold of a good plant he cannot make it stick to its character, or even improve it? We know that the Tomato in England is now a "how-is-it-we-ever-did-without-it" sort of both fruit and vegetable. The Aubergine ought, likewise, to hold in time a similar position as an adopted vegetable.

It is not impossible that such a fine thing has not taken the fancy of English growers because they have not hit off the right way of cooking it, although Anglo-Indian housewives must know a good deal about the way of managing it for the table; but they would like to find it in the shops at a reasonable price. I fancy it would admit of being grown in pots in summer, under glass, exactly as the Tomato is grown.

For the benefit of those who may happen to grow many plants of the purple variety, I herewith give

one of a dozen ways of cooking the Aubergine. In India, they have many varieties, some of them almost black, and as long and thin as Cucumbers; but the best I have ever tried is the *Mároo Báingan* of Delhi.

The rule is, first to "catch the best hare you can find." The stalk and calyx should be cut off, then the Aubergine sliced longitudinally, each slice of the thickness of about a quarter of an inch. Place them flat on a table or board, sprinkle salt over them, place another board on the top of them, and some weights on that. The object of all this is to drain off, by the help of the salt, the bitter juice which some kinds contain. I do not think the Delhi variety needs this trouble. Then wash off the salt, dry the slices in a cloth, and fry them in lard, or any other frying material. In Italy, they fry them in plenty of Olive oil (probably now they do it in Cotton-seed oil). In the olden time they used to call these fried slices of Aubergine, "quaglie" (quails), probably because they thought them delicious. Sometimes after drying in a cloth they are powdered with flour, which, when fried of a golden-brown, gives them a crumby appearance. Done in this way, they can be eaten with meat, or, French fashion, as a separate dish.

There are many other ways of cooking the Aubergine. Roasted, or boiled and peeled, and then squeezed in a cloth, they may be used in curries, in omelets, &c. They can be stuffed with force-meat and baked, and in several other ways; but as this is not a paper on culinary subjects, I shall end by stating that English growers and English cooks will be unwise if they do not take to the *Mároo Báingan* of Delhi. *E. B.*

THE BRENTFORD MARKET.

By a majority of 952 out of 1756 votes, the ratepayers of Brentford have sanctioned their Local Board of Health spending a large sum of money on the provision of a fruit, flower, and vegetable market at Kew Bridge. The proposal emanated from the Board in consequence of the multitudinous complaints received from time to time of the trouble caused to pedestrian and vehicular traffic by the congregation at Kew Bridge every morning of many hundred market-garden waggons, and with which the police seemed powerless to cope. As a matter of fact, costers and vendors of garden produce had established a market for themselves, and the authorities urged that the best way to meet the wishes of the townfolk would be to provide legal seats of custom. The move made was vigorously opposed in some quarters, and voting at a public meeting was very close, but the poll has cleared away opposition, and already the Town Surveyor, Mr. J. H. Strachan, has all the plans and drawings prepared. The land, which is to be purchased, consists of 2 acres, 2 roods, 30 poles, the property of Mr. Leopold de Rothschild, and situated on the main road from Brentford to London, close to Kew Bridge, and adjoining Kew Bridge Station on the North and South-Western Junction Railway. At present it is only proposed to deal with about one acre of the site, on which will be erected shops, and covered stalls, and standings will be laid down for waggons.

The business to be carried on in the shops to be erected will rest with the lessee, subject to certain ordinary restrictions, and already the Board has received applications from intending tenants. At the rear of the centre-shops is to be provided a coffee-stall. The covered stalls will consist of two rows, running backwards nearly the whole depth of space utilized, and below them will be a covered passage 50 feet wide, whilst the remaining three sides of the land will be devoted to five standings of waggons, each 11 feet wide, and by a paved way, 53 feet wide, between each. At present, there is no provision for stabling, but, with so much ground not utilized, there will be no difficulty in the construction of stalls for horses as occasion arises. From the situation, the promoters of the scheme are very sanguine of success,

and one went so far as to avow in public, that the market would rival Covent Garden. It is easily accessible from all the market gardens in the centre and west of Middlesex, and for conveyances from rural Surrey, Kew Bridge will do all that is needful, particularly now that the structure is to be widened, and its slopes improved. In the matter of railway facilities, the new market can vie with any in the kingdom, for if a branch line were run into its centre, garden produce could be transported direct north, south, east, or west by means of the Willesden Junction route, and at reduced expense to the consignees, the cost of carting being done away with. The price of the land is £3359 7s. 6d., and £4640 12s. 6d. is the estimated cost of laying-out and putting in order the market, which can be ready for occupation within twelve months of the Local Government Board sanctioning the necessary loans.

TREES AND SHRUBS.

POPLARS.

The white Poplar, *P. alba* of Linnæus, is a native of different parts of Europe, but has become naturalised to Great Britain and Ireland, where it reproduces itself by pushing up suckers from the roots; and as cuttings from the branches generally refuse to grow, these suckers should be carefully lifted and planted into nursery lines to form young trees. In cases where the roots do not produce suckers, the roots themselves may be extracted, formed into cuttings, and planted in nursery lines. It is but seldom that this species produces seed in this country, but the tree is often propagated by layering the shoots that spring from stools or roots left in the ground after the trees have been felled. The system of layering the shoots is the same as that given in my former article for the gray Poplar, and need not be repeated here.

There appear to be several varieties of this tree and it is a matter of much importance to planters to make sure that they propagate the best kinds when renewing their stock of plants. The distinguishing characteristics of the varieties are vigour of growth, hardness of constitution, size, colour, and shape of the foliage. The best kinds for ornament and utility are clothed with large deeply-lobed leaves of a dark green colour above, while the under surface is of a white silvery colour, and slightly coated with a soft downy substance.

The contour of the tree when young and in a vigorous state of growth is sharply conical, and when the leaves are agitated by the play of the wind, they exhibit a very attractive contrast of dark green and silvery-white colours, which never fail to attract the attention and admiration of the most superficial observer. This variety is generally known as *P. alba acerifolia*, and as it is of a hardy, robust constitution, I have planted it with perfect success as a standard at an elevation of about 1000 feet above sea-level. There is another variety known as the White Egyptian Poplar, the leaves of which are of a large size, with a fine glossy surface on the upper side, and the colours of green and white remarkably well pronounced; but as it is not so hardy as the former variety, it is best suited for planting as a standard, or mixed up with other trees in ornamental plantations to afford contrast and variety at low elevations. The whole of the Poplar tribe thrive best in a soft, deep soil, rich in organic matter; but in cases where it is desirable to establish standard trees on poor thin gravelly soil I have found it to be a capital plan to mix a quantity of peat-bog with the staple at the spots where the trees are to be planted.

This Poplar occasionally suffers damage in dry weather by a fungus blight, which appears on the back of the leaves about the time of harvest, when the leaves then gradually lose their vitality and fall to the ground, and by which means the tree is prevented maturing its young wood before winter; and I need hardly say that the progress of the tree is often

retarded to a considerable extent for several years after the attack. This disease is more prevalent in the east of Scotland and England than in Ireland, where the climate is more moist and genial, and the trees not apt to suffer so much from drought. The leaves of trees affected with this fungus should be collected as soon as they fall to the ground, and burned, in order to kill the fungus spores, and prevent them spreading.

When the wood of the white Poplar is cut up for use, it is found to bear a clean white colour, and a soft silky appearance when dressed and polished, which enhances its value very much for ornamental work of various kinds.

The Ontario Poplar, *P. canadensis* (Aiton), syn. *P. macrophylla* (Lindley), is a native of America, and in this country is generally called the Ontario Poplar. In this country it only attains a medium size of some 40 or 50 feet in height, and as its branches are remarkably brittle, and easily broken off by the wind, it should never be planted on exposed situations. When branches are torn off by wind, they often leave a scar on the trunk, which in due time becomes affected with parasite fungus, which lays the foundation for rot and decay, and renders the wood of little value, and accelerates the death of the tree. On inspecting some plantations last spring, I found several trees of this species badly affected with fungus growths. One tree in particular showed the fungus established at four different spots along the trunk. This fungus is known by the name of *Nectria distissima*, and generally appears in the shape of small warts around the margin of a wound on the host plant. This fungus, however, does not confine its attacks to any one species of tree, as I have found it attack many species of trees and shrubs in a similar way to that described.

The best remedy is to pare the lips of the wound with a sharp knife, remove all dead matter to the fresh solid timber, and finish by dressing the surface with tar to prevent the ingress of water and kill the fungus spores. The Ontario Poplar has very large leaves, the under-surface of which is of a whitish colour; in early life it makes rapid progress, and soon betokens a furnished appearance to the spot where it is planted. It is propagated by cuttings, and is best suited for planting on grounds of limited extent. *J. B. Webster.*

THE HOLY CITRON OF MOROCCO.

ONE of the most important articles of produce and export from Mogador appears to be Citrons, which are reported to have been shipped to the value of £592 in 1890. The larger proportion of these consist of the ordinary Citron of commerce, a very large and thick-rinded fruit, often of curiously-irregular shape, some being of bifurcated or trifurcated form. They are sent away in casks, preserved in brine, to be converted into candied peel; a good many, however, are used locally in native households as preserves or crystallised fruit. Consul Payton says there is also a curious, rare, and highly-esteemed holy fruit of this genus which is sold at Mogador at an average of 4*d.* per fruit, yet appears never to be eaten. It is the sacred or holy Citron of the Jews, and is carried to their synagogues at the feast of tabernacles, it having an emblematical significance. So highly-prized is this fruit by the faithful observers of Israelitish traditions, that specimens without blemish fetch as much as 4*s.* each at Mogador, and in England they are said to be sold at certain synagogues at the extraordinary price of from one to two guineas each. Their use is supposed to be derived from injunctions contained in the 23*d* Chapter of the book of Leviticus: "And ye shall take you on the first day the boughs (Hebrew version, fruit) of goodly trees, branches of Palm trees, and willows of the brook." But the Jewish version of the same passage reads: "And you shall take to yourselves on the first day the fruit of the tree Hadar, Palm leaves, boughs of the tree Aboth, and

willows of the brook." These special fruits, boughs, &c., are particularised in a Jewish book, entitled *The Festivals of the Lord*, as fruit of the tree Hadar or Citron (Hebrew troon), the "capoth temarium" or Palm leaves, boughs of the tree Aboth or Myrtle, and brook Willows. The troon, or tabernacle Citron as it is sometimes called, is a fruit rather larger than a Lemon, pale greenish-yellow in colour (being always plucked before it is fully ripe), and said to contain only one pip, and to be of an extremely pure nature, and to keep sound for a very long period. Those which are exported from Mogadore are carefully packed in cotton-wool or other soft material, as the price they will realise for their holy use is entirely dependent on the greater or less freedom from blemish, which the priests can certify concerning each specimen.



FIG. 110.—CEDAR OF GOA: CUPRESSUS GLAUCA.

Enquiry as to the exact locality of their production has resulted in fixing it at a place called Assats, or Assat, in the province of Soos, at no great distance from the town of Tarndant, and on or near the bank of the great Soos River. It is stated, with regard to this interesting place, that there is a very ancient Hebrew graveyard there, and orchards known by the names of Moses, Aaron, David, &c., also that the authority of the Moorish government is not respected there. Jewish informants state that these troons come from no other place but Assats, but they have been unable to explain how the faithful Hebrews in many far distant parts of the world manage to provide themselves with these necessary emblems, the shipment of which from Mogadore in one year amounted to 110 boxes, containing 9024 specimens of this interesting vegetable production. *J. R. J.*

THE CEDAR OF GOA.*

This fine Cypress, for it is no Cedar in spite, we might almost say by reason, of its popular name, is best known under the name of *Cupressus glauca*, sometimes under that of *C. lusitanica*. It was introduced into Portugal, but when, whence, and by whom are still matters of dispute. Much has been written on the subject, and the evidence pro and con, has been given by Prof. Henriques, Prof. Willkomm, and others. No such plant is known wild near Goa, nor is that a likely locality for such a tree. No such tree is known in the Nilgiris, nor in the Himalayas, unless, as Sir Joseph Hooker thinks may be the case, this Cypress is a variation of the Himalayan *C. torulosa*. It may be so; it is certainly more like that species than any other we can think of.

Under the circumstances, it may seem a little foolhardy to suggest another possible origin—and that is that the tree in question may be of Chinese origin, and may have been carried to Goa and to Portugal by the Portuguese missionaries. We have no evidence to offer in favour of the suggestion, but in this respect we are no worse off than our predecessors. We have been led to entertain the speculation solely from the number of analogous discoveries made of late in the mountains of Central China by Dr. Henry and by the French missionaries in Tibet.

Be this as it may, *C. glauca* forms an elegant tree, often with pendulous branches and loose habit, the imbricated foliage as well as the cones being more or less covered with glaucous bloom. It is too tender for central England, but in the south and west it might succeed, as it does in Ireland. Along the Riviera it does well. We have received fine specimens of it from M. Naudin, of Antibes, while the spray from which our illustration is taken was kindly sent us by Professor Henriques, of Coimbra. In the forests of Bussaco, near that city, are trees of this species 150 feet and upwards in height, and about 250 years in age. Others have been planted in more recent times.

A shows a small twig magnified two diameters. At b c are shown separate leaves, seen from the side and from the face. At d is shown the male catkin. At e, a vertical section through it. At f, a stamen detached, magnified four times. At g the cones are shown of the real size, though in some cases they are considerably larger. At h are shown cone scales, with their central hook-like process seen from the outside and from the side.

FLORISTS' FLOWERS.

CHIRYSANTHEMUM MRS. ROBINSON KING.

THE above is a deep yellow-coloured sport from Golden Empress, and originated at Mr. Robinson King's, North Ferriby, Hull, whose gardener is Mr. Hotham.

This is without doubt one of the finest additions to the incurved class ever introduced; it possesses all the excellent qualities of its parent in petal-formation, and size of flower, and it is as deep in colour as *Jardin des Plantes*. I exhibited it at several shows, and it was the admiration of everyone who saw it. I have seen several spurious varieties of Mrs. Robinson King, which are much lighter in colour than Hotham's variety. The entire stock of the plant has been acquired by Owen, of Maidenhead, and plants will be distributed by him in the spring. Such a grand acquisition as this is sure to be eagerly sought after, and find its way into many prize stands next year. *Peter Blair, Trentham Gardens.*

THE AURICULA.

The plants at this season should be at rest; but the difference in the seasons makes a great difference in this respect. Last year at about the middle of December the entire collection was

* *Cupressus glauca*, *Lamarck Dict.* 2, p. 243 (1790); Willkomm, in *Gartenflora*, March, 1890; *C. lusitanica*, *Miller Dict.*, n. 3; Lambert *Pinus* (1803), p. 95, t. 42; *C. pendula*, *Herit. Stirp.* (1784), p. 15, non Thunberg nec Lamarck.

frozen, and I do not remember another year when the leaves died off so suddenly and generally as then. Many of the December-formed trusses flowered outside of the leaves, a condition which is phenomenal. We have had a few slight frosts [Written before the present infliction. Ed.], but not sufficient to destroy the outer leaves of the plants, and the plants have consequently been more freely supplied with water. The plants should be gradually brought to rest, and the outer leaves will then gradually become yellow and may be removed, a rosette of stubby leaves remaining to protect its heart from moderate winter frosts, and when the plants have arrived at this stage they need scarcely any water. Once every week they should be examined, removing what is decayed. Sometimes a plant may be observed whose centre has begun to rot; that part affected should be cut out, and some powdered quicklime applied to arrest its further progress. Admit air freely to the frames, and remove the lights altogether on fine dry days. The young plants raised from offsets during the summer are looking well this year, and they have not ceased to grow all through the winter months, and could we be sure that no intense frosts would prevail later I would report them, but it is better that they should remain where they are in a cold frame at present. By taking precautions in the summer to scatter soot inside the frames, we have either driven away or destroyed the entire race of slugs. The plants will be placed in the heated house early in January. In this house are the seed pans, and the seeds are vegetating pretty freely.

CARNATIONS AND PICOTEES.

The weather was very rainy when the layers should have been rooting, and at the time of taking them off a considerable number had not formed roots at all, but even those that were poorly rooted very soon became established when stood in the cold frames, and despite the check the layers received when detaching their roots, they are now in capital condition. Our mode of action was to take the layers off carefully, and repot them at once in a compost that was moderately moist, and take them to the frames, keeping the lights almost close for a week or ten days, and any plants that exhibited signs of shrinking when air was admitted to the frame freely, were taken out and placed in close hand-lights for a time. Any stubborn rooting sorts should be placed in a frame over a dung bed, but the heat should be very gentle only. We planted out a long bed of plants raised from layers in good deep rich soil as late as the second week in November. A few of these plants shrunk visibly, and some of the more badly-rooted ones died; but we have always a reserve of plants to fill up gaps. Thanks to the favourable weather during the last month, the plants seem to be well established. Alternate frosts and thaws throw many of the plants not firmly established out of the ground, and these require looking to at once and pressing in with the fingers. The plants intended for pot culture, now established in small pots, and sheltered in cold frames, have been looked over once only, to remove all decayed leaves, and to stir up the surface soil in the pots. Not much water is needed at this season, but I fancy an error may be committed by keeping the plants too dry. They grow whenever the weather is mild, and rest in winter only when the temperature is below the freezing point.

THE PANSY.

This is one of the most charming of spring flowers, and has been cultivated more generally in the South during the last few years, probably because of the weather being favourable to it. Hot dry days are fatal to good results being obtained; but the effects of hot weather can be greatly modified by a good system of culture. The Pansy is supposed to be a common plant and easily grown, therefore it is put out in the borders to take its chance in any kind of garden mould; and as to propagation, if the tufts are pulled to pieces and stuck in again, that is enough. No wonder that hot and dry seasons play havoc with them. The plants like good deep rich loam, with

manure a foot or more below the surface, to feed the plants in dry weather. The soil must be open; heavy soil should be made so by road-scrappings or leaf-mould. The plants should be raised annually from cuttings, and really ought to be planted where they are to flower in September, so as to be well established for flowering early the following season. The early flowers are by far the best. To prevent them being broken, or injured by rough weather in winter, let the plants be pegged down to the ground; the flowering points soon turn up and stand free of the damp soil.

POLYANTHUSES.

The old florists still cling with fond affection to the laced varieties—they are the Polyanthuses, they do not recognize any other. I do not blame them, for they are amongst the most beautiful of hardy plants, but for border plants in the South of England they are absolutely worthless. They are beautiful cultivated as pot plants, and require the same treatment as Auriculas in autumn and winter, except that they really need more water. In the North, they are planted out-of-doors to regain their vigour. I tried this plan near London, and sought out a moist place, entirely shaded from the sun at noon-day; the most suitable compound was provided, but the results were not at all satisfactory. We put our plants out in the open ground as soon as they pass out of bloom about the end of April, and re-pot them again in September. The ordinary garden forms of Polyanthuses, and Primroses exhibited with them, at the National Auricula Society's exhibition pass nearly all their time in the open garden. They are taken up and potted when the plants are in bloom. They are both far more valuable than laced Polyanthuses as useful garden plants. *J. Douglas.*

NEW SINGLE-FLOWERED CHRYSANTHEMUMS.

The following are some of the best of the novelties in the above, and all are worth growing for decorative purposes or cutting:—Golden Star, large flower, quite circular, the tips of florets rounded instead of pointed, as is usually the case in single varieties; colour deep yellow, without verging to orange. Oceana is one of the best, the florets are semi-drooping at the points; a full-sized flower, pale pink in colour. Mrs. D. B. Crane, cerise-pink in colour, quite distinct from any other Chrysanthemum that I know of in this point. Jenny Lind has yellow flowers, tinted with orange. Miss A. H. Bates is pure white, and the flat petals are very broad for a single-flowered variety. Calliope is of a deep shade of pink. Milly Agate is bluish-white. Jessie Chignell, dark crimson; Exquisite, a most delicate blush. Coquette, rosy-pink; and Exquisite and Guernsey Sunset are charming varieties.

CHRYSANTHEMUM W. W. COLES.

Those persons who are in want of bright-coloured flowers during November, and the first two weeks of December, would do well to add this variety to their list if they do not already possess it, or to grow more of it. The colour is a bright terra-cotta, edged with gold, the florets are rather narrow, in many cases with just a slight curl at the tip; the flower is very full in the centre, which is not always the case with late-flowered sorts. The blooms keep fresh for an exceptionally long time when cut. A bloom is before me now, that has been in a warm room for a period of two weeks, and it is not faded. *E. M.*

VEGETABLES.

GOOD WINTER BROCCOLIS.

In addition to the list of varieties recommended by Mr. Wythes, p. 713, I should like to add Michaelmas White, which has kept us well supplied with tender white heads from the time the bulk of the autumn Cauliflowers was exhausted, at the end of October, until the present time. To follow this one, we have now Winter Mammoth, a variety every one having a strong retentive soil should grow. By its

appearance at present, we shall have abundance of white crisp heads for the next six weeks. Previously to growing Winter Mammoth, we were without Broccolis till the spring. Both of the above are Messrs. Suttons' strain. *E. Molyneux.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

CUCUMBERS.—With the past changeable weather less moisture will have been required, otherwise mildew and the decay of foliage would soon have appeared on the plants, and the chance of good Cucumbers would be small. There are a few important details to be carried out at this season which differ but little from those of the last few weeks. With cold nights some greater amount of artificial heat needs be applied, and an arid atmosphere must be by all means prevented, or insect pests will soon abound. As one of the means of averting this mishap, the glass should be covered at night. The bottom-heat should be carefully attended to, adding new fermenting material when required, 80° being allowed as the minimum. Afford occasional watering with warm liquid manure, and continue the top-dressings with light rich compost. Give air in bright weather for a few minutes so as to dry the foliage, and crop sparingly till growth begins to increase. Plants for fruiting in February and onwards should be kept cooler than those, and no fruit allowed to set till that time has come. A few cucumber seeds may be sown, two in a small 60-pot, and placed in a frame with brisk bottom-heat. When they are up keep them near the glass, and when it can be seen which is the stronger, pull up the other. Repot low in the pot, and mould up twice.

MELONS.—Those who may require to have ripe Melons in the month of May, should sow a few seeds in the way advised for Cucumbers; and for such early forcing I would advise for choice an early kind with a thin rind, and also to grow them in large pots or tubs, keeping the bine near the light.

STRAWBERRIES.—Of these, a few of the earliest varieties should be brought indoors, viz., Vicomtesse H. de Thury, which is one of the earliest flowerers, and La Grosse Sucrée, which is equally good. There are a variety of ways of starting Strawberries for early fruiting, and numerous shifts have to be made by gardeners; but the best one is to plunge the pots in a mild hotbed of tree leaves, and keep them close to the glass. The temperature may be from 45° to 50° at the start, the lower degree of warmth at night. For early forcing, I like to have the plants in 5-inch pots, each plant furnished with a single plump well-ripened crown, and healthy roots. Plants may also be placed on shelves in fruit-houses just started, and thus brought on gradually. In preparing the plants, see that the drainage is perfect; and with small pots, I prefer to remove only loose soil on the surface, and not to take away a lot of it. A good space for holding water is essential, and for the addition of a feeding mulch. Plants for succession should be examined, thoroughly watered if dry, and kept cool till required.

TOMATOS will now make slower progress, and all the energies of the plant should be directed to swell up and finish the fruits, as it will be found impossible to get fruits to set for some time yet. Continue to apply stimulants to healthy plants, and afford them a little more warmth and air on all occasions when prudent in the early part of the day, and in mild weather leave a chink at the top ventilators at night. *G. Wythes, Syon House, Brentford.*

THE FLOWER GARDEN.

ODD JOBS AND BACKWARD WORK.—Advantage should be taken of the frosty weather to turn over and re-turn the accumulated rubbish of the current year, so as to convert it into fairly good manure, which well-rotted short grass mowings, weeds, sweepings of walks, leaves, and other vegetable matter undoubtedly make, with which to dress the beds and borders. Of course, the rubbish is situate in some out-of-the-way corner, away from the vicinity of the flower garden or grounds. It should consist of three sections, side by side, one consisting of fresh rubbish, another that of 1890, which will be partially rotted, and thirdly, that which is fit for use. Composts used in the raising and potting of bedding-out plants should be prepared in due proportions, say

three parts of waste or other soil and one of leaf-mould. By turning it over a few times in as many days, the exposure to frost will sweeten it, and destroy many grubs, insects, &c.

Walks and road-making, which in many low-lying places could not be got on with in consequence of so much rain having fallen, should, now the ground is firm, be proceeded with in earnest. And for the same reason gravel should be carted on to any walks requiring a coating of the same. Also the trunks of large trees blown down during the recent gales, and which the condition of the ground did not permit of being sooner removed, should also have attention as soon as the work can be done without injury to the turf or gravel. Where the mulching of Rose beds has been deferred, it should now be performed, putting on them a coating 3 inches thick of good well-rotted manure, which will at the same time serve as a protection against frost.

IVY ON TREES.—While the growth of Ivy is to be encouraged on the trunks and branches of decayed and decaying trees, it should by no means be allowed to establish itself on young trees that we wish to see grow into large specimens, or on established trees whose life and vigour we wish to increase rather than diminish. Therefore, a man provided with a light hatchet should look over the trees, and cut the Ivy off close to the ground of any trees which it is not deemed desirable to drape with its green tightly-gripping shoots, which, if allowed to remain, they would ultimately kill. After the Ivy is cut off at the base of the trees, it can easily be torn off the latter, if not well-established, in which case it may be necessary to cut the several leading shoots or branches into short lengths in order to facilitate their removal.

PROTECTING TENDER SHRUBS.—Such plants as Myrtle and *Aloysia citriodora* (lemon-scented Verbena), will be the better for a little protection being given them in most counties, excepting a few favoured spots in the south of England and Ireland. A few inches thick of sifted coal-ashes placed over the roots, and a mat or two over the branches (if trained against a wall or fence) at night will prevent their being injured by frost. If grown in bush form, as is frequently the case, the branches can be tied together, and dry Fern or Bracken worked among and over the shoots, and then tied and trimmed into a pyramidal shape, thus making them secure from frost for the whole winter.

BEDDING PLANTS.—See that all kinds of bedding plants requiring protection from frost receive it, and ventilate the pits, frames, and houses in which they are growing freely on every favourable opportunity that presents itself so as to preserve a sturdy growth. *H. W. Ward, Longford Castle, Salisbury.*

THE KITCHEN GARDEN.

CAULIFLOWERS.—Seeds of varieties of these of which Sutton's First Crop, Magnum Bonum, Pearl, and Veitch's Extra Early Forcing, are types, may now be sown, and again early next month. Sow thinly in with warm soil in pans or boxes, and keep the plants from the first close to the glass, and afford them as much air as the weather will allow, still keeping them in a gentle heat. When a pair of true leaves are grown, prick them off into smaller pans, &c., of sifted sandy loam and leaf-mould, about 3 inches apart. Sow a small quantity of Stuart & Meim's No. 1, Ellam's Early, and Sutton's Earliest, Flower of Spring, and All Heart Cabbages, and treat these seeds like the Cauliflowers. These Cabbages will come in close upon the heels of the autumn-sown Cabbages, and be more tender and succulent than those.

LETTUCES.—Seed of Cabbage and Cos Lettuce should be sown, and usually one pan of each will be found sufficient for the first supplies. Sow on the surface of soil that has been made warm, and place the pans in some pit or house where there is a warmth of 55° to 60° at night. When the seeds have germinated, place the pans, without delay, near the glass, and as soon as the plants can be handled, prick them out in a slight hotbed, or in boxes, at 3 inches apart. For varieties, Commodore Nutt and Golden Ball, among Cabbage Lettuces for early forcing, and Paris White Cos are amongst the best.

PEAS AND BEANS.—Make a sowing of Peas, either in boxes on turves or 60-pots, and if the latter, put a dozen Peas into each. The pots or boxes should be three-quarters filled with holding turfy loam and leaf mould, covering the seeds to the

depth of 1 inch. Place in gentle heat until the young plants appear above ground, and keep them close up to the glass. When the plants are 1½ inches high, remove to a cooler and better ventilated house or pit, so that sturdy growth is made, affording air less fully at first than no check to growth may occur but after a fortnight ventilating freely when the weather will admit of it. *Chelsea Gem*, *William Hurst*, *Veitch's Extra Early*, *William the First*, and *Sutton's A 1*, are all good varieties for early sowing, and the two former are suitable for planting in pits or 8-inch pots for yielding the earliest gatherings.

BEANS should also be sown in boxes for planting in favourable sites out-of-doors, when it is considered safe to do so; *Mammoth Longpod* and *Giant Seville Longpod* are good early varieties. Use strong loam and leaf-mould in a partially rough state, and the plants will lift well when transplanted, and scarcely any check will be caused by the operation. Dibble or place the seeds 2½ inches apart in the boxes, and cover them with an inch of rather finer soil than that beneath, and do not put the Beans when sown in a forcing temperature—a temperature of 45° at night, and 50° or 55° by day, will be suitable for ensuring sturdy growth.

MISCELLANEOUS.—Continue to put into heat *Seakale* roots, *Witloof* (*Chicory*), *Rhubarb*, &c., so that no break in the supplies occurs. *Mint* and *Tarragon* roots and seeds of *Chervil* may be planted and sown at regular intervals. Examine all roots in store, removing all that show signs of decay. Advantage should be taken of frosty weather to wheel out manure on to all such vacant plots requiring it, placing it in compact heaps. Refuse heaps may now be turned over, picking out sticks, large stones, &c., as the work proceeds, sprinkling fresh lime over it as each piece is turned over. Where much ground is going to be trenched, this refuse may be wheeled on to the quarters, to be put during the trenching into the bottom of the trenches. Trimmings of hedges and other kinds of rubbish may be collected and burned, saving the ashes for future use. All indoor work should be pushed on during frost and wet weather.

The affairs of the garden may now be reviewed in detail, this being the best time for doing so, before ordering the seeds for next year's supply, making notes of those which have done well, whilst the matters are still clearly remembered. *C. J. Waite, Glenhurst, Esher.*

THE ORCHID HOUSES.

THE EAST INDIA HOUSE.—The earliest blooming *Phalenopsis*, *P. amabilis*, and *P. grandiflora* are now opening their flowers, and at this dull season are very useful. Newly-imported plants are now in the market, and they could not arrive at a better time, as a long season of growth is ensured. In previous Calendars I have mentioned that these *Phalenopsis* are easily managed when bought as fresh imported plants. A large amount of moisture in the atmosphere and at the roots should now be avoided, this being the chief cause of failure with these plants; heat must also be reduced. If these points are neglected, discoloration of the foliage will set in, and the loss of the leaves will accrue. If taken in time, this can be easily avoided. Any plant affected should be placed in a very light position in the house, and kept dry. If the leaf is too far gone to be saved by this means, prick around the affected part with a needle, making it go entirely through the leaf at each insertion, but no sulphur or pounded charcoal must come near the leaf. The action of the air will entirely dry up the wound, and, although spoilt in appearance for the time being, the plant will be in better health and strength for a strong growth the following season than if the leaf was entirely cut away. A temperature of 63° at night, falling to 60° in the morning, is quite sufficient for *Phalenopsis* at this season, and a lower temperature for a short period will do no harm; but the greatest care must be taken to avoid drip from the roof-glass. Where the temperature cannot be kept up without making the hot-water pipes very hot, it is much better to place Archangel mats or old shadings on the roof-glass and around the sides of the house, for fluctuations in the temperature are very injurious to *Phalenopsis*.

THE INTERMEDIATE-HOUSE.—One of the most satisfactory plants to grow in this house is *Epidendrum Wallisii*. For fully three years we have never been without flowers of it, though naturally at some seasons we have more than others.

Sophronis grandiflora is also another beautiful Orchid for flowering at this season, and is easy of cultivation, but it must not be grown in the cold house as is sometimes advised; the plants do much better when grown in the intermediate-house. The latter plant and *Masdevallia tovarensis* mixed, together with pots of *Maidenhair Fern*, make a beautiful effect. The temperatures for the *Cattleyas* should be 60° at night, intermediate house 55°, *Masdevallias* 50°, *Oncoglossums* 45°, and a degree or two lower on cold nights will do no harm. *A. G. Catt, Parkfield, Hallow.*

PLANTS AND THEIR CULTURE.

CROTONS.—Large plants of *Crotons*, which were cut back as advised in a previous Calendar, will have commenced to break freely, and should be syringed lightly on bright days with tepid water, which will assist them to break more regularly. Clean the plants thoroughly, and be cautious in not over-watering at the roots until the young shoots get into full growth and the roots begin to move freely.

PANDANUS.—Old plants of *Pandanus Veitchii* throw off a number of suckers from their base, and these may be propagated as soon as they have attained the proper size. Place the suckers separately in small pots according to their size, using a compost of two parts loam and one each of leaf soil and silver sand. After potting, place a small neat stick to each sucker, encircling the leaves with a small piece of bast, and place in the propagating frame until rooted. By propagating at different intervals, they will be found more useful for forming a succession for table decoration.

CINERARIAS.—The earliest plants are now in full bloom, and are most useful for decorative purposes. Take precautions that damp does not affect them. Admit air on all favourable occasions, and look over the plants once or twice each week, removing all decayed leaves, &c. The successional plants which are commencing to show for bloom should be assisted with weak manure-water afforded once a week. Keep the plants well up to the glass, always keeping a little air on, except when there is danger of frost, and only use fire-heat to expel damp and frost. Should there be the least sign of green-fly, have the plants fumigated before the blooms expand. Any plants requiring a shift into larger pots should have attention, using a compost of three parts fibrous loam, one each of leaf-soil and decayed manure, with sufficient sand to keep the whole porous.

ZONAL PELARGONIUMS.—When well-grown these are always useful during the winter, and if growing in a suitable structure, there should be no lack of bloom at the present time. Damp is their worst enemy; therefore keep the hot-water-pipes warm during damp weather, and give air on all occasions when the outside temperature is favourable. Look over the plants twice each week, and pick off all decayed leaves and flowers. When giving water, take care not to spill any about the stages, walks, &c. Young plants established in 4 or 5-inch pots should have a little guano given them. *R. Milner, Penrice Castle, Swansea.*

THE HARDY FRUIT GARDEN.

As long as the frosty weather lasts attend to all newly-planted trees, especially where rabbits and hares abound [and goats, &c.] Protect the stems by placing strips of wire netting around them. Painting the bark over two feet or more from the ground with a mixture of soft soap, soil, soot, and paraffin will also keep rabbits and hares at bay. The operation should be repeated when necessary. Staking and re-staking the trees should now be done, taking precaution that the bark does not rub against the stakes. Where stakes are used for supporting orchard trees, two should be driven a foot into the earth at 16 inches apart, and a cross-piece of wood nailed at the proper height, to which the stem should be tied, placing a pad of hay or straw between the ties. Advantage should be taken now the ground is hard to get soil, &c., for further top-dressing or planting, wheeled or carted to where it will be most needed.

Goose-berry bushes should be watched, or birds, especially sparrows, will soon destroy the buds. Soot and lime, well mixed, and strewn over the bushes at intervals will, to a great extent, prevent much harm being done. Red and white Currants may be pruned when the frost is not severe. *H. Markham.*

EDITORIAL NOTICE.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

WEDNESDAY, DEC. 30 { Dutch Bulbs and Roots, Palms
Greenhouse, and other Ferns, at
Protheroe & Morris' Rooms.
FRIDAY, JAN. 1 { Important Sale of Established Or-
chids, from a private collection,
at Frotheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—37°.3.

WITH a fog so black at mid-day that the houses on the opposite side of the street are invisible, we might be excused for looking forward to the prospects of the future, rather than for dealing with the fact of the present. Our duty at this moment, however, is rather with the past than with the present, and not even the fog can annihilate our feelings of gratitude for the many manifestations of goodwill that were showered upon us on the occasion of our Jubilee. This time last year it was our pleasing duty to review the events of the last half-century as chronicled in these pages, and the summary we were then able to give excited much attention among those interested in the progress of horticulture. Of the share we have taken in it we need say nothing—others have done it for us in every quarter of the globe, so that we have but to repeat our deep appreciation of their kindly feeling.

As to the year that is now at end, it has been marked by several features of great interest, to some few of which we must allude in passing. First and foremost we would place the question of horticultural education. The various County Councils have, from causes into which we need not enter, been placed in a position to further technical education in various subjects, and among them horticulture. As a matter of principle, we can but rejoice at this; as a matter of practice, we can but regret that the announcement of the good news has come at last so suddenly that we fear it finds many unprepared to turn the circumstance to proper account. It seems almost certain that mistakes must ensue, and disappointment be faced, ere the subject of horticultural education can be properly dealt with. Gardening as a practical art must be learned in the garden by practice alone. But gardening is something more than a mechanical art, it is, or should be, the outcome of intelligence brought to bear on practice. As at present picked up—we cannot say learnt—it is apt, as we all know too well, to degenerate into mere routine and rule-of-thumb procedure. This, excellent as it is in its way, requires to be leavened with intelligence, if progress is to be made, and new conditions are to be encountered.

The practitioners of an art naturally feel that practice is what is essentially required, and so it is; but to direct, control, and improve that practice, knowledge is required. Practitioners are apt to fight shy of "science," theory as they call it, and do not sufficiently recognise that science is only a grand name for knowledge and theory, only the equivalent of that orderly intelligence, by means of which the powers of knowledge can be turned to the best practical ac-

count. No amount of lectures or book-reading can make a gardener, but a gardener can make much more rapid and much more satisfactory progress if his head is made to work with, and direct the work of, his hands. Practical gardening, as such, has reached its highest level in this country. The ways and means and the material have vastly improved during the last half-century; but if we eliminate these, we greatly doubt if the merely practical gardener is any better than his predecessor of fifty years ago. How should he be? This is not our opinion only, but that of many of the leading practical gardeners themselves, as was noted when we were discussing these matters. If this be true, there is an ample reason for urging an improved educational system in order to allow us to take full advantage of the material benefits which the progress of science has put at our disposal. Again, the gardening calling, as a whole, is, no doubt, greatly overstocked and woefully under-paid. There is no more room for mere routine practitioners; but, on the other hand, there are many openings for properly-educated and properly-trained gardeners which were not available fifty years ago. The development of our colonies, the necessity at home of making the land more profitable than it now is, offer opportunities for the trained and educated gardener that he had not before. These very conditions render the prospects of the untrained and uneducated more hopeless than ever.

The prospects of hardy fruit culture, which are decidedly brighter than they were, do but add an additional illustration of the validity of our argument. No doubt we can in this country—and in some cases we do—produce better fruit than is yielded by any other country, under at all like circumstances; but look at our neglected orchards, and at the wretched quality of much of the fruits exposed for sale in the greengrocers' shops, and the need for intelligent cultivation is painfully made apparent. Let us look again at the questions relating to plant diseases. Who can estimate the annual loss caused by insects and by various fungi? Are we to go on for ever taking these things as matters of course which must be endured, or ought we not to set to work vigorously to devise means, at least, to palliate their evil effects? We cannot do this without the aid of science. We must first of all know all that can be known of these organisms and of their ways of life, and then we shall be in a fair way to deal with them. Take the Potato disease, as a case in point. There can be no doubt, in spite of some adverse experiments, that we are now in possession of various means which, if properly carried out, will very materially diminish the evil effects of this pest. Apathy and ridicule will do nothing, but well-devised operations will have, at any rate, a large measure of success.

The general course of events in the horticultural world during the past year has not, with the exceptions we have mentioned, furnished much material for comment. The crops have been fairly good, and the general outcome has been better than the nature of the season promised. Flower shows have been as numerous, if not more so, than ever; but whether they have increased their powers for good, as regards the progress of horticulture, is doubtful.

The fortnightly meetings of the Royal Horticultural Society have been as full of interest as they generally are, and among the larger events the Temple show, the shows at Manchester and at Edinburgh, have been above average. The Conifer Congress at Chiswick,

ruined in some respects by the weather, was, nevertheless, the means of bringing together the largest and most instructive display of these plants ever witnessed, and the papers read at the conference were of so high a quality that we anxiously await their publication in the *Journal* of the society, more especially from the point of view of practical forestry.

The garden charities have been well supported, but the lists before us show, unfortunately, how inadequate they are to cope with the requirements of the case. The practical inference from this needs no insistence.

The publications of the year have been very numerous, but, with a few exceptions, they have not been equal in merit to the flood of publications on horticultural and cognate subjects which reach us from Germany and other countries. Of purely botanical publications we can make no mention, but we cannot avoid referring to Professor SAROENT's magnificent publication on the *Silva of North America*, an illustrated work of reference, which, from its cost, is not accessible to many individuals, but is one which no library with any claims to comprehensiveness should be without.

The Obituary list last year was terrible, not only in numbers, but for the havoc it recorded among prominent horticulturists. It is not much better this year. We have lost the Emperor of BRAZIL, a man who like the Duke of DEVONSHIRE, whose loss we have to announce to-day, owed his reputation far less to his high rank than to his intelligence and ability. The Emperor was not only a patron of science in the best sense of the term, but a man of science himself and one to whom horticulturists owe much more than they are at all aware of. France has lost two men of foremost rank in the horticultural world, HARDY and ALPHAND, men that France will find it difficult to replace. LEVET also will long be regretted by Rose growers, and HERINGQ will be missed from the small band of garden botanists. Belgium has lost VAN VOLXEM, Italy mourns RICASOLI, both men who greatly advanced horticulture. For ourselves, we have lost the veteran SCHOMBURGK, who did such valiant service in South Australia; Dr. HENRY BENNET, the founder of Mentone, and who was one of the first to perceive the importance of observing the phenomena of vegetation, and co-relating them with those of climate for the benefit of his patients; BARRON, "of Elvaston," a sagacious practitioner with a knowledge of trees and their ways, especially of Conifers, and who has been taken from us at a ripe age; DOMINY, the hybridist, to whose labours we owe so much; JEAN SISLEY, unless we are to count him as a Frenchman; MESTON, the landscape gardener; FRANK MILES, artist and gardener; WILLIAM RICHARDS, known to many as the publisher of this journal, and whose help when any charitable enterprise needed assistance, could always be counted on, must be numbered in the sad list. These, and, unfortunately, many more, might be cited; but before we close the list, we must not omit two names which are eminently suggestive—EDMUND ROGER CUTLER, by whose efforts, mainly, the Gardeners' Benevolent was raised from an institution pensioning with difficulty one or two members a year, to its present state, when its pensioners number a hundred or more, and its invested funds afford the best proof of its ability to do more in the future, if the gardeners will only continue their much-needed support. The last name on the list that we will mention is that of JAMES WELLS, centenarian, and we do so because we hope his example may serve to stimulate others. We do

not know that he had many claims to notice as a horticulturist, but he was more than a centenary, and he did his duty to the Gardeners' Benevolent and to his fellows by subscribing a guinea a year as long as he could—eighteen years; and then when he could no longer work, and circumstances were against him, he claimed the advantages of his foresight, and received as a matter of right, not of charity, assistance from the institution he had helped to support to the extent of £520—a pretty good return for his investment, if we look at the matter from that point only.

And so with this hasty summary we pass from our Jubilee year to another period of uncertain duration, but cheered and encouraged by a largely increased circulation, and by the goodwill of our numerous friends. With their suggestions to guide us, and their help to support us, we trust to do good service to horticulture in the future, as it is acknowledged we have done in the past.

THE QUEEN AND HORTICULTURE.—The Gold Medal of the Royal Botanical and Horticultural Society of Manchester was awarded to Her Majesty the QUEEN for her exhibition of fruit at the recent show in this city. Mr. BRUCE FINDLAY, the Secretary of the Society, proceeded to Windsor Castle and presented the Gold Medal. In acknowledgment, Mr. FINDLAY has received the following letter:—

Windsor Castle, December 16, 1891.

"SIR,—I am commanded by the QUEEN to convey to the members of the Royal Botanical and Horticultural Society of Manchester the expression of Her Majesty's thanks for the Gold Medal which the Society has awarded to her for the fruit exhibited by Her Majesty on the occasion of the last exhibition there, and to express Her Majesty's satisfaction that the Apples and Pears sent from the Royal Gardens should have been so highly approved of by the Society.—Believe me, yours faithfully,
"J. C. COWELL."

"BRUCE FINDLAY, Esq., Secy. Royal Botanical and Horticultural Society of Manchester."

VEITCH MEMORIAL PRIZES.—At a meeting of the trustees of the Veitch Memorial Fund, held on Friday last, the 18th inst., at the office of the *Journal of Horticulture*, Dr. ROBERT HOOG in the chair, it was decided to offer Veitch Memorial Medals and prizes for the year 1892 as follows:—(1) At the Temple show of the Royal Horticultural Society, on May 27, a Medal and prize of £5 for the best six hard-wooded greenhouse plants in bloom; (2) at the special exhibition of Orchids at the Royal Botanic Gardens, Manchester, to be held in June, a Medal and prize of £5 for the best hybrid Orchid in bloom already in commerce; and (3) a Medal and prize of £5 for the best hybrid Orchid in bloom not in commerce. These Medals and prizes can be competed for by amateurs and their gardeners only. It was also decided to award a Silver Medal to Mr. WILLIAM WATSON, of Kew; and a similar Medal to Mr. JOHN HEAL, of the Royal Exotic Nursery, Chelsea, as a recognition of their skill as hybridisers and cultivators.

ROYAL HORTICULTURAL SOCIETY.—As it has sometimes been made a subject of complaint that sufficient means are not taken to make the Fellows acquainted with the conditions under which alone their privileges of recommending new members for election into the Council can be exercised, we desire to call attention to the following notice published in the last number of the society's journal:—"Any two Fellows may recommend any other Fellow for removal from, or election to, the Council, or for appointment to the offices of President, Treasurer, or Secretary, and Auditors, such Fellows leaving notice in writing of their proposal at the offices of the Society on or before the 10th day of January in each year."

THE DUKE OF DEVONSHIRE.—The praises of the Lord of Chatsworth are being pronounced by men of all parties and all creeds. A Duke—an owner of many thousands of acres in various parts of the country, and also in Ireland—he was more

than all these, he was a just and considerate landlord, a double-first at Cambridge, a Smith's prizeman, a patron of art, science, and literature, and well upheld the name of Cavendish in matters of science. For many years he was Chancellor of the University of London, and of that of Cambridge—positions to which his personal qualities entitled him still more than his hereditary rank. The Gardens of the Royal Horticultural Society at Chiswick are rented on very favourable terms from the Duke, one of whose predecessors was the patron and friend of Sir JOSEPH PAXTON. We may remind our readers that on June 26, 1875, we gave in our Chatsworth Supplement, a view of the house, now reproduced on p. 759, and also of the great conservatory, the Musa avenue, the tank in the conservatory, the interiors of the Victoria House, and the great conservatory, the Amberstia, since dead, the Italian garden, and others.

CHRISTMAS NUMBERS.—*Amateur Gardening* presents its readers with a coloured plate of new early-flowering Chrysanthemums, and a variety of useful and seasonable articles, mostly practical, some scientific, others recreative. The *Gardeners' Magazine* has a brilliant coloured almanack, articles on Stratford and Hatfield, a Christmas story by Mr. G. M. FENN, another by Mr. BURNIBØE; a pleasant account of the Norfolk Broads in Winter, while Mr. BUNYARD burgesons forth into poetry as he catalogues the Apples in the fruit-room. The *Vegetarian* has an illustrated article on the Gardens at Lamport Hall, with their whimsical conceits, concerning which people form as many different opinions as they do about the gardens at Isola Bella; Mr. E. J. BAILLIE has a Christmas-tide reflection—one which entails no remorse for the past, but one which is full of hope and promise for the future.

MEETING OF THE GERMAN GARDENERS' CLUB.

—A number of young Germans perceiving the advantages of having a place of meeting for mutual help and instruction, established some fourteen years ago, a club, with a very low weekly subscription from its members. This modest institution, with members at no one time exceeding fifty in number, had its *locale* for many years in a back street off Sloane Street, but it has had recently to migrate to Soho, owing to the demolition of its original quarters, and is now located at WEDDES' Hotel in Greek Street. On Saturday last was held at the latter place its fourteenth anniversary festival. The attendance numbered some forty sons of the Fatherland, who had assembled in a thoroughly homely manner, with a plain supper, song, and speech, and a very enjoyable evening was spent. On ordinary meeting nights, the first and third Saturdays in each month, papers are read on various topics of horticultural interest, certain articles read from the best English and foreign gardening journals, and criticism and general discussion are invited thereon. We hope to be able on some future occasion to lay before our readers the proceedings at one of these meetings, which resemble with some differences, those of our Mutual Horticultural Improvement Societies and Associations. The President of the Club is Mr. KRUMBEIGEL, who is employed in the Royal Botanical Gardens, Kew.

L'ORCHIDÉENNE.—The thirty-second meeting of this Society was held in Brussels on December 13 at the Horticulture Internationale, when a remarkable show of Orchids was staged, including several interesting novelties, some splendid Cypripediums, and an unusually good display of Odontoglossams. We may mention *O. Alexandræ* var. *nebulosum*, very charming and striking; *O. Alexandræ* var., specked with salmon, of elegant colouring; the following well-grown Cypripediums, *C. Spicerianum*, *C. Williamsi*, *C. insigne* Chantini, and also *C. Sallieri* Hyeannum, the latter of unusual height, and bearing nineteen flowers; *Odontoglossum ramosissimum*, *O. Halli leucoglossum*, *O. pulcherrimum*, bearing four dense clusters of flowers; and the new *Vanda Warocqueana*, with a quadruple cluster, from M. G. Warocque. The following Orchids were also admirable:—*Cypripedium Rothschildianum*, the new *C. insigne* Moensi, pale in colour, and of good habit;

and *Cattleya xanthoglossa*, from M. J. Moens, *Cypripedium Leeaanum superbum*, covered with bloom; *C. cœnantium superbum*, *Epidendrum ciliare*, a dense mass; *Brassia* sp., and *Lælia Gouldiana*, well-bloomed, from M. A. Van Imshoot; *Odontoglossum hastilabium*, beautiful and well bloomed; and *Cypripedium bellatulum*, with very large flowers, from M. G. Miteau; a splendid mass of *Cypripedium insigne*, from M. Madoux Fils; a Hybrid *Cypripedium*, and *Odontoglossum Wilckeanum* var., very elegant, from MM. Vervæet & Cie.; excellent varieties of *O. Alexandræ*, *O. Ruckeri*, *O. tripudians*, and *Cypripedium nitens superbum*, from M. le Dr. Capart; the charming *Oncidium cucullatum* × *Phalaenopsis*, a natural hybrid, intermediate between the two species; *Dendrobium bigibbum* var. *mar-moratum*, very finely coloured; *Mormodes Rolfeana* var. *lineatum*, the curious *Eulophia* sp. *Oncidium Bungeothi*, *Odontoglossum crispum* var. *lilacinum*, *O. blandum* var. *maximum*, *Lælia anceps Walkeriana*, *Cypripedium Argus* Moensi, *C. Leeaanum superbum*, *Bletia cateaulata*, *Odontoglossum Boddertianum*, *Masdevallia bella* and *M. Veitchi grandiflora*, *Cattleya Holfordi*, *Cypripedium Leeaanum* var. *Jacksoni*, *C. Dauthieri*, *C. cœnantium*, *Spathoglottis Augustorum*, *Aganisia discolor*, all from M. Linden; *Dendrobium formosum giganteum*, and *Lælia anceps* var. *Walkeriana*, with unusually large flowers, from M. Treysan; *Odontoglossum Rossi*, with large and well-coloured flowers, from M. J. Van Lansberge; *Cypripedium Röbelini*, well-flowered, and *C. hirsutissimum*, from M. Ch. Van Wanbecke. The jury, which was composed of MM. G. WAROCQUÉ, President; Em. RODIGAS, Secretary; Dr. CAPART, Houzeau de Lehaie, F. KEGELJAN, Huybrechts, G. Miteau, J. Moens, and A. Van Imshoot, awarded many diplomas and certificates for the above excellent collections.

LINNEAN SOCIETY.—At the meeting of this Society on Thursday, December 17, Professor STEWART, President, in the Chair, Mr. G. C. DRUCE exhibited specimens of *Sagina maritima*, Don MS., var. *alpina*, Syme, gathered on steep rocky places on the Cairngorms; and of *Illecebrum verticillatum*, Linn., found near Wellington College, Berks. Dr. R. C. A. PUNO exhibited some fruits of the Baobab (*Adansonia*), and of an undetermined species of Palm, which had been sent from Matabeland as good to eat, under the misleading names of "cream of Tartar fruit," and "wild Orange." He read an extract from Oates's *Matabeland*, describing the natural growth and appearance of the Baobab as observed in that country.

DEVON AND EXETER GARDENERS' ASSOCIATION.—On Wednesday evening, December 16, the usual fortnightly meeting of the Devon and Exeter Gardeners' Mutual Improvement Association was held at the Guildhall under the presidency of Mr. D. C. POWELL. The ordinary business of the meeting having been transacted, the Chairman introduced Mr. W. ROWLAND, who read a paper on the "Cultivation of the Tomato."

CALENDARS AND ALMANACKS.—We have received from Messrs. WARD, LOCK & Co., publishers, Warwick House, Salisbury Square, E.C., *Glenny's Illustrated Garden Almanack and Florist's Directory for 1892*, which, besides the usual matter found in an almanack, has figures of new Strawberries, Onions, Tomatos, and Potatos; the novelties in flowers, fruits, and vegetables, for the period, September, 1890, to September, 1891, some of which are figured; models of improved boilers for heating glasshouses; propagating cases, mowing machines, &c., and a trade directory. *Calvert's Mechanics' Almanack* is published by JOHN HLEXWOOD, 1, Paternoster Buildings; SIMPKIN & Co., Stationers' Hall Court, and others in London; and in Manchester, Glasgow, Edinburgh, and other large towns. It contains much information useful to the mechanic, engineer, decorator, and manufacturer. Messrs. WEBBS & Co., horticultural engineers, King's Road, Chelsea, S.W., send a specimen of a strong leather pocket-book and almanack combined, well suited for rough usage;

and T. FLETCHER & Co., a block Calendar of the usual useful stamp.

"DICTIONNAIRE DE BOTANIQUE."—This splendid publication, edited by M. BAILLON, and published by HACHETTE, has nearly reached its termination, if we may judge from the circumstance that it now reaches *Zyzy*. Indexes and references to plates, we presume, are to follow. The coloured plates have been issued without reference to the sequence of the text, and without numbers, so that it will be difficult to cite them properly.

THE GARDENERS' ORPHAN FUND.—At a meeting of the Committee of the above, held on the 18th inst., Mr. WILLIAM MARSHALL presiding, the following special receipts were announced:—Proceeds of concert at Chiswick in aid of the fund, sent through the Gardeners' Mutual Improvement Society, £20; collected at the Leighton Buzzard Chrysanthemum Show, and forwarded by Mr. J. SMITH, Leighton Buzzard, £20 10s.; sale of flowers and fruit at the Edinburgh Chrysanthemum Show, per Mr. M. TOWN, £20; and proceeds of twelve money-boxes, collected in different parts, £18 15s. 6d. The Hon. Secretary, Mr. A. F. BARRON, reported that applications had been received from thirty candidates in view of the approaching election; the same were examined, and all being in accordance with the regulations, were passed for publication in the voting papers. It was resolved that January 4 be the last day upon which applications can be received, and the Committee will meet upon that day.

PLANTS OF CENTRAL ASIA.—Dr. KANITZ, the indefatigable director of the Botanic Garden at Kolozsvár (Klausenburg), Hungary, has published a list of the plants collected in the excursion of Count BÉLA SZÉCHENYI in Central Asia, &c. The title-page and preface are in Hungarian, but the descriptions of the plants are in Latin. Bibliographical indications and references to plates are given, whilst of the newly-described species full Latin descriptions are supplied, and in some cases excellent lithographic illustrations. Several new *Primulas* and *Gentians* are figured. *Gentiana Széchenyi*, with blue flowers lined and spotted with white, from Szechuan, is worthy of introduction to gardens.

LETTUCE AS A DRUG.—Most of us have heard of the reputation of Lettuce as a sleep producer. "For want of rest, Lettuce and Cowslip wine *probaturum est*." So little virtue, however, has the Lettuce in this particular, that the drug *lactucarium* has quite gone out of use. Latterly, however, Mr. DYMOND, working in the research laboratory of the Pharmaceutical Society, has succeeded in extracting from the wild Lettuce, as well as from various cultivated forms, an alkaloid having the power, like atropin in belladonna, of dilating the pupil of the eye. This alkaloid is identical with *hyoscyamin*, but occurs in such infinitesimal proportions that lettuce eaters need fear no ill consequences. The occurrence of a principle formerly supposed to be peculiar to the *Solanaceæ* among the *Compositæ* is noteworthy.

STOCK-TAKING: NOVEMBER.—To those who carefully note the events of the day in the columns of their daily paper, and month by month note the figures under the above heading, the fact is very apparent that we—the great Free-Trade community—are "in touch" with every commercial nation under the sun. Rumours of war—market "manipulations"—are at once reflected in our Trade Returns; the sympathetic response is given by every factory throughout the land; and on the seas our sails increase or diminish in volume just as our markets are buoyant or depressed. This paragraph has been well "in evidence" during the past twelve months; its usual interest is not decreased to-day, when we record an increase of 15 per cent. in the imports, and a decrease of 12 per cent. in the exports—the former due to the large importation of Wheat, the latter to a falling off in the exports of iron and iron manufactures to the United States, concerning which,

more anon. The following figures are extracted from the "summary" of imports for the month of November:—

	1890.	1891.	Difference.
	£.	£.	£.
Total value for month	£37,152,273	£43,861,349	+6,709,116
§II.—(A.) Articles of food and drink—duty free	11,224,898	15,302,756	+4,077,858
(B.)—do., dutiable	2,786,491	2,619,209	-167,282
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)... ..	9,495,050	10,968,564	+1,473,514
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,536,514	3,184,150	-352,364
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,332,415	1,944,693	+612,278
(B.)—Parcel Post ...	42,126	39,214	-2,912

This much being "recorded," we may now with advantage devote a few lines to the McKinley Tariff. A few months since, President HARRISON gave directions for "taking stock" of the outcome of the latest thing in bad statesmanship—a little preliminary fanfare being performed on the Government trumpet; and the inquiries were instituted. The results are now to hand—there are no more trumpets! On receipt of the news respecting the Presidential movements on the Excise lines, we communicated with some folks in New York and Washington, who, experience had long before taught us, knew something of such matters. The response, based upon accurate information and a keen outlook, was somewhat startling, and would have been given in this column last month; delay has not reduced the importance of the Exchequer returns now published in the Government journals, and which we summarise as follows, to wit, that the serious effect of the McKinley Tariff upon the Custom's revenue is shown by the fact that, during the five months the Tariff has been in full force, the period between July 1 (when the tin-plate duty went into effect) till the end of November, compared with the same months last year, the Customs revenue has fallen off over 26,000,000 dols., or at the rate of about 87,000,000 dols.—say, £17,400,000—annually. The total receipts of the Treasury are stated to be 40,000,000 dols.—or £8,000,000—less than in the corresponding period last year. If this rate of diminution be maintained, the total loss for the year will, it is stated, exceed 94,000,000 dols.—£18,800,000. A few hours previous to the arrival of these figures in London, our Board of Trade had published some very interesting statements as to the share of the workmen in this country in the money cost of articles produced in the various industries—we recommend the publication in the United States of a corresponding series of tabulated statements—to be followed by Canada and all other interested and protectionist countries! The following figures respecting the imports of fruits and vegetables are extracted from the general mass of returns for November:—

	1890.	1891.	Difference
§ II. Fruit:—			
Apples, raw bush.	600,618	950,011	+349,393
Unenumerated, raw	341,833	134,762	-207,071
Onions	498,849	581,003	+82,154
Potatoes cwt.	51,779	79,032	+27,253
Vegetables, raw, unenumerated value	£19,757	55,896	+36,139

It appears that we have during the past week or two been receiving large quantities of Tomatoes from the Canary Islands, together with large consignments of Cranberries from America—pity the latter did not arrive in time to "jam" them up with the Blackberry crop.

SHIRLEY HIBBERD MEMORIAL.—At a meeting of the committee appointed to carry out this scheme, held at Chiswick on November 17, 1891, Dr. MASTERS in the chair, it was announced that the sum received from all sources was £259 9s. 6d., and that after the payment of all expenses, amounting to £38 14s. 4d., there remained a balance in the bank of £220 15s. 2d. A satisfactory portrait of Mr. HIBBERD has been hung in the Lindley Library. The balance of the monies received is, after payment of the expenses of the deed, to be invested for the benefit of the orphan daughter in the names of Mr. W. R. HARGREAVE, Mr. LEONARD BARRON, and Mr. JOHN COLLINGRIDGE. The trust-deed is to contain provisions (1), that in the event of the death of the child, previous to her attaining her twelfth year, the amount then standing to the credit of the trustees shall be paid to the Gardeners' Orphan Fund; (2), that in the event of the decease of the child at any period between the twelfth and the twenty-first year of her age, then the monies invested shall become the absolute property of her uncle and guardian, Mr. C. M. MITCHELL.

HIMALAYAN JOURNALS.—We are delighted to have to announce the re-appearance of an old friend in the shape of a reprint of Sir JOSEPH HOOKER'S Himalayan Journal. It is now issued in one volume by Messrs. WARD, LOCK, BOWDEN & Co., with an introductory biographical note by the late Mr. BETANY. A book of this character is of perennial interest to the naturalist and to the geographer, whilst to the horticulturist it has a special value. Immense changes have occurred since the original publication of the book in 1854, but these changes have only enhanced the value of a book which should stand on the shelf with DARWIN'S *Journal of a Naturalist* in every garden library. Few more acceptable gifts could be made to a gardener than this delightful volume.

"THE LAW OF BANKRUPTCY."—Some of our readers are occasionally under the necessity, from some cause or another, of obtaining some knowledge of the law of bankruptcy. To such folk we may commend a little treatise by Mr. C. E. STEWART, and published by EFFINGHAM WILSON & Co., Royal Exchange, in the earnest hope that they will require no further practical insight into the subject.

PUBLICATIONS RECEIVED.—*How to Grow Onions*. By J. A. TAPLIN.—*Report of Proceedings of Fruit Conference, Manchester*.

PLANT PORTRAITS.

CAMPANULA PULLA, *Garden*, November 14.
LEPACHYS COLUMNARIS, *Meehan's Monthly*, November.—Yellow Composite, allied to *Rudbeckia*.
SENECIO HERITIERI.—A beautiful greenhouse plant, allied to *S. cruenta*, which is the origin of the cultivated *Cinerarias*. It is the *Cineraria lanata* of Lamarck. *Garden and Forest*, October 28.

HAZELWOOD, KINGS LANGLEY.

[SEE SUPPLEMENTARY ILLUSTRATION.]

LEAVING behind the ancient city of Verulam—the modernized St. Albans of Orchidic fame—with its renowned and picturesque-looking Abbey standing on a commanding eminence, where it has withstood the storms of nigh eight hundred years, passing along a narrow winding road for some seven miles or so, when the Hawthorns and Brambles were putting on their autumn tints, we reached at length Hazelwood, Kings Langley. This demesne, which consists of some five hundred acres, was once the property of Lord Rokeby, but now for several years has been the seat of Vice-Admiral Ralph P. Cator.

The time at my disposal allowed me to pay only a passing attention to the trees and shrubs, of which there is a very rich variety in the grounds at Hazelwood. It is little wonder that artists go into raptures over the colouring of the autumn landscape, and last season the depth and variety of tints innumerable seemed to be more conspicuous than usual—

perhaps because the sights of previous autumns have, with time, somewhat faded from my remembrance. At any rate, the red and brown foliage of the sturdy and goarled Oaks, and the deep purple, crimson, or mellow brown of the Beeches, with their tall, smooth trunks, formed a beautiful contrast to the deep green hues of the Deodars and Lebanon Cedars, Pines of various species, Abies, Araucarias, &c., with which they were intermingled. The common Virginian Creeper and Veitch's variety were likewise all aglow with various hues of crimson and purple-brown. Not so the beautiful *Magnolia glauca*, which seemed to care little for the

Fine shrubs abound, and good use is made of the columnar forms of Irish Yew, and of *Thuia* in variety.

The parterre depicted in the lower view consists chiefly of round-headed shrubs, contrasted with the columnar or pyramidal forms above-named which stand on turf. Amongst these blended with good taste are some few shrubs, flowering and others, which are allowed to grow in restrained negligence together with beds of herbaceous plants, Rose bushes, flowering climbing plants on poles and arches, clumps of Adam's Needle, &c. It will be remarked that plenty of gravelled space is allowed between the groups and

best species and varieties is to be found, which is in a clean and healthy condition. Although the houses have not been specially constructed for Orchids, having been built by Messrs. Wright & Holmes with curvilinear roofs, the glass fitted without putty, nevertheless the plants have thrived well. In the cool house was to be seen a fine display of *Odontoglossum crispum*, the flower scapes with from sixteen to eighteen flowers each; and the large golden-blotched *O. grande*. Among the *Dendrobium*s, the gigantic white-flowered *D. formosum* displayed its incomparable blooms in company with *D. Jamesianum* and *D. infundibulum*. The rare *Oncidium Larkianum*—a supposed natural hybrid between *O. crispum* and *O. Marshallianum*, had a fine flower spike. It is to be hoped that this fine species will become more abundant than it is at the present time. *Cypripedium*s are in strong force, most of the best species and hybrids being represented. Among *Dendrobium*s not mentioned above might be named *D. nobile* with its varieties, *Cooksoni*, *nobilis*, and *Sanderianum*, *D. Pierardi*, *Wardianum*, *Falconeri*, a fine batch of *MacCarthyi*, and a few of the so-called Elephant Moth *Dendrobium*, *D. Phalaenopsis Schroderianum*, which has lately created such a sensation. *Cattleya*s were well to the front, and among the usual kinds were several pieces labelled *Warocqueana* and *labiata autumnalis vera*, which, I presume, may now be considered as synonymous from a botanical point of view. *Aerides*, *Angraecum*, *Phalaenopsis*, *Laelia*, *Celoglyna*, *Sophrontis*, *Sobralia*, *Zygopetalum*, *Miltonia*, *Lycastes*, *Calanthe*, *Brassia*, and several other minor genera, all find a place, and altogether they make a choice and valuable collection. J. W.

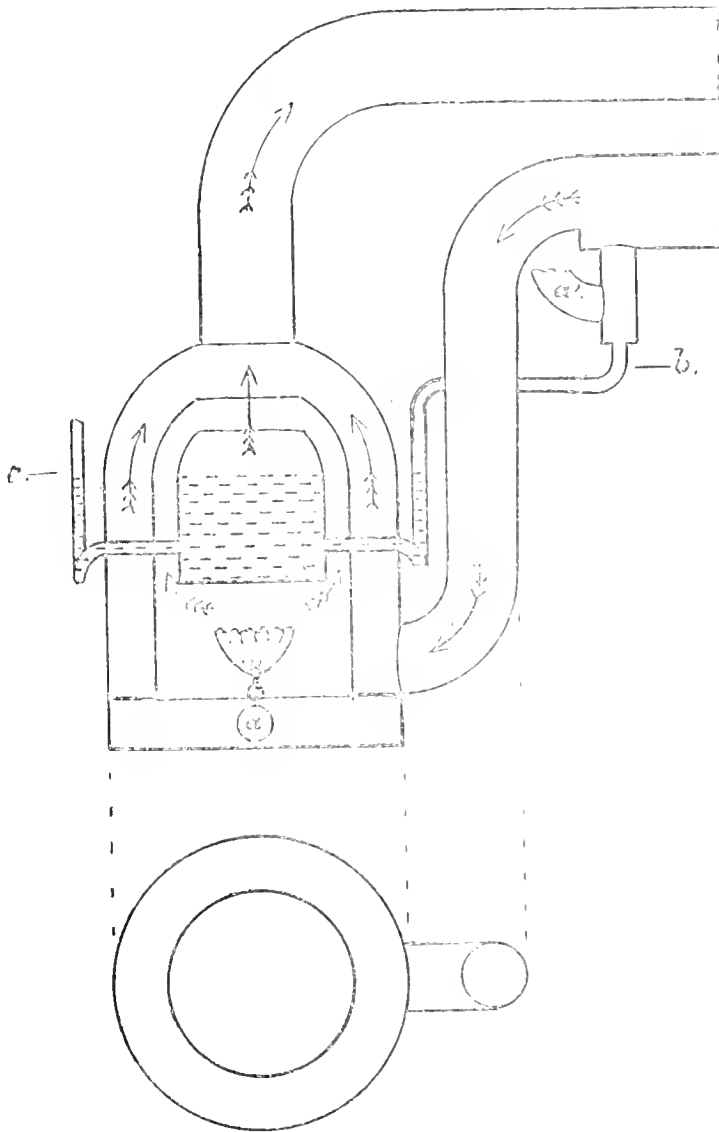


FIG. 111.—A NOVEL HEATING APPARATUS.

AN IMPROVED METHOD OF, AND APPARATUS FOR, HEATING.

In this apparatus a generator of suitable design and dimensions is provided with an air chamber, or with air chambers, and with a boiler fitted with tubes for generating heat—the boiler being supplied with water by a suitably-placed cistern—and pipes or other appliances are attached thereto as required for circulating, distributing, and using the heat generated.

The air chambers and the system of pipes have free communication with the atmosphere by apertures in the under-surface of the pipes, which provide for the circulation, expansion, and contraction of the hot air and vapour, convey the condensed water to the boiler, and maintain an equal pressure between the atmosphere outside the apparatus and the current of heat circulating therein.

The arrows in the generator indicate the rise of vapour from the boiler, the hot current of waste heat from the gas flame, and the hot air current in the air chamber. The heat and vapour unite and form the moist circulating current.

The arrows in the pipes show the direction of the flow, and the current of non-radiated heat returning to the air chamber.

In small apparatus, the fuel may be gas or mineral oil, and the waste heat may be passed through the pipes to find its exit through the small pipe *a'*, covering the aperture for expansion, which is carried to the outside air.

For large apparatus, breeze, coke, or coal, can be used, and the quantity of fuel required will be little more than a third of the amount consumed by hotwater apparatus of equal size.

The generator can be substituted for the boiler of existing hotwater apparatus, and the water in the pipes dispensed with, thereby saving the fuel required to heat it. H. Stevenson. [We hope soon to be enabled to see the above apparatus at work, and to give our readers the results of an actual trial. In any case, we have here a radical change from the usual modes of heating, and obtain heat direct from its source without the intervention of a large body of water which is always a source of expense. We are informed that any required degree of heat is

dulness of the season, and several of whose large white flowers peeped out here and there between the glossy bright green leaves. One of the arbours in the garden looked particularly gay, encircled by a Vine from Balaclava, planted by Lord Rokeby. The other interesting objects to be seen outside were numerous, some of which, however, must be included in my notes of the place, as they are nicely delineated in the views given in this week's Supplement of the *Gardeners' Chronicle*.

As will be seen in the upper view, the dwelling occupies the higher of the two terraces; and the views from the path by the house, and the windows extend over much of the garden in front and the immediate landscape in that direction. Each terrace is furnished with a broad path and flights of steps.

beds in one part of this pretty garden, thus affording not only comfortable access to them in rainy weather, but a good contrast of colour, better indeed than that afforded by the turf. There is much in this garden that we hear sometimes deprecatingly termed old-fashioned, but which is none the less a source of pleasure to the owner and beholder for all that.

Chrysanthemums were, at the time of our visit, in their full glow of beauty, and fine specimens of *Soleil Levant*, *Lord Beaconsfield*, *George Atkinson*, *La Triomphante*, and others, were observed in one of the houses. Other houses were stocked with the usual stove plants, and Nectarine and Peach trees.

The Orchids.—Eighteen months ago these plants hardly existed at Hazelwood, but now it is no exaggeration to say that a very fine collection of the

obtainable with this apparatus, and that it is far easier of management than any hotwater apparatus heated with coal, coke, or breeze. It is particularly suitable for small houses, where the length of piping required does not exceed 100 or 200 feet. In some of its principles it has a resemblance to the Polmaise system—is, indeed, an application of those principles, but without their drawbacks. Ed.]

NOTICES OF BOOKS.

THE PLANT-WORLD, ETC. By George Masee. Small 8vo, 212 pp. Whittaker & Co.

"The idea of this little book is to furnish an introduction to the study of botany from the standpoint of considering plants as living organisms, subject to all the varied vicissitudes that are more generally recognised as influencing animal life."

With these words, Mr. Masee introduces his little volume. The headings of the chapters will of themselves serve to show how he has carried out his idea—they are as follow:—1, Plant Architecture; 2, Chemistry and Physics of Plant-life; 3, Protective Arrangements; 4, Reproduction; 5, Relationship among Plants; 6, Fossil Plants; 7, Geographical Distribution of Plants. The chapter, "Plant-Architecture," might as well have been termed plant-construction, for it deals more particularly with the substances and materials out of which plants are made than with their architectural or morphological arrangement. But this is a detail of no particular moment. It is sufficient to say that Mr. Masee has well carried out his programme, and that his book is well suited for those who desire to obtain, without any great expenditure of time or pains, a general idea of plant-life, and of the principal questions which interest modern-time botanists.

FOSSIL BOTANY. By H. Graf zu Solms Laubach. Authorised English translation, by Henry E. F. Garnsey. Revised by Isaac Bayley Balfour. (Oxford, Clarendon Press.)

This is another of those useful books for which we have to thank Mr. Garnsey, Professor Balfour, and the Oxford Press. The basis of the work consists of notes of lectures originally delivered in the University of Gottingen, and in its preparation the author acknowledges the great assistance he has received from Dr. Williamson of Manchester; Mr. Carruthers, Mr. Woodward, as well as to M. Renault, of Paris. Free access has also been granted to the collectors of Goppert. The first chapter is devoted to a consideration of the manner in which plants become fossilised. The author then proceeds systematically to describe the fossil forms referable to the lower Cryptogams, Coniferae, Cycadaceae, Cordaites, Ferns, Equiseta, Lycopodites, Lepidodendra, Sigillariae, Stigmariæ, Calamariæ, Sphenophyllæ, and various miscellaneous groups or little-known assemblages of doubtful character. The higher-flowering plants are omitted. The whole subject is treated from the standpoint of the systematic botanist, which is in many cases different, at any rate in degree, from that of the professed geologist. The latter often acts on the assumption that more is known of the structure and affinities of certain forms than the botanist is willing to admit. The geologist hardly lays sufficient stress on the great changes of form and appearance which often characterise different stages of growth of one and the same plant. If botanists are led astray by such periodic forms of living plants, as they often are when they are seen isolated, it is not to be wondered at that the geologist, whose material is generally so much more imperfect, and so much more difficult to analyse, should fall into similar error; indeed, we suspect our geological friends will view with surprise the hesitating manner in which, in some cases, Count Solms expresses his opinions. His fellow-botanists, on the other hand, will admire this cautious handling of doubtful subjects, as much more likely to conduce to the ultimate establishment

of the truth than any dogmatic assertion on imperfect evidence would do. Geologists must bear in mind the great imperfection of their records, and the almost absolute certainty that many forms once existed of which no traces now exist. Such extinct forms must have furnished many links between pre-existing and actual vegetation. The account of the Cordaites here given is particularly interesting, as showing the relation of these plants to the Conifers. The pollen-cells, with their male prothallus unusually developed, are specially interesting. The subject-matter of the work is not of such a nature to justify any lengthened critical appreciation in these pages. We can only indicate the general nature of its contents, and commend their perusal to the student as within its limits the best general account of fossil plants that has yet appeared in this country. A few illustrations are given. It is to be regretted that many more were not forthcoming. The copious references to the literature will be of great service to the student, to whom also the ample index will be a great boon. The "get up" of the volume reflects credit on the Oxford Press, who have once again laid the botanists of this country under heavy obligations.

HOME CORRESPONDENCE.

GARDENERS' ORPHAN FUND: A SUGGESTION.—In the "Rules and Regulations" of this excellent charity, under "Objects," I read the following:—"The objects of the Fund shall be to make allowances or grants of money (in accordance with Rules B and H), to aid in the maintenance of the Orphans of Gardeners, Foremen in Public, Private, and Market Gardens, and the Managers or Departmental Foremen in Nursery and Seed Establishments." It seems to me that this particular rule wants amplification, in order to give a wider scope in the benefits conferred, and enlist the heartier sympathies of those who are now practically outsiders, but yet who may be, are indeed, supporters of the Fund. 1. As the rule at present stands, I take it, that the orphan of a journeyman gardener would not be eligible to participate in the benefits of the Fund, the word gardeners being used. As generally understood, this means, of course, head gardeners. 2. The fund now makes appeal, and rightly so, to a pretty wide constituency in the horticultural world—may such appeals be always nobly answered!—and the more comprehensive it can be in the distribution of its benefits (where needed) amongst the orphans of those connected, directly or indirectly, with the "gentle art," the wider, assuredly, will its popularity and usefulness be. The annual meeting is approaching, a fitting time at which to discuss such matters, when, possibly, these hints, which are well meant, and thrown out in the real interests of the Fund, may receive any attention they may deserve. J. B.

DR. HOGG PEACH.—In reply to Mr. Blayney, page 742, I very much doubt if he has got this variety true to name, as it is not usually guilty of such tricks as he describes; but, on the contrary, I have always found it one of the easiest Peaches to grow, and a very sure cropper—and it flowers most abundantly, the flowers being of the largest size and of a deep pink colour. The fruits colour up well if not shaded by the leaves, but the flavour and size of the fruits are not first-rate when compared with other varieties, and I have discontinued growing it for this reason. Your correspondent gives sure evidence that his treatment is right from the fact that he has grown Noblesse satisfactorily by the side of the offending variety. I should, if possible, discard the Dr. Hogg whether it be true to name or not, and plant either Crimson Galande, Prince of Wales, or Stirling Castle, in its place—and preferably the first of the three. If he cannot do this, he should lift the unsatisfactory tree as soon as possible, cut off any perpendicular roots and suckers, ensure perfect drainage, afford fresh soil if necessary, but without any admixture of manure, and take especial care that it is not deficient in lime, and not too adhesive. Peaches like a retentive soil, but it must not be of a binding nature; burnt earth, charred rubbish, and mortar rubbish are all valuable as antidotes to retentiveness. It does Peach trees much good to lift them every few years, even after they attain their full size, and if this be carefully done, no damage will occur to the ensuing season's crop,

unless by chance the fruit is a trifle smaller than usual; young Peach trees often fail to fruit satisfactorily under glass, or the fruit does not attain its full size, through making too strong a growth the previous season; to prevent this, they should always be planted in poor soil, and not grown in a close atmosphere. It is an easy matter to feed the trees in after years, when they have heavy crops, and show by the general character of their growth that they require assistance. *W. H. Divers, Kelton Hall Gardens, Stamford.*

PRIMULA NIVALIS.—I thank Mr. Wolley Dod for the instruction he gave me at p. 708 of the *Gardeners' Chronicle*, in reference to the above plant. I may now have an opportunity of seeing the plant, and if it be not so ornamental as *P. denticulata* and some others, I have no doubt it is botanically interesting, as is the whole genus. *W. Withers.*

PROTECTING PARSLEY.—We tried three ways of doing this last winter with unexpectedly varied results. Preparations were first begun in the previous March by sowing two rows of Veitch's Selected on a narrow border by the side of a wall; this grew vigorously, and in November looked all that could be desired. When frost commenced, it was protected by straw burlles placed against the wall in a sloping position. In ordinary winters we had always found this plan to answer well, but the exceptionally severe frost of last winter killed every leaf on the plants, and they were late in making a fresh start. Another lot of the same seed was sown at the same time in a square patch under the shelter of some tall trees, where it would be convenient to cover the plants with a frame; and when the severe frost came the frame and some thatched hurdles were put over it, the result was much the same as in the first instance. The third batch was sown near to the last-mentioned lot, in rows by the side of a walk, at the same time as the others, and did well also during the summer; in fact it looked too good to lose, although we did not intend to protect it at the time of sowing. Accordingly, a small quantity of dried bracken was placed over it, just enough to cover it. We were very glad after a few weeks that this had been done, as it was the only Parsley we had which survived the winter, and it plainly showed us that bracken is the best protector for this and similar purposes. *W. H. Divers, Kelton Hall, Stamford.*

ROCKERIES.—I fear that "H. E." and I are like two persons in a room, one window of which faces north and the other south. "H. E." looks through the south window and talks about what he sees, while I look through the north window and talk about what I see. Though I have not had time to make out the inquiry suggested by "H. E." of the Gentianella, the Violet, the Horse Chestnut bud, I will, in deference to him, so far modify my previous statement as to say many plants are lost through over-nursing. I will add, too, that giving the plant too much earth is a form of over-nursing not unknown to me. Doubtless there is, as "H. E." says, "coddling" and "coddling," and I can assure him that I should so far coddle such plants as I know to demand it, under ledges and in little nooks where they will get the shelter they require. But I fail to see that "H. E." has proved that the rockery system advocated by me is wrong, because Mr. Allen has sent his Snowdrops to Ryde to be saved from the ill to which they are heirs in Somersetshire. Whilst giving its full force to "H. E.'s" wide and well deserved reputation as a gardener—and nobody wishes to detract from it less than I do—I might ask whether the Isle of Wight has no reputation of its own for climate? I must say, too, that my method is no more "happy-go-lucky," no more "free-and-easy" than "H. E.'s," though I contend that my rockery will look better in winter than his alpinery, and in summer will look as well. I daresay he may at Ryde save the lives of *Myosotium nobile* and an *Opuntia* or two, which we in the North should not plant upon a rockery, except under very exceptional conditions (although either of the above-named plants will survive 18° to 20° of frost). He may also save the lives of "many other things," but as he does not name them, I cannot give an opinion. "No man can do any more than his best," as "H. E." very truly remarks; and that—though no match for "H. E." with the pen, nor for his F.R.S. visitor in wisdom—I must continue to do for my rockery system, while "H. E." devotes himself, I trust, with ever-increasing success to his alpinery. *W. A. C.*

CELERY, WRIGHT'S GROVE PINK.—I note some of our leading exhibitors of vegetables depend upon

this variety exclusively as a red Celery, so highly do they think of it. It grows large, blanches readily, does not run to seed quickly, and is, moreover, of excellent quality; indeed, by some it is regarded as quite the best for that purpose, and no doubt it is for general use. S.

WINTER NELIS PEAR.—I forward a few fruits of the above variety grown on walls here. I have taken some pains to get size into the fruit, as you will observe. The fruit sent is fairly well grown, and it is well known to be small under the usual management. We have a few trained trees planted on different aspects to prolong the season of ripening, and we had the fruits in daily use last year for a period of six weeks, and are likely to have it for a longer one this year. This Pear requires high cultivation, also to have the bloom buds thinned out considerably, and the fruit likewise, as it is liable to set its fruit in bunches. It is one of the varieties that I recommend to be planted upon tiles in flat districts and where the soil is inclined to be heavy or stiff. It is an excellent Pear when well grown, of good flavour, ripens at a season when it is of great value. *Robert Smith, Yalding, Kent.*

LAW NOTES.

In the High Court of Justice, Chancery Division, on Thursday, December 17 (before Mr. Justice Kekewich), *Sir Henry Bruce Menx, Bart., v. Cudley*. The trial of this action raised a question of some interest upon the Agricultural Holdings Act, 1883. The object of the action was, in substance, to prevent the defendant, who was lessee of a farm under the plaintiff, from converting it into a market garden by erecting thereon glasshouses for the cultivation of Tomatos, Grapes, Mushrooms, and other market produce of that character. By a lease, dated the 21st of January, 1889, the plaintiff, Sir H. B. Menx, demised to the defendant the Bulls-Cross Farm, in Cheshunt and Enfield, in the counties of Hertford and Middlesex, adjoining the plaintiff's mansion, Theobald's Park, and consisting of arable and pasture land, together with the messuages and farm buildings thereon, comprising about 152 acres, at a rent of £225, rights of sporting being expressly reserved to the lessor, and the lease contained a covenant by the defendant that he would in all respects cultivate and manage the farm and every part thereof "in a good, proper, and husbandlike manner according to the best rules of husbandry practised in the neighbourhood," and would at all times use his and their utmost endeavours to preserve the game on the demised premises and the nests and eggs of all partridges and pheasants. The plaintiff's complaint was that, without his consent, the defendant, in 1889, erected on the "arable" land of the farm two glasshouses for the cultivation of Tomatos and other hot-house produce for the London market, and that in 1890 he erected a third glass-house, in spite of the remonstrances of the plaintiff's bailiff; also that he was intending to erect additional houses. The plaintiff contended that the erection of glass-houses for the purposes aforesaid constituted such a change in the mode of cultivation stipulated for by the lease as to amount to a breach of covenant, and that the conversion of the farm into a market garden was "waste" on the defendant's part, and would cause loss to, and impose additional burden on, the plaintiff. The plaintiff accordingly claimed an injunction to restrain the defendant from committing the acts complained of. The defendant contended that he had the right to erect glasshouses on the land, and that the same constituted an improvement to the farm and the inheritance thereof. He also pleaded acquiescence or consent on the part of the plaintiff. He also contended that the erection of the houses was authorized by the Agricultural Holdings Act, 1883, and that they were buildings which, having regard to the provisions of that Act, might be removed by the tenant at the expiration of his tenancy, or might be bought by the landlord.

The only questions his Lordship had to consider were first, whether what the defendant was doing was within the terms of the lease; and, secondly, whether, irrespective of the terms of the lease, it was "waste" according to the common law. A subordinate question coming under the first head was whether the plaintiff had consented to what had been done. Upon the evidence on that point, his Lordship came to the conclusion that the plaintiff has either personally or by his agents consented to the erection of two of the houses. As to the third house, there was some difficulty. His Lordship's impression was that there had been no positive consent on the plaintiff's part to the erection of that house; but that question was really immaterial, because, even if the defendant had obtained the consent, it would still be necessary to consider whether he could erect a fourth house. Now, his Lordship came to the lease, and upon that there was a point of real importance—namely, whether under a lease of what was called "agricultural land," the tenant was entitled to put up glasshouses for the cultivation of non-agricultural produce, such as Tomatos, Grapes, and the like. It was to be observed that, although this was a lease of a farm—that is to say, an agricultural lease—there was no prohibitive covenant against the lessee's doing things of this kind, and also no provision for a rotation of crops. Therefore, the lessee was left at large to cultivate the land at his discretion, the only restriction on that discretion being that he was to cultivate "in a proper and husbandlike manner, according to the best rules of husbandry practised in the neighbourhood;" and he was also bound at the end of the term to yield up in good condition not only the existing buildings, but all fixtures and other things attached to or set up on any part of the demised premises. So that the lease contemplated certain additions in the way of fixtures. Also it was to be observed that anything of this kind done was to be done at the tenant's risk. He could not compel the landlord to take it or pay for it, so that, after spending perhaps hundreds of pounds on the property, the tenant might be compelled to go out of possession without having got anything but a poor return for his expenditure, and possibly without getting anything back. This was so if the Agricultural Holdings Act, 1883, applied, except as to buildings, erected with the landlord's consent. Now, what was the tenant here doing which was not "according to the best rules of husbandry practised in the neighbourhood"? One must bear in mind the change of circumstances in the neighbourhood, and the mode of cultivation of land now adopted there. One must look and see what was going on in the neighbourhood and not exclude the consideration which came within one's own extra-judicial knowledge that the wants of the metropolis and the neighbourhood were constantly extending and necessitated the increase of market gardens. Then there was the consideration that in the neighbourhood of this farm there were other market gardens, and also other farms conducted on the principles which the defendant had adopted to his own advantage—namely, combining the farm proper with the market garden proper. His Lordship could not see that this was not using the land according to the best rules of husbandry practised in the neighbourhood. Construing the case according to the usages of mankind and the words of the lease, he saw no reason why the defendant should not erect such glasshouses as he thought fit. His Lordship was of opinion that the defendant was entitled to use the ground as a market garden, and, if so, he was entitled to cover it with glasshouses, and derive advantage from it in that way. Then was there any injury to the inheritance? The evidence showed that to be an absurdity; and that, so far from the erection of these houses being an injury to the inheritance, it would be an advantage to the farm, the ground being in the neighbourhood of London. The only other point was as to the application of the Agricultural Holdings Act, 1883. In the view his Lordship took of the case, it was unnecessary to consider what the meaning of the Act was; but the

Act appeared to go a long way towards getting rid of the old common-law doctrine of waste, and to be quite consistent with the two authorities above referred to. His Lordship felt inclined to hold that these houses were "improvements" within the Act—that is to say, improvements for which the tenant could get compensation; but he did not think it necessary to go further than that. His Lordship could not find a single point on which the plaintiff succeeded, and therefore there must be judgment for the defendant with costs. *Condensed from the "Times."*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

DECEMBER 21.—A meeting of the committee took place at Anderson's Hotel, Fleet Street, on the above date, Mr. E. C. Jukes presiding. Mr. R. Ballantine reported as to an interview he and the Secretary had recently with the Chairman and Secretary of the Royal Aquarium as to the exhibitions to take place there in 1892, with the result that the resolution passed at the last meeting, that the show in November next be limited to two days, was rescinded, and it was resolved, that in accordance with the request of the authorities of the Royal Aquarium, it be extended to three days, viz. Tuesday, Wednesday, and Thursday, November 8, 9, and 10. The two other exhibitions will be in September and October, the dates to be suggested by the Schedule Revision Subcommittee. Letters from various exhibitors bearing upon the revision of the schedule and other matters were referred to this committee.

An objection raised at the Batley (Yorkshire) Chrysanthemum Show, to the presence of Amy Faize in a class for six reflexed blooms, on the ground that it is a Japanese reflexed, was upheld by the committee after some discussion.

The secretary announced contributions to the special prize fund, including £6 from Messrs. H. Cannell & Sons, bringing the same up to £35. Seven new members were elected, including two fellows. A vote of thanks to the chairman closed the proceedings.

Obituary.

MR. W. ALFRED DICKSON.—We regret to have to record the death of Mr. William Alfred Dickson, which took place at his residence at Newton Villa, Chester, shortly after seven o'clock on Thursday morning, Dec. 17. Mr. Alfred Dickson was 54 years of age at the time of his death. He had the entire management of the nurseries during the whole period of his active business life. As a nurseryman, very few men living had such knowledge of trees and plants in relation to their history, their treatment, cultivation, and commercial value. The perpetual acquirement of knowledge in this wide and interesting field was aided by a memory of marvellous retentiveness, and a mental grasp crisp, clear, and in every way remarkable. He had that quick discernment which enabled him to pick up a point which gave a characteristic distinctiveness and a determining feature to a particular plant, and which once seen seemed never to be forgotten. If his love for plants did not lead him into the extravagant excesses which often mark the enthusiast, it was simply because his business brought him into close contact with the economical properties of flowers and shrubs and trees. Yet the tender regard he had for plants and flowers was manifested often to those who might be brought into contact with him at his offices in the nursery grounds. At such times when his attention would be given to some new variety which was shortly to add to the riches of horticulture, and with the introduction of which he was closely identified, one would find on his table, in front of him and about him, now a Daffodil, now a Rose, now a Carnation, or something of bright beauty, depending upon the season of the year when the call might happen to be made. This was placed so that it seemed to be more of a companion than a specimen to be critically examined for comment, for nomenclature, or for description. In this particular direction many of the newly

introduced plants owe their distinctive title to the perceptive and mental endowment of Mr. Alfred Dickson. As an employer he was firm, without that sternness which seems inevitable to some men when brought into contact with the problems and trials involved in the employment of labour, and in dealing with large masses of men. He was a strict observer of method and punctual discharge of duty. When he passed the word he expected the accomplishment of duty, and he was not slow to discern how far those about him could be trusted to carry out his instructions.

MR. JOHN VERT.—We regret to announce the death on December 1, at Norley, Frodsham, Cheshire, of Mr. John Vert, who had been gardener and bailiff to the Hon. A. and Mrs. Lascelles, for a period of fifty-two years. The deceased, who was an excellent cultivator, was the father of Mr. James Vert, gardener to Lord Braybrooke, Audley End, Saffron Walden.

VARIORUM.

WOES OF THE CATALOGUE MAN.—A reader sends us the letter that appears below, and writes:—"Pity the poor fellow who has customers like this to satisfy."

"Oct the 30 1891 Deare Sir I rite you a few lines to get yure Price one a few Plants, all redy Rooted What you price will be on these, if you are not too deare. I Will send for moore, and I can get you good menny orders for yure plants heare. they all say they will wait and see mine first. I Will rite What kind I want and I want you to tell me what they will cost me. I want you to let me have them as cheap as you can and if they are not to huy I will send for moore and get you all the orders that I can.

rite at once and let me no what you can do these are What I want now one Dabble Red tea Rose one Dubble yellow tea Rose one Dabble Red fusa to of the best wax Plants that you have got ones that has Dubble flowers an to colars of these to best lilies to colours Dubble if you have I want them that has the largest flowers. I don't want the small kind of Plants, if you do rite buy me I will buy you." The American Florist.

MARKETS.

COVENT GARDEN, December 23.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal sale-men, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

No alteration in prices; business somewhat brisker. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table with columns for fruit types (Apples, Kent Cobs, Lemons, Pine-apples, etc.) and their prices per unit.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table with columns for plant types (Adiantums, Aralias, Aspidistra, etc.) and their prices per dozen or per pot.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Table with columns for flower types (Acacia or Mimosa, French, Azalea, etc.) and their prices per bunch or dozen.

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

Table with columns for vegetable types (Artichokes, Beans, Beet, Carrots, etc.) and their prices per bunch or dozen.

POTATOS.

Christmas trade has affected prices but little, arrivals keeping pace with increased demand. There is still a demand for good quality, but samples of the best are few. Best, 95s. to 100s.; medium, 65s. to 70s.; common, 50s. to 60s. J. B. Thomas.

FRUITS AND VEGETABLES.

BOROUGH: Dec. 22.—Demand moderate at quotations:—Savoys, 1s. to 5s.; Broccoli, 7s. 6d. to 10s. per tally; Spinach, 2s. 6d. to 3s. per bushel; Turnips, 1s. 6d. to 1s. 9d.; Carrots, 1s. to 1s. 9d. per dozen bunches; English Onions, 5s. 6d. to 6s. per cwt.; English Apples, 2s. 6d. to 6s. per bushel; Canadian Apples, 15s. to 15s. per barrel; Newtown Pippins, 15s. to 25s. do.

SPITALFIELDS: Dec. 22.—Ample supplies, but a bad demand. Quotations:—English Apples, 2s. 6d. to 6s. per bushel; American do., 10s. to 16s. 6d. per barrel; Pears, 1s. 6d. to 2s. per half-sieve; English Tomatoes, 4s. to 5s. 6d. per peck; foreign do., 1s. to 1s. 6d.; Cabbages, 2s. to 3s.; Savoys, 3s. to 3s. 6d.; Cauliflowers, 6s. to 10s. per tally; Greens, 2s. 6d. to 4s.; Turnips, 2s. 3d. to 3s.; Carrots, 1s. to 2s. 6d.; Parsley, 2s. 6d. to 4s. 6d. per dozen bunches; Spinach, 1s. 6d. to 2s. 9d. per bushel; Parsnips, 1l. to 8l. per score; Endive, 1s. to 1s. 6d.; Cabbage Lettuces, 4d. to 8d. per dozen; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; English Onions, 5s. to 5s. 6d. per cwt.; Bordeaux do., 4s. to 4s. 6d.; Spanish do., 6s. to 7s. per case; Belgian do., 3s. 9d. to 4s. 9d.; Patch do., 3s. 9d. to 5s. per bag of 110 lb.; Celery, 6d. to 1s.; Horseradish, 1s. to 1s. 2d. per bundle.

STRATFORD: Dec. 21.—There was an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Savoys, 3s. to 6s. per tally; Greens, 1s. 6d. to 2s. 6d. per dozen bunches; do., 7s. to 12s. per tally; Cauliflowers, 1s. to 3s. per dozen; do., 5s. to 12s. 6d. per tally; Turnips, 2s. to 2s. 3d. per dozen bunches; do., 36s. to 50s. per ton; Carrots, household, 32s. to 45s. do; do., cattle-feeding, 28s. to 32s. do.; Parsnips, 9d. to 1s. per score; Mangels, 16s. to 20s. per ton; Swedes, 16s. to 20s. do.; Onions, English, 110s. to 130s. do.; do., Dutch, 4s. to 4s. 9d. per bag; Apples, English, 2s. 6d. to 6s. per bushel; American, 15s. to 20s. per barrel; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; do., 2s. 6d. to 3s. per flat; Celery, 1s. to 1s. 3d. per roll.

POTATOS.

BOROUGH: Dec. 22.—Quotations:—Hebrons and Elephants, 70s. to 90s.; Imperators, 60s. to 85s.; Bruce Magnums, 60s. to 90s. per ton.

SPITALFIELDS: Dec. 22.—Quotations:—Magnums, 55s. to 70s.; Regents, 55s. to 70s.; Champions, 50s. to 60s.; Imperators, 60s. to 80s.; Hebrons, 60s. to 80s.; Bruce Magnums, 60s. to 80s.; Snowdrops, 60s. to 70s.; Main Crop, 70s. to 80s. per ton.

STRATFORD: Dec. 22.—Quotations:—Magnums, 60s. to 80s.; Hebrons, 60s. to 75s.; Imperators, 45s. to 85s.; Scotch Main Crop, 40s. to 100s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending Dec. 19, and for the corresponding period in the previous year:—1891, Wheat, 36s. 10d.; Barley, 29s. 6d.; Oats, 21s. 4d. 1890, Wheat, 32s. 4d.; Barley, 28s. 8d.; Oats, 17s. 6d. Difference: Wheat, +4s. 6d.; Barley, +10d.; Oats, +3s. 10d.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; do., inferior, 45s. to 75s.; hay, best, 60s. to 92s.; do., inferior, 26s. to 50s.; and straw, 20s. to 40s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Table with columns for Districts, Temperature (Accumulated), Rainfall, and Bright Sun. Rows list districts 1 through 12 with corresponding weather data.

The districts indicated by number in the first column are the following:—

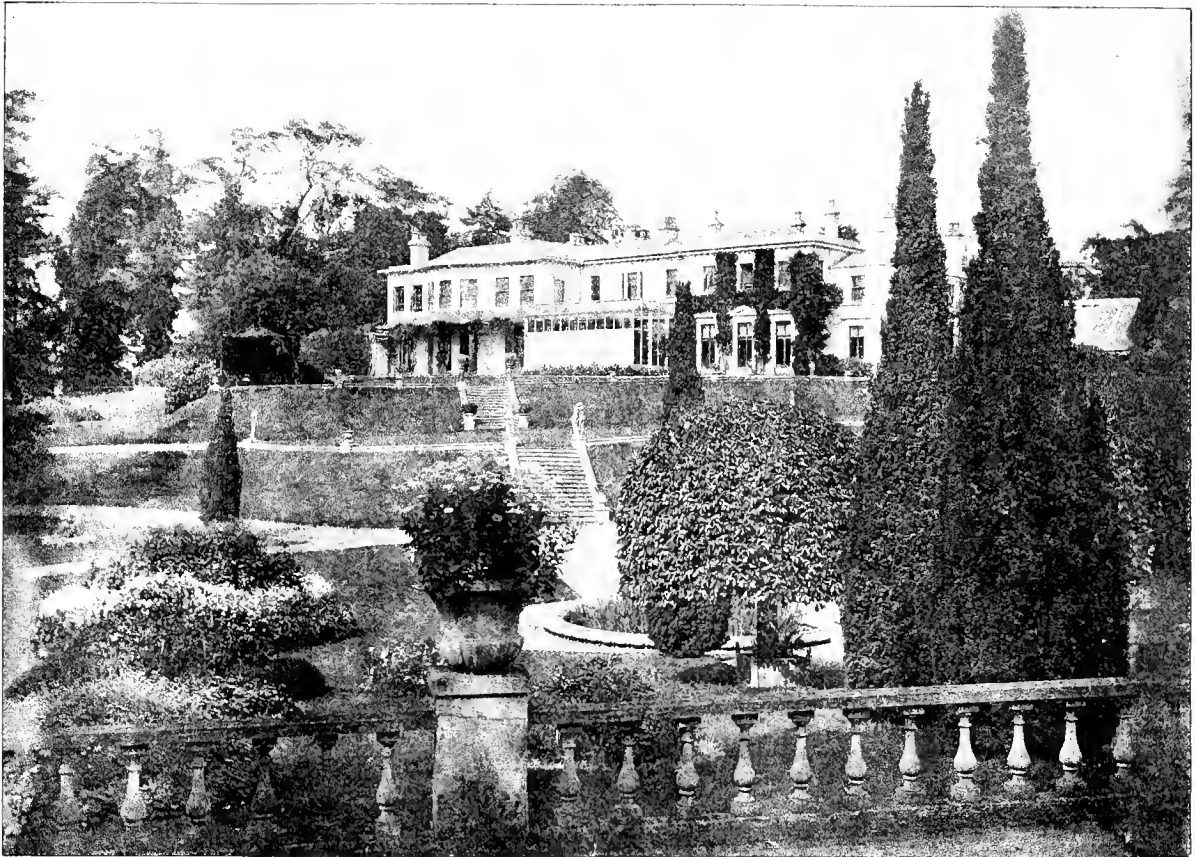
- Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S. Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending December 19, is furnished from the Meteorological Office:—

"The weather continued mild, rainy, and unsettled, during the earlier part of the week, but subsequently became cold and dry in all districts, excepting the extreme west of Ireland and Scotland. Heavy snow fell at many of the Scotch stations on the 15th.

"The temperature was again rather high until the period drew towards its close, when it fell fast. The averages were consequently again in excess of the means generally; in 'Scotland, N.' and the 'Midland Counties,' however, it just equalled the normal, and in 'Scotland, E.' and 'England, N.E.' it was a little below. The highest of the maxima were registered on the 15th in England, and on irregular dates elsewhere, and ranged from 56° in 'Ireland, S.' to 49° in the north and east of Scotland. The lowest of the minima occurred during the middle part of the week in the north, and at the end in the



VIEWS IN THE GARDENS AT HAZELWOOD.



more southern districts, and ranged from 16° in 'Scotland, E.' and 18° in 'Scotland, N.' to between 20° and 26° in the other parts of Great Britain, and to 32° in 'Ireland, N.' and the Channel Islands.

"The rainfall slightly exceeded the mean in 'England, E.' and 'Scotland, W.', but elsewhere it either equalled or was less than the normal quantity.

"The bright sunshine exceeded the mean in most of the southern and eastern districts, but shows a deficit in the west. The percentage of the possible duration ranged from 6 in 'Scotland, N.' and from between 9 and 16 in most of the western and northern districts to 34 in 'England, S.' and to 54 in the Channel Islands."

NOTICES TO CORRESPONDENTS.

COIL BOILER: *Invicta*. Apply to any of the large dealers in boilers. See our advertisement pages.

DENDROBIUM LEAVES SPOTTED: *J. J.* The plant has been kept too warm and close after its growth was finished.

IMPATIENS HOOKERI: In reference to the flowering of this plant, as mentioned on p. 739 of last week's issue, I regret that I should have written my note without having ascertained if the plant flowered at Kew, as I now learn that it flowers here regularly every year, although, so far as I can remember, I do not happen to have noticed it. *N. E. Brown*.

NAMES OF FRUITS: *A. Brown*. Round Winter Non-such.—*A. W. H.* 1, 5, 6, quite rotten; 2, Beurré Clairgeau; 3, Beurré Bachelier; 4, Glout Morçau.—*C. Lazenby*, 1, much decayed, probably Colmar d'Atenaberg; 2, Beurré Bachelier.

NAMES OF PLANTS: *A. W.* 1, *Cypripedium insigne*; 2, *C. venustum*; 3, *C. javanicum*, probably; 4, *Lælia anceps*.—*A. W. C.* Varieties of *Zygopetalum Mackayi*.—*A. W.* *Pol-monium corulea variegata*.—*P. A.* 1, *Abies Nordmanniana*; 3, *A. grandis*; 3, *A. nobilis*. Pinsapo is a true Silver Fir (*Abies*).

PEACH TREES IN POTS: *Royal George*. The trees are as easy to prune as a gooseberry bush, only the main branches ought to be kept wider apart, owing to the greater size of the foliage. Reserve as much of the past season's wood as has plenty of fruit buds on it, to afford you a chance of a good crop and some to spare. Let the wood be distributed all over the crown as much as may be, cutting the shoots to various lengths, with the view of presenting a uniform round shape to the crown. Cut away the shoots which have borne fruit the past season, leaving a shoot at the base of each shortened back to 6 inches, 1 foot, or 1½ feet, as may appear desirable, and never cut a season's shoot but to a wood bud, or it will die back to one in early summer. Get *The Miniature Fruit Garden*, by T. & T. F. Rivers, sawbridge-worth.

PELARGONIUM SEEDLING: *W. C. R.* Very pretty and distinct so far as we can judge.

SPICE IN ANCHOVIES: *J. R. J.* The sample of "spice" from the keg of so-called Norwegian Anchovies is a very mixed substance. There are traces, more or less, of black Pepper, Juniper berries, Ginger, Majoram, and perhaps several other things, but broken up so small as to be scarcely identifiable.

THE SEED TRADE: *Americanus*. It is found in practice impossible to give other than an approximate range of prices as a guide to values in the cases of Clovers, &c., in reports of seed markets. The range of qualities in each of the leading articles is very great. Red Clover, which on the 14th was quoted on Mark Lane at from 48s. to 60s. per cwt., is now quoted at from 30s. to 90s., according to quality. Alsike, from 40s. to 100s. White Clover, which on the 14th ranged from 48s. to 84s., is now quoted at from 30s. to 100s. It is impossible, therefore, that value can be fixed with such a marked difference in qualities—very much more than in the cases of fruit and vegetables.

COMMUNICATIONS RECEIVED.—*J. W.*—*H. S.*—*Dr. Dammer*, Berlin.—*S. M.*—*N. E. Br.*—The Secretary, Royal Institution.—*J. L.*—*W. W.*—*A. McK.*—*W. T. D.*—*J. D. H.*—*D. M.*—*V. C.*—*C. M. M.*—Secretary, Royal Geographical Society.—*G. B.*—*L. L.*, Brussels.—*M. Crépin*, Brussels.—*Ch. de B. Lierie*—*J. W.*, Mech.—*D. O.*, Obeng.—*W. W.*, O. T. D.—*T. W.*, Penfold.—*W. L.*—*O. W.*—*D. A.*—*W.*—*J. W.*—*R. D.*—*J. B.*—*W. N.*—*J. H.*, junior.—*R. A.*, Rolfe.—*E. M.*—*G. W.*—*Pteris*.—*J. B. W.*—*H. E.*—*P. A.*—*J. M.*—*H. L. E.*

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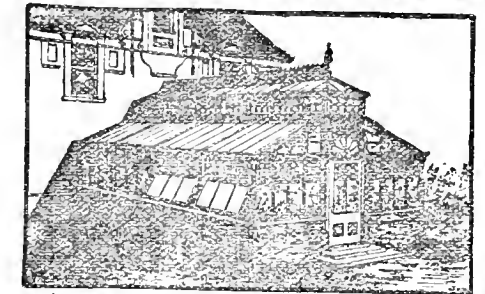
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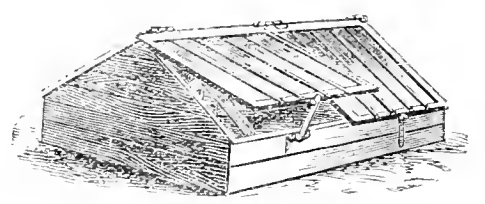
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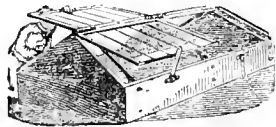
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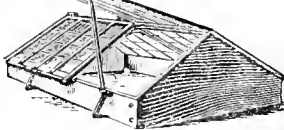
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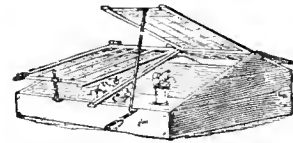


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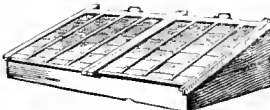


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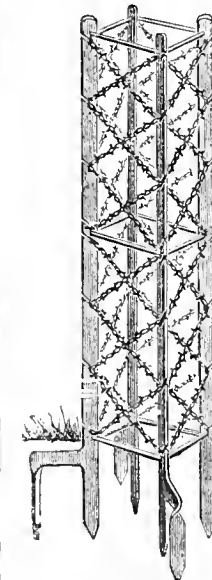
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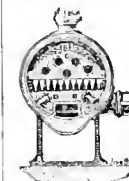
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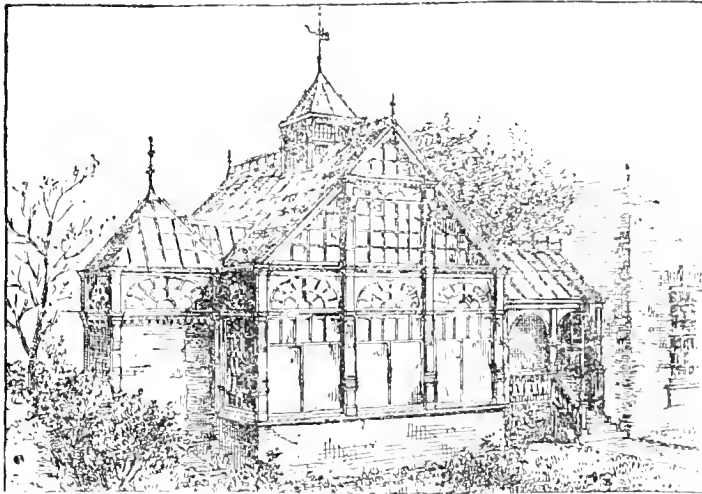
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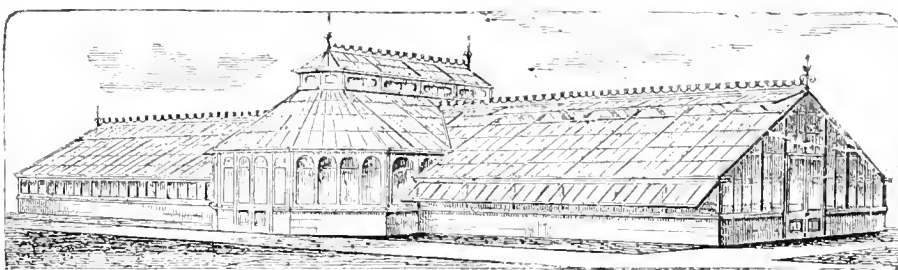
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Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manure, &c. Cheapest Prices of
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THE "STOTT" SPECIALTIES

For Destruction of Insect Pests.

Patent Distributor, Patent Syringe, Patent Sprayers.

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THE "CLIMAX" INSECTICIDE.

The Cheapest and Best of all Insecticides.

As a Wash for Plants for destroying all kinds of Insects and Parasites, which infest the foliage and roots, such as Green and Black Fly, Mealy Bug, Scale and Thrip, Red Spider, American Blight, Woolly Aphis, Caterpillar, Wood Lice, &c.

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PREPARED SOLELY BY

THE BOUNDARY CHEMICAL CO., LTD.,
LUTON STREET, LIVERPOOL.

For all **INSECT PESTS** in Greenhouses and Frames, nothing has proved equal to the

LETHORION (VAPOUR CONE),
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They are now universally admitted to be thoroughly uniform in strength, and safe for any Plant or Flower, even if four times the quantity are used.

Scale and Mealy Bug may be completely eradicated by using the Cones double strength.

PRICES—For Frames, &c., of 50 cubic feet, 6d.; 100 ft., 9d.; 500 feet, 1s.; 1000 feet, 1s. 6d.; 4000 feet, 5s. each.

THE HOUSES SHOULD BE WELL SECURED.

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BENTLEY'S—BENTLEY'S

BENTLEY'S INSECTICIDE.

1 Gallon, 9s.; 3 Gallons, 8s. per Gallon.

CARRIAGE PAID.

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BENTLEY'S SOLUBLE PARAFFIN.

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GISHURST COMPOUND used since 1859 for Red Spider, Mildew, Thrips, Greenfly and other blight, 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supercede it. Boxes, 1s., 3s., and 10s. 6d.

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As supplied to the Royal Gardens.

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COCOA-NUT FIBRE REFUSE, sack, 1s. 3d., 10 for 12s. 20 for 20s., 30 for 28s., sacks free; 2-ton truck free on Rail near works, 30s. **ORCHID PEAT**, 8s. per sack. **BROWN FIBROUS PEAT**, 5s. per sack; 5 for 22s. 6d.; **BLACK do.**, 4s. 6d. per sack, 5 for 20s. **LEAF MOULD, LOAM and PEAT MOULD**, each 3s. per sack. **COARSE SAND**, 1s. 6d. per bushel, 11s. half-ton, 25s. per ton. **PURE BONES**, $\frac{1}{2}$ -inch, 11s. per cwt.; dust, 11s. 6d. per cwt. **SPHAGNUM**, 7s. 6d. per sack. **CHARCOAL**, 8s. per sack. **TOBACCO PAPER**, 10d. per lb., 28 lb. for 21s. **CLOTH**, 1s. per lb., 28 lb. for 26s. **ROPE**, 6d. per lb., 28 lb., 10s. 6d. **RUSSIA MATS**, New Archangel, 19s. per dozen. **PETERSBURG**, 10s. 6d., 11s. 6d., and 12s. 6d. per dozen. List free.

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PEAT FOR ORCHIDS,
Azaleas, Rhododendrons, Heaths, Ferns, &c.

LOAM, LEAF MOULD, and POTTING COMPOST,
ALL FIRST-CLASS.

PREPARED ORCHID PEAT a Spécialité.

For Price LIST, apply to **The Forester, Joyden Wood**, near Bexley, Kent. **SPECIAL TERMS TO THE TRADE.**

EPPS'S selected **PEAT,**
For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. **SPECIAL ORCHID PEAT**, in sack only. Rich fibrous **LOAM**, superior **LEAF-MOULD**, Coarse, Crystal, and Fine **SILVER SAND**, **CHARCOAL**, C.N. **FIBRE REFUSE**, fresh **SPHAGNUM**, Patent **MANURES**, **FERTILISERS**, **INSECTICIDES**, and all other Garden Requisites. **Peat Moss Litter**. The Original Peat Depot. **RINGWOOD, HANTS.**

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THE HORTICULTURAL DIRECTORY
For 1892.

Price 1s.; post-free, 1s. 3d.

JOURNAL OF HORTICULTURE OFFICE,
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An ILLUSTRATED MONTHLY MAGAZINE, of 52 pages and cover. Exponent of scientific and high farming; advocate of co operation in agriculture, in the supply of farm requisites, and the sale of produce; organ of the Agricultural and Horticultural Association, the pioneer society for mutual supply of pure oilcakes, complete manures, reliable seeds, and implements on wholesale terms. Specimen copy free. Subscription, per annum, 5s., inclusive of postage. Single copies 6d. each, through all Newsagents.

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BOILING WATER OR MILK.

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GRATEFUL—COMFORTING.

C O C O A

BREAKFAST—SUPPER.

Notice to Advertisers.

THE GARDENERS' CHRONICLE

FOR

SATURDAY NEXT, JAN. 2, 1892,


WILL CONTAIN AS A

SUPPLEMENT

A

Sheet Almanac.

As a large EXTRA circulation of this Number is guaranteed, it will be a very valuable medium for Advertisements.

 Advertisers desirous of securing Space in this Number are requested to communicate with the Publisher, not later than DEC. 30.

"THE PUBLISHER,"

41, WELLINGTON STREET, STRAND,

LONDON, W.C.

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS. — *The Registered Address for Foreign and Inland Telegrams is "Gardchron, London."*

ADVERTISEMENTS.

Scale of Charges for Advertising.

Head Line charged as two.

4 Lines ..	£0 3 0	15 Lines ..	£0 8 6
5 " ..	0 3 6	16 " ..	0 9 0
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8 " ..	0 5 0	19 " ..	0 10 6
9 " ..	0 5 6	20 " ..	0 11 0
10 " ..	0 6 0	21 " ..	0 11 6
11 " ..	0 6 6	22 " ..	0 12 0
12 " ..	0 7 0	23 " ..	0 12 6
13 " ..	0 7 6	24 " ..	0 13 0
14 " ..	0 8 0	25 " ..	0 13 6

AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20s. If set across three Columns the lowest charge will be 30s. Page, 4s; Half Page, 4s 10s.; Column, 4s.

NOTICE TO ADVERTISERS.—*In many instances Remittances in Payment of Repeat Advertisements are received without name, address, or anything beyond the postmark on envelope by which to identify the sender; this in all cases causes a very great deal of trouble, and frequently the sender cannot be identified at all.*

Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisements which they wish repeated.

GARDENERS AND OTHERS WANTING SITUATIONS. 26 words, including name and address, 1s. 6d., and 6d. for every additional line (about nine words) or part of a line. These Advertisements must be prepaid. This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

Births, Deaths, and Marriages, 5s. each insertion.

POSITION. — *Advertisers are specially requested to note, that under no circumstances whatever can any particular position be guaranteed for advertisements occupying less space than an entire column.*

POSTAL ORDERS.—*To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to A. G. MARTIN, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.*

N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON ST., STRAND, W.C.

SUBSCRIPTIONS.

All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d.; 3 months, 3s. 9d. Foreign (excepting India and China), including Postage, 17s. 6d. for 12 months; India and China, 19s. 6d. Post-office Orders to be made payable at the Post-Office, 42, Drury Lane, W.C., to A. G. MARTIN.

Subscribers who experience any difficulty in obtaining their Copies regularly, are particularly requested to communicate with the Publisher (in cases of delay in the delivery by post, the cover should be forwarded with complaint).

ONIONS: How to Grow Them. Revised Edition, by J. A. TAPLIN, Banbury, Oxon. Price 6d. London: HOULSTON AND SONS, Paternoster Buildings; may also be had of the Author.

CHRYSANTHEMUMS,

And How to Grow Them. By C. E. SHEA, Esq.

A Practical and Scientific Treatise, that will be of great service, both to the oldest and most successful exhibitor and the youngest grower of the Autumn Queen. Mr. Shea has, by the treatment explained in his treatise, had a long series of triumphs, to which this season he has added, in keen competition with our most noted growers, at the Kent County, Watford, and Crystal Palace, finishing with the difficult feat of 1st in the 48 Japanese, at the Royal Aquarium Show, Nov. 10. In addition to the above, a paper by Mr. H. Shoemith is included in my new Chrysanthemum Catalogue, which also contains the most complete List of New Varieties ever brought together, and embraces selections from all the known Chrysanthemum world.

This valuable work is now ready, post free, seven stamps. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham.

JUST PUBLISHED.

THE MINIATURE FRUIT-GARDEN

AND MODERN ORCHARD,

By THOMAS RIVERS and T. FRANCIS RIVERS. AND INSECT PESTS,

By H. S. RIVERS.

20th Edition. Price 4s. By Post, 4s. 3d.

Published by THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth.

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DICKSONS, Chester—Vegetable and Flower Seeds.
CARTER & CO, High Holborn—New Chrysanthemums.
KELWAY & SONS, Langport—Glaucoli, &c.
E. P. DIX & SONS, Hull—Garden Seeds, &c.
H. & F. SHARPE, Wisbech—Seed Potatoes.
E. H. KRELAGE & SON, Haarlem—Herbaceous Paeonies.

GARDENING APPOINTMENTS.

MR. WILLIAM LEANEY, for the last four years gardener to Mrs. W. WARDE, Newbridge House, Bath, as Head Gardener to F. J. KINGFORD, Esq., Lacock, Chippenham.

MR. GREATORIX, Mytton Hall, Shrewsbury, informs the numerous Applicants for his Gardener's Situation, that the VACANCY IS FILLED.

WANTED, a SINGLE-HANDED GARDENER.—Must thoroughly understand Stove and Greenhouse Plants, Vines, Flower, Fruit, and Kitchen Gardening. Good Cottage.—H. E. KEARLEY, Woburnhurst Park, Aylesstone.

WANTED, an experienced MAN, to Grow Tomatoes, Cucumbers, Mushrooms, and Ferns; also Greenhouse Plants for Market. Well up in Cut Flower Trade.—H. MATTHEWS, Stockton Brook Nursery, Stanley, Stoke-on-Trent.

WANTED, a FOREMAN, thoroughly understanding Fruit (Inside and Out). An abstainer preferred. Age 26. Must have first-class references as to character and ability. Wages, 1s. per week. Bothy, &c.—Apply by letter only to HUGH SENESCALL, Walnut Gardens, Lydbury North, Shropshire.

WANTED, an UNDER FOREMAN, in the Fruit and Rose Department. Must be well up in Budding, Grafting, and Layering, and know Fruit Trees and Roses well.—Apply, stating wages required, to WILLIAM BARRON AND SON, Elvaston Nurseries, Borrowash, Derby.

WANTED, a good Garden LABOURER.—Not under 21; wages to commence at 14s. a week.—Address, Mr. LONG, Compton Gardens, Stockbridge, Hants.

Seed Trade.

WANTED, an active young single man as SHOPMAN, with a good knowledge of garden, flower, and agricultural seeds. Apply by letter, stating salary required to K. Messrs. Hurst & Son, 152 Houndsditch, London.

WANTED, as SEEDSMAN, an active Man, accustomed to the Retail Farm Seed Trade.—Full particulars and experience to F. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Temporary Engagement.

WANTED for a few weeks in a florist's shop, a young LADY who is experienced in all kinds of cut-flower mounting. Apply to B. MALLER & SONS, Burnt Ash Lane Nurseries, Lee, S.E.

WANT PLACES.

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

RICHARD SMITH AND CO.

beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

S ANDERS, St. Albans, can thoroughly RECOMMEND several first-class HEAD GARDENERS.

Gardeners, Farm-Bailiffs, Foresters, &c.
DICKSONS, Royal Nurseries, Chester (*Limited*), are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address—"DICKSONS, CHESTER."

Head Gardeners.

JOHN LAING AND SONS can at present recommend with every confidence several energetic and practical Men of tested ability and first-rate character. Ladies and Gentlemen in want of GARDENERS and BAILIFFS, and HEAD GARDENERS for first-rate Establishments or Single-handed Situations, can be suited and have full particulars by applying at Stanstead Park Nurseries, Forest Hill, London, S.E.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, wish to recommend to any Nobleman or Gentleman who may require a thoroughly competent and reliable HEAD GARDENER, David Lindsay, who was Head Gardener for the last twelve years to the late Sir Thomas Edward Moss, Bart., of Otterspool, near Liverpool.—Full particulars on application to the Company.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

GARDENER (HEAD), age 29, married when suited; where four or five others are kept.—W. H. DIVERS, head gardener to J. P. Hopwood, Esq., will be pleased to recommend his foreman to anyone requiring a good man, thoroughly experienced in all branches of the profession, and used to the management of men and the usual routine of a good establishment.—Ketton Hall, Stamford.

GARDENER (HEAD, or otherwise).—Age 35, married; twenty years thoroughly experienced in Early and Late Forcing Fruits, Flowers, and Vegetables. Excellent testimonials.—B. S., West Mill, Buntingford, Herts.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 30, married, no family. Sixteen years' experience in all branches. Good references.—GEO. DRAKE, Law-on Road, New Catton, Norwich.

GARDENER (HEAD WORKING); age 40, married when suited.—Mr. COOMBS, Head Gardener to the Earl of Dudley, Hinsley Hall, Dudley, can with confidence recommend his Foreman to any Gentleman requiring the services of a thorough practical man, experienced in all branches.

GARDENER (UNDER), Inside and Out.—Age 23. GEORGE HARBING, Maudiff Court Gardens, Abergavenny, can highly recommend a steady young man as above. Has been with him three years, and given him every satisfaction. Bothy preferred.

N. E. OWEN, Gardener to Lady Sutton, Conisburgh Abbey, Whitechurch, Salop, can confidently recommend C. Powell as FOREMAN (age 24), and T. Robinson as FIRST JOURNEYMAN (age 23) to any Gardener requiring the same.

IMPROVER, under Glass, or as GARDENER (UNDER), where three or more are kept.—WILLIAM PHILLIPS, Gardener, Kelsale Rectory, Saxmundham, Suffolk.

IMPROVER, under good gardener.—Age 18. Three years in London nurseries. Good char. etc.—C. C., 2, Wellesley Terrace, Higher Wellesley Road, Torquay.

TO GARDENERS.—Wanted, by a respectable lad, age 16, situation in a gentleman's garden. Two years' experience in stove and greenhouse. Bothy preferred.—J. CURREY, Milford Hill, Salisbury.

TO MARKET GROWERS.—MANAGER.—Experienced in Grapes, Tomatoes, Cucumbers, Chrysanthemums, Palms, Ferns, Cut Flowers, Grafting, Tea Roses, Clematis, &c. Twenty years' experience.—REX, 1, Grove Road, Mitcham.

SEEDSMAN.—One of the leading Houses in America REQUIRES the services of an experienced MAN, capable of taking charge of the Warehouse Department. A good position will be given to an energetic thoroughly-experienced man. None other need reply. Address, by letter only, stating age, experience, and references, also salary required, to GARSEED, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SHOPMAN, SALESMAN, or MANAGER.—Age 28; experienced in Wreaths, Bouquets, Plants, Seeds, Sundries, Book-keeping, &c. Energetic Salesman, with excellent references. Moderate salary.—FLORIST, 4, Ellerbe Road, Clapham.

HOLLOWAY'S PILLS.—Liver, Lungs, and Kidneys.—Most diseases of these purifying organs arise from obstructions, over the removal of which these celebrated Pills exercise the most perfect control. A course of them is strongly recommended as a remedy for such chronic affections as liver enlargements, congestion of the lungs, torpidity of the kidneys, and other functional disorders which cause much present suffering, and if neglected lay the foundation of organic diseases. Holloway's Pills are specially adapted for the young and delicate; their gentle and purifying action ranks them above all other medicines. In indigestion, nervous affections, gout, and rheumatism these Pills have achieved for themselves universal fame. They expell all impurities from the blood, and thus restore cheerfulness and vigour.



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SMITHFIELD IRONWORKS, LEEDS, AND SURREY WORKS, BLACKFRIARS ROAD, LONDON, S.E.,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

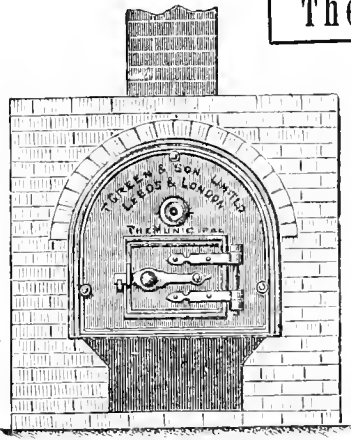
And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

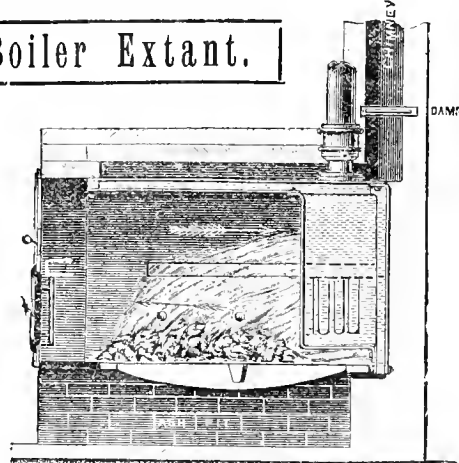
The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

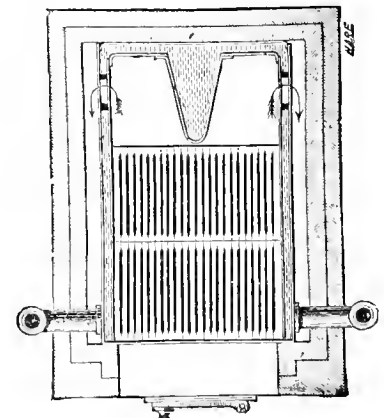
The Best Boiler Extant.



FRONT ELEVATION



LONGITUDINAL SECTION



SECTIONAL PLAN.

The longitudinal section gives a view of the fire-box, water space, flues, &c.

The cross section gives a view of the fire-box, water space and V-shaped back.

SIZES AND PRICES.

M B 1	3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep	} Calculated to heat 4-in. piping as follows:—	1000 ft.	Price £15 0 0
M B 2	4 0	by 2 0	by 2 0		1280	21 0 0
M B 3	5 0	by 2 3	by 2 6		2200	32 0 0
M B 4	6 6	by 3 0	by 3 0		4000	60 0 0
M B 5	8 6	by 4 0	by 3 9		7000	85 0 0

TESTIMONIALS.

MESRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.

Re HEATING APPARATUS.

Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings. The buildings are four storeys high, and we have a total length of about 25,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.

Yours faithfully, (Signed) G. W. BASHFORD.

AND HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

LOOK TO YOUR BOILERS,

And replace INEFFICIENT and DEFECTIVE ONES by

WEEKS'S PATENT DUPLEX UPRIGHT TUBULAR,

THE CHAMPION BOILER OF THE AGE.

It is unparalleled for POWER, ECONOMY, and DURABILITY, the WATER-BARS alone being equal to many Boilers.

A TEN YEARS' GUARANTEE given with all Duplex Boilers (subject to printed conditions) when fixed by the Patentees.

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KING'S ROAD, CHELSEA, LONDON, S.W.

